



CLIMATE CHANGE ACTION COMMITTEE MEETING

Tuesday, July 16, 2019 at 5:30 pm

Location: *Council Chambers*
2205 Otter Point Road, Sooke, BC

AGENDA

ITEM	Page #
1. Call to Order	
2. First Nation Recognition	
3. Approval of Agenda	
4. Approval of Minutes 1) June 20, 2019	1
5. Delegations 1) Climate Change Activities for Special Events • Ann Clement 2) Introduction of CCAC Member • Eric Nolan	8
6. Public Question and Comment Period	
7. Reports 1) Report – State of the Environment (LH) 2) Report – Vision in Progress (100-year plan) from T'Sou-ke First Nation	9 14
8. New Business 1) 2019 CCAC Meeting Schedule – need to reschedule October date 2) Food Security – for discussion 3) CCAC Strategic Plan (set priorities) – for discussion	27
9. Recommendations from Council 1) <u>May 27 Regular Meeting:</u> a) <i>Air Pollution</i> <i>THAT Council direct staff to forward the letter on Air Pollution from Jean Siemens to the Climate Change Action Committee, once it has been established, for discussion.</i> 2) <u>Tabled information from June 21, 2019 committee meeting:</u> a) <i>Compassionate Action Plan – Receive for information</i> b) <i>Float Home – For Discussion</i> c) <i>Climate Action through Public Ridership – Letter from Mayor Lisa Helps – Receive for information</i> d) <i>Municipal Community Garbage Collection – to Research and Report back to Council with Options</i>	28 50

10. Next Meeting: <ul style="list-style-type: none">• August 20, 2019 5:30 pm - Council Chambers	
11. Adjournment	



MEETING MINUTES

Phone: (250) 642-1634 Fax: (250) 642-0541 Email: info@sooke.ca Website: www.sooke.ca

Committee:	Climate Change Action Committee				
Date:	June 21, 2019	Location:	Council Chambers	Call to Order Time:	1:00 p.m.

Attendees: (P=present, E=excused, A=absent)			
Councillor Tony St-Pierre, Chair	P	Diane Bernard	P
Adrienne Wass	P	Eric Nolan	E
Andrew Moore	P	Kyle Topelko	P
Catherine Keogan	P	Roland Alcock	P
Christina Schlattner	P	Susan Clarke	P
Staff:			
Laura Hooper, Head of Parks & Environmental Services	P	Patti Rear, Deputy Corporate Officer (Recorder)	P

1. Call to Order	Councillor St-Pierre acknowledged the traditional territory of the T'Sou-ke Nation
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2. Approval of the Agenda	Approved, with the addition of 'Grant Funding for Environmental Coordinator', as item 4.2	Moved	CS	Carried	CU
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3. Introduction of Chair and Members: <u>Councillor Tony St-Pierre, Chair</u>	<p>Councillor St-Pierre welcomed everyone to the Committee. He requested that each member introduce themselves and provide a brief comment on their background specific to Climate Change Action and their short, mid, and/or long-term goals.</p> <ul style="list-style-type: none"> Local farmer concerned about food security and sustainability; would like to see a call to action Councillor St-Pierre asked members to identify their immediate, short-term and long-term goals as members of the CCAC Climate Leadership Caucus member thus will be able to share information and resources with the group Relocated to Sooke as felt it is the best place geographically to be during a Climate Change crisis given its access to ocean resources, clean water, abundant agricultural land, forests, etc.
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<u>Catherine Keogan</u>	<ul style="list-style-type: none"> • Local farmer and writer who has conducted work with First Nations Trust • Immediate goal is to determine an inventory for carbon emissions, identify opportunities, risks & responsibilities, identify the allies and stakeholders in this action for climate change, the vulnerable players, and engage and educate the community • Requested that the members be provided with information on projects that the previous committee implemented <p><u>Action:</u> PR informed members that some former minutes were on the DoS portal and a link has been previously emailed; others will be added (https://sooke.civicweb.net/filepro/documents/32083)</p>
<u>Roland Alcock</u>	<ul style="list-style-type: none"> • Formerly from the UK where he studied and received a PhD in Chemistry and then in Computer Science before coming to Canada • Would like to commit to mitigation work and education to reduce the impacts of what is occurring with climate change • Questioned if there was a DoS Corporate Action Plan for Climate Change, or other Reports to review <p><u>Action:</u> PR will post to DoS portal important documents that have been created for the Committee's review in collaboration with direction from LH</p>
<u>Susan Clarke</u>	<ul style="list-style-type: none"> • Science background in Biology and Ecology • Cognitive of the social aspects of climate change on humans, such as hope, stating that it is an emotional situation and questioned "how do we address the situation in the home and school positively" • Short-term goal: an action plan is important
<u>Adrienne Wass</u>	<ul style="list-style-type: none"> • Communications and public relations background • Questioned how to engage the community in making drastic and important changes to reduce emissions; isolation/grief are all motivators for change, but need to make it feasible too.
<u>Christina Schlattner</u>	<ul style="list-style-type: none"> • Background is education and researcher • Environmental activist
<u>Kyle Topelko</u>	<ul style="list-style-type: none"> • Background in construction and a volunteer firefighter. Has a young family who enjoys being in the outdoors. • Would like the committee to work toward transportation solutions, walkability, connectivity and accessibility; allowing tiny homes and lessening the carbon footprint

<p><u>Andrew Moore</u></p> <p><u>Diane Bernard</u></p> <p><u>Laura Hooper</u></p> <p><u>Patti Rear</u></p>	<ul style="list-style-type: none"> • Background in sustainability and working with First Nations. • Goals to assist with determining priorities and to suggest policies, keeping in mind the Iroquois tradition of asking “what is the effect on the seventh generation?” (i.e.: 100 years into the future) when making decisions. Would like to have First Nation values incorporated into the priorities and policies. <ul style="list-style-type: none"> • Long-term resident and business-woman with political background (former School Board Director). • Long-term goals include, protection of wildlife and forests, fire-risk, maintenance on District owned trails, becoming resilient and climate smart; becoming a leader at provincial and federal level related to Climate Change • Mid-term goals include policy advise and budgeting for Climate Change impacts. • Short-term goals include public transportation for the District, CRD and Vancouver Island; affordable housing; potential of sea-level rising issues; making impacts through bylaws such as the building bylaw, incorporating fire resistant materials, etc. <ul style="list-style-type: none"> • Staff member (Non-voting) • Head of Parks and Environmental Services for the District who is the primary contact and will provide or delegate required professional support for recommendations from the Committee to Council. • Background in biology, agriculture, and project management. Has been the lead on the District’s green team and climate action committee since 2009. <ul style="list-style-type: none"> • Staff support (Non-voting) • Deputy Corporate Officer for the District and administrator for the CCAC agenda and minutes and to provide legislative advice when required • Possesses a B.Sc. in Biology and Environmental Studies. • Was co-coordinator of the Green Team while employed with another municipality in which they implemented green initiatives for both the corporation and the community.
<p>4.</p>	<p>Terms of Reference</p>
<p>The terms of Reference for the Committee were reviewed.</p> <p>Discussion:</p> <ul style="list-style-type: none"> • Purpose of the Committee is “to provide advice to Council and recommend policies that will assist the District to achieve carbon neutrality by 2030.” <ul style="list-style-type: none"> ○ Committee suggested to change purpose to reduce all emissions (corporate and community) by 40-50% by 2030, as feel “carbon neutrality” is meaningless. 	

<ul style="list-style-type: none"> ○ Committee would like to add a statement that incorporates addressing Climate Change Action for both the corporation and the community. • Propose term changed from one year to two, as just getting started. • Propose meetings once a month, but without the July, August and December breaks; decided on the third Tuesday of the month at 5:30 p.m. in <i>Council Chambers</i> • Committee wanted to formalize having a T'Sou-ke First Nations representative appointed as a member to the by Chief Planes to the Committee.
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RECOMMENDATION:

- The Committee recommends THAT Council approve the amended Terms of Reference, as attached.

	Moved	AW	Carried	CU
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4.1

Draft Work Plan for Climate Change Action Committee

Discussion:

- Role of the Committee requires further definition so as not to duplicate staff efforts or previous CCAC member work.
- Committee requested to have a “state of environment” presentation added to the next agenda summarizing the previous committee achievements
- Also requested a 100-year plan presentation from the T'Sou-ke Nation (AM).
- Require a guide or work plan to prioritize actions accordingly for the 18-month term.
- Suggested applying for grant funding to hire a coordinator to assist staff.
- Attach “resource documents” section to the committee section in the iCompass portal.
- Committee members expressed a desire to “keep the process moving forward”.

ACTIONS:

- State of Environment presentation and report from LH (possibly in conjunction with former member Jeff Bateman who is presently on District Council)
- Information on 100-year plan from T'Sou-ke (AM)

4.2	Grant Funding for Environmental Coordinator
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LH spoke to the members about the possibility of applying for grant funding through FCM or other organizations to obtain an 'Environmental Coordinator' to assist the committee with research etc.

RECOMMENDATION:

- The Committee recommends THAT Council direct staff to research and apply for grant monies to fund an environmental coordinator to support the Committee.

	Moved	AW	Carried	CU
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5.	Draft Procedure Bylaw						
PR reviewed the relevant sections of the District's Draft <i>Procedure Bylaw</i> concentrating on the order of business, motions, quorum, agenda business deadlines and production, and Part 4-Committees and Commissions.							
Resolution: <ul style="list-style-type: none">• THAT the Committee receive the Draft Procedure Bylaw.							
				Moved	DB	Carried	CU

6.	Assigned Business – Recommendations from Council						
	a) Compassionate Action Plan –receive for information b) Float Home – for discussion c) Climate Action through Public Transit Ridership – Letter from Mayor Lisa Helps –receive for information d) Municipal community garbage collection – Staff to research and report back to Council with options.						
Resolution: <ul style="list-style-type: none">• THAT the Committee receive the ‘Assigned Business’ from Council and table the discussion of them to the next Committee meeting.							
				Moved	DB	Carried	CU


7. Next Meeting:	Meetings will be scheduled for the third Tuesday of each month starting at 5:30 p.m. in <i>Council Chambers</i> . <ul style="list-style-type: none">• July 16, 2019• August 20, 2019• September 17, 2019• October 15, 2019 – this one will need to be rescheduled as Regular Council meeting that night due to Stat holiday on the Monday of that week (Thanksgiving).				
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8. Adjournment Time:	3:44 p.m.	Moved	AW	Carried	CU
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Chair

Corporate Officer

Adopted by the Committee:
Received at Regular Council Meeting:

	TERMS OF REFERENCE
	Climate Change Action Committee
	Date Adopted: April 23, 2019
Historical Changes: n/a	

Purpose:

The purpose of the Climate Change Action Committee is to provide advice to Council and recommend policies that will assist the District to achieve a reduction in all carbon emissions by 40-50%, both corporately and in the community, by 2030.

Mandate:

Specific responsibilities of the Committee include, but are not limited to, the following:

- Inspire and sustain community commitment to achieving the District's climate action objectives;
- Identify and provide recommendations on climate adaptation and mitigation options;
- Identify opportunities and make recommendations on ways to build local climate action awareness and promote environmental stewardship within the community;
- Identify opportunities and make recommendations on innovative projects to help achieve carbon neutrality and where appropriate, develop and implement said projects;
- Providing a local perspective on the environment while giving due consideration to the balance between social, environmental and economic aspects;
- To advise Council on issues of environmental importance to community partners and stakeholder groups of the community at large;
- Communicate and develop relationships with organizations beyond the District of Sooke for the purpose of exchanging ideas, experiences, plans and successes;
- Provide recommendations and feedback on other climate change issues, as directed by Council, including environmental bylaws and policies;

Membership:

The membership will consist of up to ten (10) members including:

- One (1) member of Council to serve as Chair, appointed by the Mayor; and
- Nine (9) community representatives appointed by the Council
- Extend invitation to Chief Planes to recommend an appropriate representative of the T'Sou-ke First Nations community as a member of the CCAC

Term:

Members shall be appointed by Council resolution to a two-year term, ending December 1st of the second year, except for in a year of a general local election, in which case members' appointments expire on November 1st.

Meetings:

The Committee will meet once a month, on the third Tuesday at 5:30 p.m. as Special meetings may be held at the call of the Chair. The meeting rules and procedures will be in accordance with the Council Procedure Bylaw.

Staff Support:

The Parks and Environmental Services Department will be the primary contact and will provide, or delegate, the required professional support. The Corporate Services Department will provide secretarial and administrative support.

Patti Rear

From: Ann Clement [REDACTED]
Sent: July 8, 2019 12:59 PM
To: Tony St-Pierre
Cc: Patti Rear; Patrick Gauley Gale; Jeff Bateman; Wendy O'Connor
Subject: Re: Climate Change Activities on Aug 17th

Thank you for connecting us all, Tony.

Here are some of the ideas I'm pursuing by collaborating with community groups

1. On-the-spot sorting of recycling, compostables and garbage.
2. A call ahead of time to 'bring your own plate, cup and utensils'
3. Washing up station so you can put clean implements back into your pack to take home again
4. On-the-spot homemade lemonade (made without plastic?) and given away free to whomever brings their own cup
5. Art station to paint cardboard and plywood fish for a parade themed 'Sooke loves the ocean and all its creatures'

I'm open to all ideas and collaboration.

Ann

On Jul 8, 2019, at 12:30 PM, Tony St-Pierre <tstpierre@sooke.ca> wrote:

Hello everyone,

Patti: Ann contacted me wanting to connect with the CCAC to work together on climate change related activities for the District's Aug 17th celebration. Can she be put on the agenda as a delegation? What would be the best way to move on this? Can we include the rest of the CCAC on this correspondence? I checked and the group contact you sent my way unfortunately does not seem to be Mac compatible.

Ann also wants to connect with like minded individuals in the community or committee prior to July 16th to work on ideas like garbage sorting with kids and a parade.

Wendy & Patrick: The DoS should work with Zero Waste Sooke for a Zero Waste event. Would some EMCS students be willing to supervise the recycling stations?

Jeff: I thought you might have some excellent ideas on who else to invite to this particular party. Just some quick thoughts to keep this moving along!

Cheers everyone!
Tony

Get [Outlook for iOS](#)

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File No. 5270-20

CLIMATE CHANGE ACTION COMMITTEE
Meeting Date: July 16, 2019

To: Committee Members
From: Parks and Environmental Services
Re: History and Accomplishments of the CCAC

Recommendation:

THAT THE COMMITTEE receive this report for information.

Report Summary:

This report details the accomplishments of the District's Green Team and Climate Change Action Committees, since their inception in 2008.

Report:

Below is a list of milestones achieved by the District of Sooke through the work of its Green Team (staff representatives from each department) and the CCAC (staff and community representatives):

2008

Signatory to the *Climate Action Charter*.

Assessment for Solar Hot Water retrofit was conducted for Municipal Hall, and Firehalls #1 and #2. Grants were applied for, but the technology at the time given the amounts of energy (hot water) that was used did not warrant the installation.

2010

A light retrofit was conducted in Municipal Hall, and Firehalls #1 and #2 to update the ballasts and lamps in 2010. The project was funded by a grant from BC Hydro Power Smart.

Began reporting greenhouse gas (GHG) emissions to the Climate Action Revenue and Incentive Program (CARIP).

Community Energy and Emissions Inventory (CEEI) was published by BC to provide a baseline to monitor and report on progress toward GHG emissions reduction targets

Official Community Plan sets the following goals:

- Sooke will plan a liveable, sustainable community, encourage sustainable developments and transit-oriented developments and implement innovative infrastructure technologies, including production of clean/renewable, alternative energy.
- Reduce GHG emissions to 20% below 2006 levels by 2012, 33% below 2006 levels by 2020. The District of Sooke municipal operations shall be reduced to a carbon neutral status by 2012;
- Take responsibility for a sustainable, positive community future by ensuring the ongoing health of the social, economic and natural environment through climate protection, both within and surrounding District of Sooke. Increase local renewable energy production, while decreasing energy consumption, and improving energy efficiency;
- Partner with T'Sou-ke Nation regarding opportunities to implement a clean/renewable energy economy; and
- Reduce commuter traffic by retrofitting Sooke into a more complete sustainable community with a local work force.

2012

Carpooling programs were supported through advertising on website and at community events.

2013

Community Energy and Emissions Plan (CEEP) was developed in partnership with BC Hydro to examine community carbon emissions and develop an action plan for the community to reduce GHG emissions. A key action was to engage stakeholders, local businesses and the public to receive input and direction regarding the plan. This resulted in three top priority objectives:

1. Promote home retrofits and demand side management (DSM) programs to reduce energy consumption,
2. Improve walking infrastructure (sidewalks connecting central schools), and
3. Organics diversion from Hartland Landfill.

2014

The District further confirmed their commitment under the BC Climate Action Charter by striving to become carbon neutral in its operations annually and established a Carbon Tax Rebate Reserve Fund. The purpose of the fund was to be used for initiatives to reduce carbon emissions in the District of Sooke, using the carbon tax rebates received.

In addition, staff were directed to implement a “zero-waste” corporate waste management strategy. This resulted in the development of a comprehensive recycling and composting system for waste diversion.

2016

Local yard waste and composting (bio-solids) were big topics for this year. Staff were tasked to provide an estimate for a feasibility study for a district owned and operated, commercial compost facility utilizing bio-solids and yard waste. No action has been taken to date due to the scope of the project and the absence of staff time to complete this large project.

All Committees were dissolved in the last quarter of 2016 and have not been active since.

Strategic Relevance:

Previous Council Strategic Plan included “Enhancing Community Livability”. The Draft Council Strategic Plan (2019-22) includes a huge component directly related to environmental protection and leadership, which will be incorporated into workplans once the Plan is adopted by Council.

Attached Documents:

1. Summary of CCAC Recommendations adopted by Council (2012-16)

Meeting Date	Topic	Recommendation adopted by Council
02-Oct-12	Corporate Carbon Neutrality and Integrated Corporate Energy Emissions Plan	... to refer the Climate Change Action Committee recommendations on Corporate Carbon Neutrality and the Integrated Corporate Energy Emissions Plan to the Finance and Administration Committee.
02-Oct-12	Carpooling	...to direct staff to provide information on the BC Transit – Jack Bell Foundation Ride-Share program through the District of Sooke website and at the next Open House.
04-Apr-13	Corporate Carbon Neutralityto recommend that Council re-affirm its commitment under the BC Climate Action Charter.
04-Apr-13	Sooke Community Climate Action Strategy	...recommend that Council undertake an integrated corporate and community energy and emissions plan (CEEP); AND FURTHER recommend that Council allocate \$2,000 in the 2013-2017 Five Year Financial Plan to prepare and integrate corporate and community energy and emissions plan (CEEP).
05-Dec-13	District CEEP	...to direct staff to schedule input meetings with stakeholders, local businesses and the public for the Community Energy and Emissions Plan.
05-Jun-14	Corporate Carbon Neutrality	...to confirm the District of Sooke's commitment under the BC Climate Action Charter and become carbon neutral in its operations annually; AND TO establish a Carbon Tax Rebate Reserve fund for the carbon tax rebates received to be used for initiatives to reduce carbon emissions in the District of Sooke.
02-Oct-14	CEEP - Stakeholder Feedback	...to endorse the Corporate Energy and Emissions Plan (CEEP); AND TO direct staff to implement the top priority objectives of the CEEP, as follows:

		1. Promote home retrofits and demand side management (DSM) programs to reduce energy consumption 2. Improve walking infrastructure (sidewalks connecting central schools) 3. Organics diversion from Harland Landfill.
02-Oct-14	Corporate Carbon Neutrality – Waste Management Strategy	...to direct staff to implement a “zero-waste” corporate waste management strategy; AND FURTHER TO direct staff to obtain quotes for corporate waste management as per the Purchasing Policy.
17-Mar-16	Local Yard Wasteto direct staff to investigate opportunities for local yard waste composting facilities and/or programs.
2016	Bio-Solids and Yard Waste	THAT staff provide an estimate for a feasibility study for a municipally-run, commercial compost facility utilizing bio-solids and yard waste.

Vision in Progress

COMPREHENSIVE COMMUNITY PLANNING



T'SOU-KE NATION



T'SOU-KE NATION VISION STATEMENT

OUR
VISION IS FOR A
SAFE AND HEALTHY COMMUNITY.
WE SEE OURSELVES AS SELF-GOVERNING, ACCOUNTABLE,
STEWARDS OF OUR LANDS DEVELOPING A SUSTAINABLE AND
RESILIENT COMMUNITY WITH ECONOMIC DEVELOPMENT
GENERATING A RESPECT AND UNDERSTANDING FOR OUR
PEOPLE'S CULTURE AND HERITAGE
UNITED
EDUCATED
IN SOBRIETY

TO PROVIDE OPPORTUNITIES FOR ALL GENERATIONS TO COME.

Our Vision Statement includes our values and needs for:
self-government, a healthy and educated community, respect for our
tradition, economic independence, with many and equal opportunities.

The image of the tree indicates the intention to grow our vision to a
strong reality over time adapting to a changing environment, providing
protection and fruit for our people.



Artist: Willow Dodge
*One of our members designed this beautiful eye
for our project's logo to help us
create a collective vision –*

A PICTURE IN WHICH EVERYONE CAN
SEE THEMSELVES.

*This buy-in from the whole community is very important
because if a member cannot see themselves in the
vision they will either not get involved or may actively
try and work against the vision.*

COMPREHENSIVE COMMUNITY PLANNING - MAKING IT OUR OWN -

T'Sou-ke Community members have been involved
in developing a strong vision for the Nation – looking
ahead into the future for many generations to come.

Members felt strongly that this should not be a
one-time process but should be continuous,
responding to feedback from early achievements,
learning lessons on the way and developing best
practices for new projects.

All sections of the T'Sou-ke Community were
involved in developing a strong vision for the Nation.
Children, youth, families, elders, engaged in planning
ahead for many generations to come.

T'Sou-ke coined the name for this process:

VIP Vision in Progress for Very Important People

what's inside

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T'Sou-ke Traditional Territory



T'Sou-ke location – Reserves 1 and 2



T'Sou-ke Traditional Territory



T'Sou-ke Nation – Southern Vancouver Island

"An effective tool to build healthy and sustainable communities that improve the quality of life of their members"				
COMPREHENSIVE COMMUNITY PLAN				
PRE-PLANNING	PLANNING	EDUCATION & EVALUATION	IMPLEMENTATION	
<div>1. Complete research.</div> <div>2. Establish a planning team.</div> <div>3. Build a workplan.</div> <div>4. Develop communication strategy.</div>	<div>1. Build existing plans and studies.</div> <div>2. Identify unique qualities.</div> <div>3. Identify gaps and opportunities.</div> <div>4. SWOT analysis.</div> <div>5. Prepare strategic framework.</div> <div>6. Identify general planning areas.</div> <div>7. Prepare short / medium / long term goals.</div> <div>8. Identify activities and projects.</div> <div>9. Create implementation priorities.</div> <div>10. Collective vision.</div>	<div>1. Obtain draft final plan.</div> <div>2. Obtain feedback from community.</div> <div>3. Arrange presentation of plan.</div> <div>4. Obtain feedback from external agencies.</div> <div>5. Integrate visioning with cultural events</div>	<div>1. Build workplan and develop zoning land use and regulations in accordance with CCP.</div> <div>2. Chose priorities and coordinate planning process.</div> <div>3. Balance development with status quo -innovation with tradition.</div> <div>4. Implement projects supervised by staff and community.</div> <div>5. Prepare business plans-raise funds.</div> <div>6. Monitor and evaluate project.</div> <div>7. Regularly update community plan.</div>	
<div>COMMUNITY ENGAGEMENT</div> <div>1. Representative team.</div> <div>2. Champions.</div> <div>3. Newsletter / website.</div> <div>4. Individual interviews.</div>	<div>1. Communications team.</div> <div>2. Focus groups: youth, elders, staff etc.</div> <div>3. Special interest groups.</div> <div>4. Video / photos exhibitions.</div> <div>5. Special events / sponsorship.</div>	<div>1. Report back to whole community.</div> <div>2. Liaise with Municipality</div> <div>3. Agree vision / values.</div> <div>4. Agree priorities activities and projects</div> <div>5. Take a vote and Celebrate.</div>	<div>1. Community involved in choosing priorities and supervising projects through Implementation Dot Mocracy.</div> <div>2. Chief and Council / special working groups.</div> <div>3. Community members obtain work in projects.</div> <div>4. Community involved in evaluation of projects.</div> <div>5. Community involved in updating CCP.</div>	
<div>CAPACITY BUILDING & TRAINING</div> <div>1. Identify training needs.</div> <div>2. Apprenticeship</div> <div>3. Mentorship.</div>	<div>1. Holding meetings (chair, minute taking)</div> <div>2. Publicity (brochure, newsletter, branding).</div> <div>3. Video and photographic project.</div> <div>4. Press (publicity packs-internal and external).</div>	<div>1. Training and work opportunities.</div> <div>2. Funded posts to continue planning</div> <div>3. Summer students</div>	<div>1. Training specialisation.</div> <div>2. Mentorship</div> <div>3. Contracts opportunities</div> <div>4. Develop economic development opportunities</div>	
<div>FUNDING</div> <div>1. Seek funding channels.</div> <div>2. Establish budget.</div>	<div>1. Establish honoraria and meals allowance.</div> <div>2. Look at training expenses.</div> <div>3. Look at event sponsorship.</div>	<div>Seek sources of funding for CCP delivery</div> <div>Fund: : Publications</div> <div>: Video</div> <div>: Exhibition</div> <div>: Celebration</div> <div>: Cultural events</div> <div>: website</div>	<div>• Obtain capital and operations funding for immediate and long term activities and projects .</div> <div>• Develop partnerships with public, non profit and private sectors</div>	



guiding principles

Our guiding principles for sustainable communities

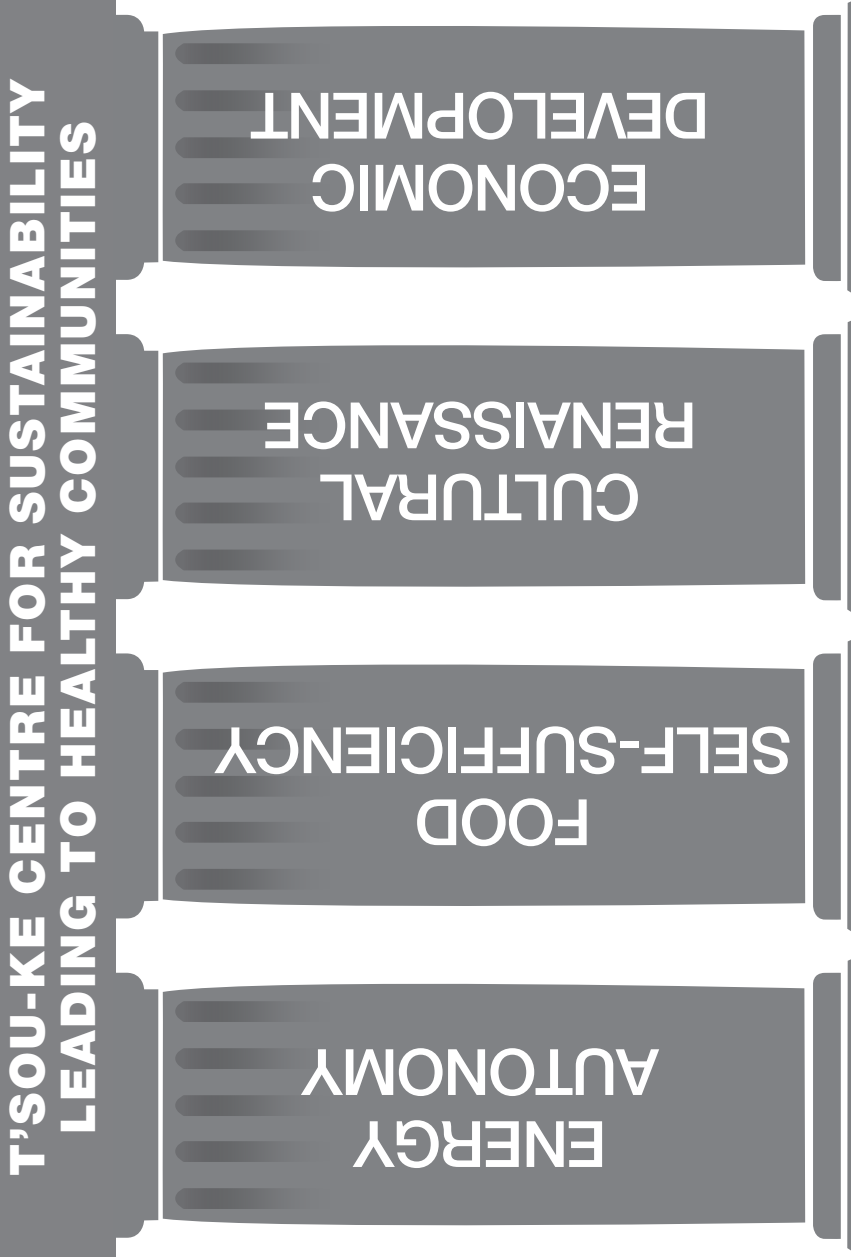
In our every deliberation we must consider the impact of our decisions on the next seven generations.

*Great Laws of the
Iroquois Confederacy, 1860*

The ability to meet the needs of the present without compromising the ability of future generations to meet their

own needs.
*~ Brundland Report for the
United Nations, 1960*

T'Sou-ke Centre for Sustainable Living Healthy Communities is built on four pillars:



tools & techniques

Tools and techniques for implementing community planning

Community Development Principles:

1. **If members do not come to your meetings and events – then you must go to them.**
2. **Treat your community members participants like gold dust and they will stay with you.**

Provide:

- Refreshments
- Good administration, agendas, minutes etc.
- Honoraria
- Materials, folders
- Capacity-building and training
- Outings and events
- Celebration! Many celebrations



Christmas Elders outing to Butchard Gardens



Staff visioning at Prestige Hotel



Chief and Councillors and Spiritual Healer discussing policy with Minister from Indigenous and Northern Affairs government department.

mothers and babes

Mothers were looking after their babies when the community was having evening Visioning Meetings so we went to join the Mothers and Babies weekly get-together as well.

Mothers had simple needs. They just wanted everyone to love their babies and to be able to offer them the best opportunities as their children were growing up.

Each Mother had their portrait taken with their babies and a large framed photograph presented to them at the end of three sessions.



Capture beautiful moments



Mother and Baby visioning together



Everything happens on the floor – to be part of the group best to join them sitting on the floor too

youth visioning

Youth Visioning Through Words & Drawings

What we like:

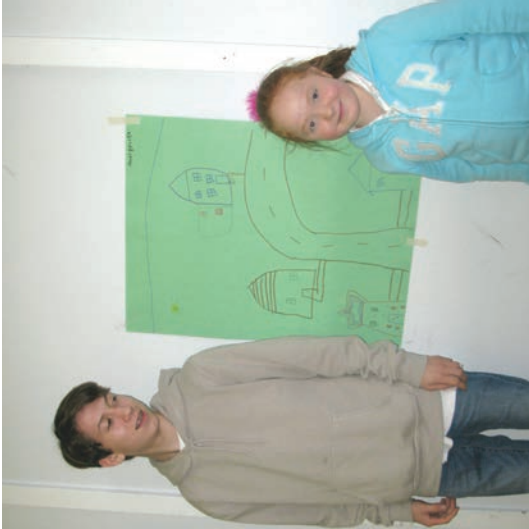
- Our community
- Our families
- The beaches
- The surrounding forests, rivers and sea
- The Potholes
- Camping

What we would like as well:

- Youth Centre, near Band Hall
- Skate Park
- Movie Theatre
- Gym and basketball court
- Music studio with recording equipment

What we would like on top of all these:

- Summer paying jobs
- Evening & weekend paying jobs
- Outings



elder visioning

What we would like:

- Continuous housing and care on Reserve
- Home and community care
- Provide Elders apartments with universal design (fit ramps, grab bars, bathroom fittings, etc.)
- Assisted Living
- Complex Care
- Hospice
- Improved social connection
- More events and outings
- Telephone tree
- Emergency care
- Intercom and lifeline call alert
- Identification bracelets



Celebrating Our Elders

staff visioning

We must first work out where we have come from and where we are before knowing where we are going to.

Visioning Statement

We are healthy and hopeful of obtaining successful sustainability and economic progress for our nation.

SWOT Analysis:

STRENGTHS

Great Staff
Unity within the community
Progressive leadership
Leading the way through sustainability
Great Chief and Council
Great programs

WEAKNESSES (Internal)

Need for more effective communication
Safer facilities – need upgrades
Community engagement.
More inclusiveness between staff and community

OPPORTUNITIES

Development
Partnerships between Sooke District and CRD
Tim Hortons and gas station
Youth connections and growth
Employment, training and workshops

THREATS (External)

Climate Change
Earthquakes
District of Sooke
Losing culture – closing the gap
Misinformation and misinterpretation
Funding cut-backs.



Compiling a collective vision using a single word from each participant



Staff visioning

Aspirations Hopes & Dreams, Potential

Maintain strength and develop uniqueness of community.
Provide more employment opportunities
Become independently wealthy
Pay no hydro bills

Better Health facilities – New building and offices
Pave the way for our children to have less struggles than present generation.
Leave the world in a better state than when we found it.

Encourage all community members to achieve Status and 'Come Home.'
Develop crafts, food and medicines
Sports complex
Museum and gift shop
More forested lands

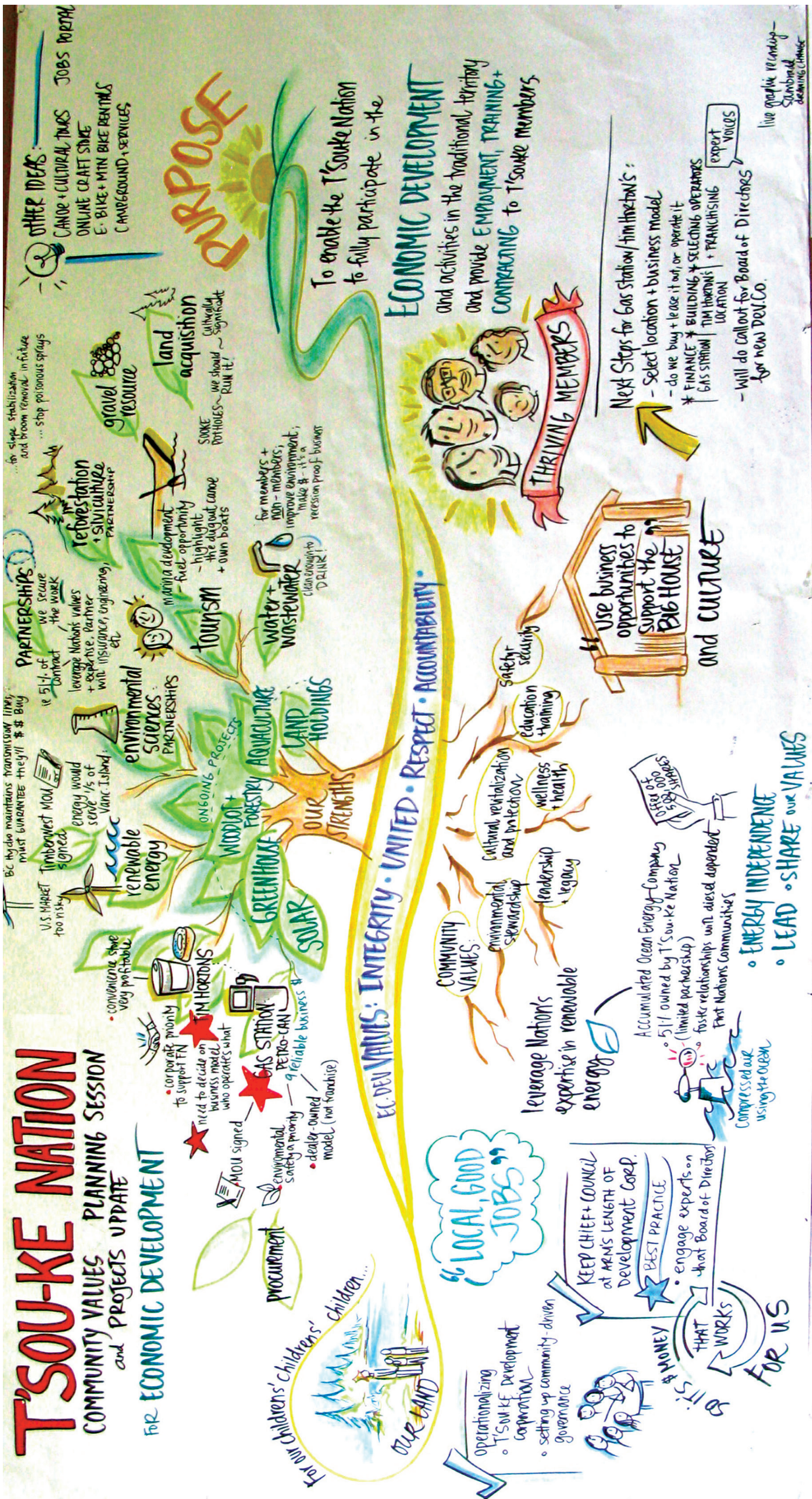
Sustain younger generation
All children to be able access to the level of education they desire.
Develop our culture, heritage, and traditional knowledge

T'SOU-KE NATION

COMMUNITY VALUES PLANNING SESSION

and PROJECTS UPDATE

FOR ECONOMIC DEVELOPMENT



spiritual visioning

Traditional teachings:

- We strive to create “aye squallen” (well being) throughout our community
- We are the Knowledge Keepers for our Nation.
- We will revitalize our culture and teachings with the understanding that everything is Sacred.
- We are a strong and proud nation and wish to share or knowledge, customs . and cultural teachings.
- We are the keepers of our land.
- We are helping to reclaim and manage our land, air, sea and resources; plants and animals on land and in the sea.
- We strive to integrate our teachings into everyday life.



Mandalas by: Darlene George



Chief Gordon Planes and Spiritual Healer Shirley Alphonse conducting a spiritual ceremony on the embankment



action plan

Goals, Objectives and Project Tracking Chart

COMPREHENSIVE STRATEGIC FRAMEWORK-ACTION PLAN				
KEY PLANNING AREAS		GOALS		OBJECTIVES
GOVERNANCE		GOALS		OBJECTIVES
		<ul style="list-style-type: none">Self governanceCommunity involvementJurisdiction/transparency100% accountability		<ul style="list-style-type: none">Negotiate a beneficial treaty agreementReach high (100) % of community in better communications. Consistent long term funding.
LAND MANAGEMENT RESOURCES AND HOUSING		<ul style="list-style-type: none">Obtain more landsProvide good stewardship.Affordable Housing for allJurisdiction		<ul style="list-style-type: none">Achieve treaty beneficial to whole community and implement. Improve Status Rights with less limitations
EDUCATION				<ul style="list-style-type: none">Project awareness Land Data Base
HEALTH		<ul style="list-style-type: none">Integrate education with First Nations culture		<ul style="list-style-type: none">Support Education for members past G12
INFRASTRUCTURE DEVELOPMENT AND ADMINISTRATION		<ul style="list-style-type: none">Improve quality of health of whole community.		<ul style="list-style-type: none">Prevention programs. e.g., Exercise and Yoga classesDiabetesAwareness program around Heart Attacks andElders assisted living facility on reserveElders Wellness CircleSafe access to main road during rush hoursUpdate policies and resources to address individual needsConnect Reserve 1 and 2 to sewage systemNew administration building.Convert existing Band hall to gym/youth centreImprove sidewalks
CULTURE		<ul style="list-style-type: none">Improve outdated road accessNew Sewers and Administration buildings		<ul style="list-style-type: none">New Longhouse with restored traditionsNew heritage building, museum to house Aboriginal artifacts.T'Sou-ke Nation Arts and Crafts Centre and annual festival with economic development opportunities for emerging artists.
SOCIAL DEVELOPMENT		<ul style="list-style-type: none">Celebrate being AboriginalEnhance opportunities to exercise rightsRestoration of cultureRe-skill community members in traditional arts and crafts, language and drumming		<ul style="list-style-type: none">Establish protected areasEstablish 'Tribal Journey' committeeEstablish outlet for First Nations artsEnable a renaissance of arts and culture amongst community members including language dance and songs
ECONOMIC DEVELOPMENT		<ul style="list-style-type: none">Encourage Healthy Communities		<ul style="list-style-type: none">Continue to encourage and educate around access to benefits and work opportunitiesProvide capacity buildingWorking with partners
FISHERIES & AQUACULTURE		<ul style="list-style-type: none">Economic sustainability and self sufficiency		<ul style="list-style-type: none">Full employment within the community plus self employment opportunities
		<ul style="list-style-type: none">Economic developmentSelf-sufficiencyFood-fish, social, ceremonial		<ul style="list-style-type: none">Mail - Retail outletsCommercial, light industrial, live/work development.Medical centrePhotovoltaic Electricity plant with ' feed in' to HydroNew Band and private housing developmentsClam beach tenures and depuration plantExtend Oyster tenures.Halibut and Black Cod renew and extend licence

solar

One of the pillars of the T’Sou-ke vision is to be Autonomous in Energy

In 2008 T’Sou-ke installed a solar project on reserve twice as large as any other in BC.

This now means that all T’Sou-ke administration buildings are Net Zero. T’Sou-ke sells surplus energy to BC Hydro in the summer and buys it back in the winter to reach net zero consumption and zero Hydro bill for the year. T’Sou-ke has learned many useful lessons and the whole community now focuses on ways to conserve energy.



Solar trainees on canoe shed micro grid solar project



Solar installation training session



Net Zero band hall

oyster farming

4-million oysters per harvest with a capacity to grow 32 million

T’Sou-ke Nation is partnering with Chinese Canadian Aboriginal Development Ent. Ltd (CCAD) to grow 4 Million Oysters in an eight hectare licence in the Sooke Basin this year.

The partnership has a licence that allows a total of 72 hectares to be developed with a possible 32 Million oyster harvest.

The type of oyster grown is Pacific Oysters (Crassostrea gigas)

Two band members have been trained in stock husbandry, farming techniques, vessel operations and are employed full time by the partnership with there being potential to double this number of employees several times in the coming years.



Band members sorting Oysters



Oyster seeds being placed in trays



Federal Minister for Indigenous and Northern Development



Oysters ready for harvest

wasabi farming

a challenging crop - with a high return on investment

T'Sou-ke needed a cash crop to go alongside the Community Greenhouse that provides food for community members.

Growing wasabi has a low capital cost (double sided plastic greenhouses) but a high revenue

income. Although wasabi is difficult to grow real wasabi is much sought after in USA and Europe.

Most wasabi sold in restaurants is not wasabi at all but horseradish with green colouring.



Building the Greenhouse



Planting wasabi



Harvesting wasabi



Preparing wasabi for export

T'Sou-ke centre for sustainability

Programs, workshops and tours

T'Sou-ke Nation has over 2,000 visitors from all over the world arriving each year for tours, workshops and programs. These activities are run by a new Social Enterprise, The Centre for Sustainability that ensures that community members are involved in running the workshops and the associated administration and hospitality.

Groups such as First Nations, Universities, Schools, Municipalities, NGOs and indigenous

people from far and wide book workshops from half a day to a week long. Programs include Spiritual Ceremonies, Renewable Energy, Food Security, Social Enterprises, Governance, Comprehensive Community Planning and Land Management.

The 'university campus' at T'Sou-ke covers the forest, the sea, the mountains and lakes as well as a converted Catholic Church on reserve



Youth worker learning conservation techniques.



Chief Gordon Plaines welcoming 4 chiefs from N. Manitoba to discuss replacing diesel with solar energy generation

solar opportunities

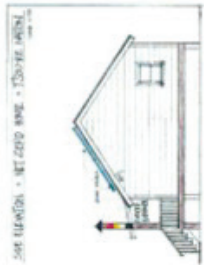
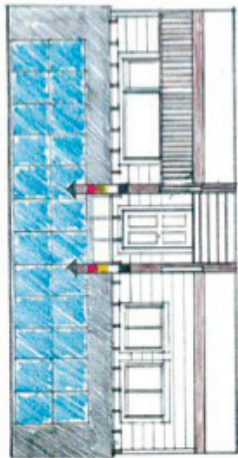
– Net Zero homes on reserve

Using lessons learned from its solar installation T’Sou-ke aims to apply conservation best practices to new and existing homes. One of the main lessons learned is that it is for cheaper to reduce demand for energy (though changing habits, more insulation and efficiency) than to produce energy (e.g. solar, wind, geothermal).

T’Sou-ke aims to design and construct a house using Passive House principles.

SOLAR OPPORTUNITIES -NET ZERO HOUSE ON RESERVE

FRONT ELEVATION
PLAN • NET ZERO HOME • T’SOU-KE NATION



The house should be so well insulated and draft proof that a family can heat their house just through body heat. Once space heating and water heating are made more efficient only then introduce renewable energy like solar. This way a family should find that they only need half the number of solar panels than originally thought.



Charging our electric cars with solar-generated electricity



Our meters go backwards

ladybug community garden

T’Sou-ke Nation’s community garden

We grow fresh, affordable foods and traditional teas for our membership, our community cooks and various events throughout the year.

From our gardens stems Youth and Elder oriented outings to gather Traditional Native foods, medicines and teas from our Traditional Territories, using our lands as an “outdoor classroom” creating a bond between young and old within our community, creating the name WUI CIST CEN TOL , (teaching them together) in our SENCOTEN language.



Hikes on Great Peaks



Traditional, Indigenous Native foods



Traditional seafood gathering



Gathering tea leaves and fruits.
We travel to great bogs for Alpine fruit.



Teaching the importance of our foods.
Workshops at our gardens teaches food security, growing methods and care of your garden throughout the seasons.

T'Sou-ke culture

Comprehensive Community Planning - TAG Visioning

- Arts and culture follow values and traditions
- Investing in learning language and culture leads to revitalization of community
- Priority to build big house in traditional style
- For resources look to other Nations examples, treaty, and private companies (logging companies)

SWOT Analysis:

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
Supports a wide community of artists.	Lack of Resources	Lazzar building upgrade	Succession – Linda leaving her coordination role
Enormous wealth of skills, experience, culture and riches to be shared.	Funding – long term	Teaching centre with resident artists	New champion needed
Dedicated coordinator	More proposal writing needed	Gallery and gift shop	Long-term availability of building?
Not For Profit Society - T'Sou-ke Arts Group	Youth involvement	Location	
Street credibility	Technology	Funding of workshop for traditional arts and crafts	
Culture night	Permanent space and security of tenure	Partner with other arts societies	
Nine arts and crafts shows			
Brilliant artists			
Dedicated space and good location – geographically			
Good media relationships			



Tribal journeys



Wild Women of the Woods – Spirit Festival



Weaving workshop



Grass weaving

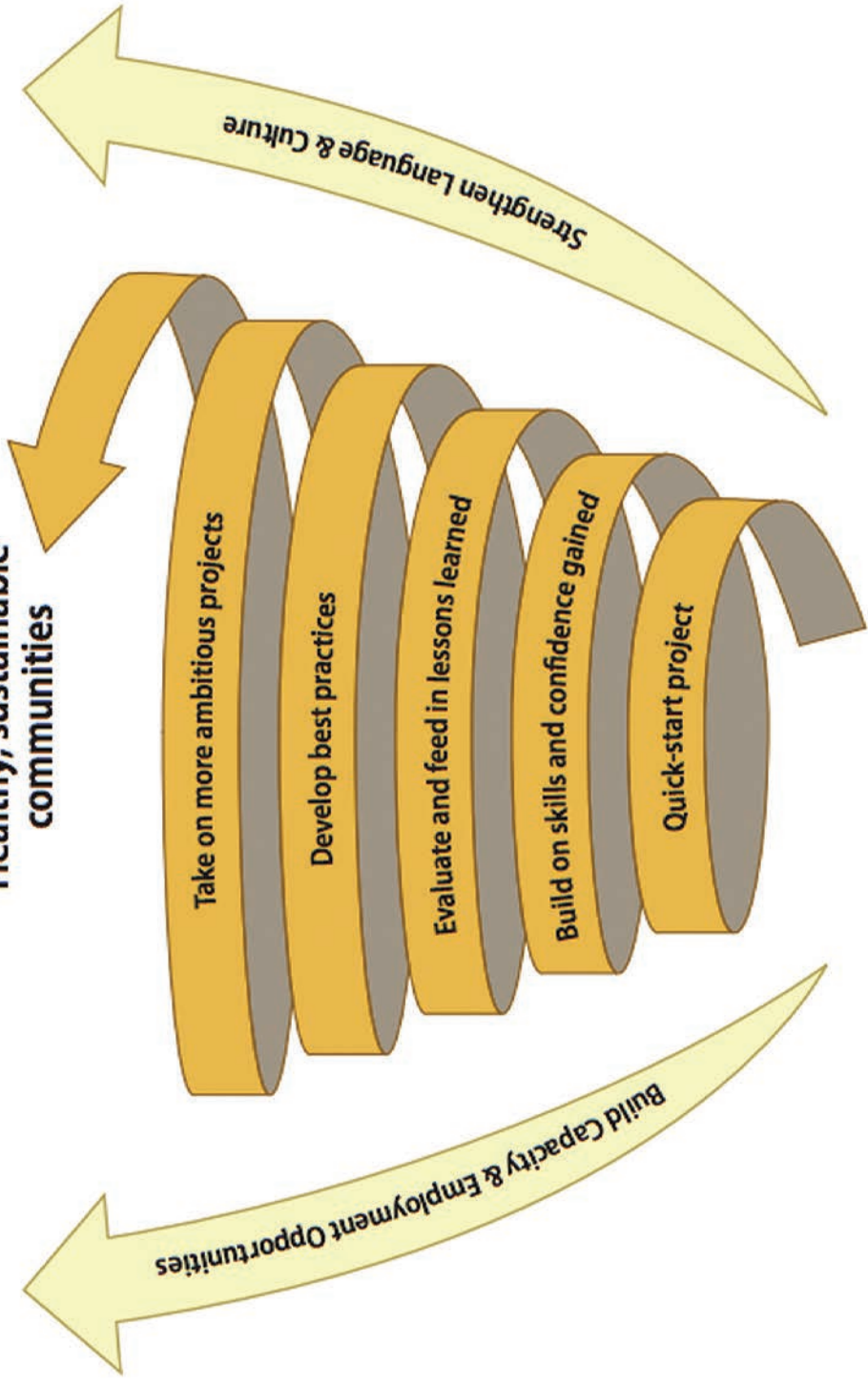
Building Communities Through Implementation

How do community leaders, facilitators and development workers ensure that communities go from strength to strength and actually thrive?


Many communities who have been through this experience are very keen to support other First Nations to try the process and spiral upwards too.

Comprehensive Community Planning (CCP) process is a good tool to help communities to transform their visions into reality.

Healthy, sustainable communities



Implementation Spiral



The time for the lone wolf is over.
Gather yourselves!
Banish the word struggle from
your attitude and vocabulary.
All that we do now must be
done in a sacred manner and
in celebration.

**We are the ones
we have been waiting for.**

~ Hopi Elder

With thanks to the
T'Sou-ke Community

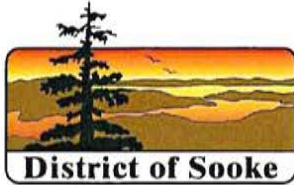
Special thanks to: Mark Gaudi for use of his artwork as background illustrations



T'SOU-KE FIRST NATION

T'SOU-KE NATION | PO BOX 307, SOOKE, BC, V9Z 1G1 | 250-642-3957

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2205 Otter Point Road, Sooke, British Columbia, Canada V9Z 1J2

Phone: (250) 642-1634
email: info@sooke.ca

Fax: (250) 642-0541
website: www..sooke.ca

NOTICE OF CLIMATE CHANGE ACTION COMMITTEE (CCAC) 2019 MEETING SCHEDULE

These Committee meetings are to be held on the third Tuesday of the month at 5:30 p.m. held in the District of Sooke *Council Chamber* located at 2225 Otter Point Road, Sooke, BC.

CCAC Meeting @ 5:30 pm

Public Statutory Holiday

July 2019						
S	M	T	W	T	F	S
	1	2	3	4	5	6
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28	29	30	31			

August 2019						
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September 2019						
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October 2019						
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November 2019						
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December 2019						
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29	30	31				


 Carolyn Mushata
 Corporate Officer

From: [REDACTED]
Subject: Bigger air polluter than cars
Date: May 17, 2019 8:39:40 AM

Hello Mayor

Summertime and the air is about to become much more polluted.

According to.....

<https://sites.psu.edu/math033fa17/2017/10/10/american-lawn-care-emissions/>

Every weekend in the United States, fifty-four million Americans mow their lawns, which uses eight-hundred million gallons of gas per year [Springfels n.pag]. When broken down, that's about 15 million gallons of gasoline to cut our yards and businesses alone. The eight-hundred million gallons of gas used each weekend is accompanied by the seventeen million gallons of gasoline we spill just filling up our tanks of gas each year, this amount is more than the amount of oil that was spilled by the Exxon Valdez [Springfels n.pag].

According to.....

<https://www.scientificamerican.com/article/how-to-pick-a-lawnmower/>

According to the U.S. Environmental Protection Agency (EPA), traditional gas-powered lawn mowers are a public nuisance, to say the least. **Using one of them for an hour generates as many volatile organic compounds—dangerous airborne pollutants are known to exacerbate human respiratory and cardiovascular problems—as driving a typical car for 350 miles.** The EPA estimates that, with some 54 million Americans mowing their lawns on a weekly basis, gas lawn mower emissions account for as much as five percent of the nation's total air pollution. Beyond that, homeowners spill some 17 million gallons of gasoline every year just refueling their lawn mowers.

Further Information:

<https://www.epa.gov/sites/production/files/2015-09/documents/banks.pdf>

Regards,
Jean Siemens
[REDACTED]

--

"It is time to stop treating nature as a commodity that we own, and to acknowledge instead that nature is a community to which we belong." - David R.

American Lawn Care Emissions

Posted on [October 10, 2017](#) by [Kyle Nolan](#)

Kyle Nolan

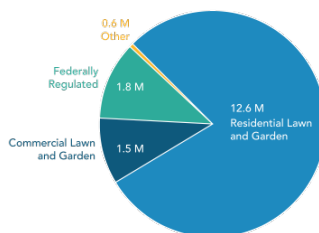
Russ deForest

Math 33, W&R1

9 October, 2017

American Lawn Care Emissions

In the simmering ninety-degree heat of summer through the months of May to August, my primary work title is laborer. More specifically, I weed-whack with a gas-powered Stihl FS-250 for 8 hours a day, five days a week. This doesn't seem like much, but according to data the emissions that I put out alone in a week is comparable to a road trip across the United States in a sedan. Factor this in with the five-other weed-whackers I work with and the fifty-four million people in the United States that uses their lawn care equipment in the U.S. and we quickly have a much larger problem on our hands. The problem is not merely that we want our lawns to look clean and cut, but that we are using gas-powered engines to do this work. With switching to a greater power such as electricity comes a great responsibility... and a greater time spent in the yard on the weekend finishing your work. When it boils down, you can have a powerful machine with bad emissions, or a less-powerful machine with no emissions at all. When you are done considering which you would rather have, and what your specific stance is on the environment, you have to weigh the scales... with the money you have to spend for your choice. Practicality in the electric and gas-powered engines is the next question, leaving your morals stranded in the thought process of which is easier to buy. The following will show what the cost of the switch from electric to gas-powered engines would be to an average American and what they would benefit from in practicality.

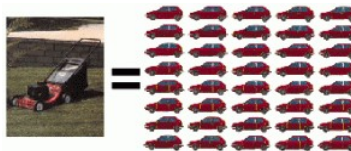


Every weekend in the United States, fifty-four million Americans mow their lawns, which uses eight-hundred million gallons of gas per year [Springfels n.pag]. When broken down, that's about 15 million gallons of gasoline to cut our yards and businesses alone. The eight-hundred million gallons of gas used each weekend is accompanied by the seventeen million gallons of gasoline we spill just filling up our tanks of gas each year, this amount is more than the amount of oil that was spilled by the Exxon Valdez [Springfels n.pag].

Avoiding all of this mess could be an easier process than we would expect as Americans, but the real question asks if the pros outweigh the cons. Five percent of the nation's air pollution was accounted for by carbon monoxide, volatile organic compounds, and nitrogen oxides due to unregulated emissions from lawn care equipment [Springfels n.pag]. This changed in 1995, when the Environmental Protection Agency started regulating the emissions coming from these lawn care machines like lawn-mowers and weed-whackers. Now as a nation, we are

under the EPA's "phase 3," which has successfully cut these volatile compounds down by seventy percent than what they used to be [Springfels n.pag].

Although the regulations put in place and the impact it has had seems impressive, the Union of Concerned Scientists released a statistic, saying that when you run a gas-powered mower, you are creating an equal amount of pollution to driving eight sedans at 55 miles per hour for one hour [Springfels n.pag]. This is no longer a sustainable number that we can ignore, the switch to greener, and electric mowers are right on the horizon. The people of your neighborhoods around the nation have been pushing to ban the gas-powered mowers and leaf-blowers because they're typically found to be harmful to the environment and noisy to the neighborhood. A lot of this can be attributed to the characteristics of the two-stroke engine: which completes a cycle of combustion through two pistons, is very cheap, compact, and lightweight [Palmer n.pag].



According to Springfels, for every 500 gas-powered mowers eliminated, you take away 212 lbs. of hydrocarbons, 2 lbs. of nitrogen oxides, and about 1 ton (2,000 lbs.) of carbon dioxide [Springfels n.pag]. This, paired with the number of Americans mowing and maintaining their lawns each weekend, will yield the results of how much pollutant Americans wouldn't release into the atmosphere each year.

Hydrocarbons:

$$\frac{54 \text{ Million Americans}}{\text{Weekend}} \times \frac{500 \text{ gas mowers}}{500 \text{ Americans}} \times \frac{.424 \text{ lbs. Hydrocarbons}}{1 \text{ gas mower}} \times \frac{52 \text{ weeks}}{1 \text{ year}} = \frac{1.2 \times 10^9 \text{ lbs. hydrocarbons saved}}{\text{year}}$$

Nitrogen Oxides:

$$\frac{54 \text{ Million Americans}}{\text{Weekend}} \times \frac{500 \text{ gas mowers}}{500 \text{ Americans}} \times \frac{.004 \text{ lbs. Nitrogen Oxides}}{1 \text{ gas mower}} \times \frac{52 \text{ weeks}}{1 \text{ year}} = \frac{1.1 \times 10^7 \text{ lbs. Nitrogen Oxides saved}}{\text{year}}$$

Carbon Dioxides:

$$\frac{54 \text{ Million Americans}}{\text{Weekend}} \times \frac{500 \text{ gas mowers}}{500 \text{ Americans}} \times \frac{4 \text{ lbs. Carbon Dioxides}}{1 \text{ gas mower}} \times \frac{52 \text{ weeks}}{1 \text{ year}} = \frac{1.1 \times 10^{10} \text{ lbs. Carbon Dioxides saved}}{\text{year}}$$

As the calculations from the practicality show, we would save so much on emissions each year, but does that still outweigh the cost of getting all Americans to switch to the electric models? Top of the line electric mowers can cost you a pretty penny, with the "Ryobi R48110" costing \$2,500 and the "Cub Cadet RZT S Zero ZTR" costing roughly \$4,000 [Hope n.pag]. These mowers and weed-whackers are mostly attributed to the use of their Lithium-Ion batteries, which require extra electricity to charge and power [Hope n.pag]. In my experience working as a weed-whacker, the halt in progress to stop and charge batteries for an eight-hour day would be enough to just fire us and let the weeds overgrow. To charge each battery the cost is about \$5 per year in electricity, which doesn't seem like much but has a larger effect on the nation as a whole, and these batteries only last about 60 minutes on a charge [How to Pick n.pag].

$$\frac{\$5.00}{\text{Year}} \times 54 \text{ Million Americans} = \frac{\$270,000,000}{\text{Year}}$$

According to the article "How to Pick A Lawn Mower That's Easy on Man—And Nature," the ratio in cost between buying a gas-powered mower, and an electric-powered mower is 1.5, meaning the cost is 1 1/2 times more expensive for an electric mower with the same output and performance [How to Pick n.pag]:

\$1000 gas mower \times 1.5 (Constant ratio for gas-electric mower cost conversion) \times 54 Million Americans = \$81 Billio

Walking head-to-toe in coveralls, boots, hardhats, and not to mention fresh cut grass, it is hard to believe that your weed-whacker still put out more energy and emissions than you have; even if you have sweat through two layers of clothing and almost passed-out from heat exhaustion plus the direct exhaust from the engine itself. Though it may seem dramatized, there are many young Americans working for contractors, Americans walking house to house to make money, and many more Americans using their mowers for lawncare use each weekend; not only putting themselves in harm's way, but the whole planet as well. When it comes down to finding the appropriate piece of lawncare equipment, switching to electric-power as a collective in the United States would surely outweigh the cons of keeping the gas-guzzling mowers and weed-whackers used in today's world. The key points to consider in these findings would be cutting down on the emissions produced by a quarter of all Americans, the relative low cost it would be to switch to the electric, and how the performance isn't fully out-matched to the reign of gas-powered engines. Thank you for following throughout this piece of writing, hopefully it will guide your thoughts and actions as you progress through buying greener lawncare equipment, whether it be for the first time or for renewing and replacing old pieces of equipment.

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This entry was posted in [Write and Respond 1](#) and tagged [atmosphere](#), [Carbon Emissions](#), [Electric](#), [environment](#), [Gasoline](#). Bookmark the [permalink](#).

5 Responses to *American Lawn Care Emissions*



Joe Balawajder says:

October 19, 2017 at 6:44 pm

Hi Kyle!

As I read your Write and Respond 1 article, I immediately noticed your outstanding use of the MathJax application within the blog. To start, you listed the current problems with the emissions produced by lawn care and then you also provided a small pie-chart and this was a great way to back up what you stated. The topic of lawn care emissions is not a topic that we have discussed as a class, at least to my knowledge, but this was a great topic of choice in that it clearly involves the topic of sustainability. The lawn care emissions from lawn mowers, leaf blowers, weed whackers, etc. are negatively affecting our air, and you did a great job of describing these problems and also backing your information up using multiple graphs and again, the great usage of MathJax. You mentioned that 1/4 of Americans are guilty of using gas-powered machines, which I believe adds some perspective to your article. Mentioning that the switch to electric-powered devices would be a relatively low-cost switch is very important as many Americans would say that they simply do not want to spend money on a new lawn mower when theirs works perfectly fine. The fact of the matter is, it doesn't. Sure it cuts their grass, but the pollution that takes place during the action of mowing is the real problem at hand. I also like the fact that you listed proper alternatives to the gas-powered machines that pollute our environment's air. The switch to electric-powered machines would certainly outweigh the

cons of a gas-powered lawn mower/leaf blower/weed whacker etc.
Great job Kyle!

-Joe Balawajder



Jonathan Demi Ajayi says:

October 22, 2017 at 3:37 am

Hi It was a really insightful piece and I believe the question of switching from gas power to electric power appliances is asked not for just lawncare but for many other products such as cars, cookers etc. I think you did a good job analysing in detail all the aspects of your argument especially costs. Cost is an important factor and is usually what most people consider when this topic comes to mind. I think there are pros and cons for both gas and electric power. In my opinion I think gas powered appliances are more eco friendly than electric powered appliances because charging electric appliances will ultimately raise one's carbon footprint but there are other factors involved. I do like the way you laid out your arguments and equation and all your points helped strengthen your stance.



Madi Murphy says:

October 23, 2017 at 2:00 am

The topic of this post was unique and personal and that's made it great. Firstly, the topic of lawn work is mostly not acknowledged when thinking of ways to cut down on unnecessary waste. This is incredibly odd when you see just how much this matter accumulates. This seems like a big issue that should be addressed. The math was done in a way that made it easy to understand and it was nice that you went farther than just one source that would be saved with reductions. Plus the fact you used an issue that directly affects you, made it more passionate of a blog post and that's something that will make people relate to it more. Overall a great piece.



Dave VanLandingham says:

October 23, 2017 at 2:41 am

Kyle, I thought your blog post about American lawn care emissions was really interesting. I spent a summer working for a landscaping company and spent much of that summer working with a mow crew and doing line trimming/ weed whacking. Truthfully, the emissions from the mowers and weed whackers were not something I thought much about despite considering myself an environmentally conscious person, so when I read that the emissions emitted in one weeks worth of work are equivalent to those from a cross country road trip, I was pretty surprised. Your blog post did a good job of breaking down these large figures into understandable quantities which helped support your point. While I agree that currently electric weed whackers are not comparable to 2 stroke gas weed whackers, I do believe that electric weed whackers will be the way of the future. You addressed battery storage issues in your blog post, but battery storage and cost and the the two biggest obstacles standing in the way. Electric motors make more torque than gasoline motors and the power, quietness, efficiency of electric motors make them a great substitute to gasoline motors, however, until battery storage issues and price point issues are addressed, they will not be a viable option.



Dominique C Miller says:

October 23, 2017 at 9:29 pm

Hi Kyle,
Awesome post! I'd like to start by mentioning how clearly your calculations were presented and how easy it was for me to follow through your post. This topic was very unique and this post goes on to explain the significance of being more eco friendly by using gas and less electricity. I think the information provided in this post was useful and not only met the desired requirements but explained the importance of gas powered lawn mowers because you were so passionate about the topic being that it was a job you spent most of your summer doing. Overall great topic and the specification of a low cost switch was a good point to throw in because everyone can be eco friendly even at a low cost.



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SUSTAINABILITY

How to Pick A Lawn Mower That's Easy on Man--And Nature

What is currently available in lawn mowers that are easier on the environment, and run on more than human power?

Dear EarthTalk: What's available now in lawn mowers that are easier on the environment? My yard is too big for one of those "reel" mowers, and I'm no longer a spring chicken, so I have to buy something that runs on more than human power. What's out there?

-- Joel Klein, Albany, NY

According to the U.S. Environmental Protection Agency (EPA), traditional gas-powered lawn mowers are a public nuisance to say the least. Using one of them for an hour generates as many volatile organic compounds—dangerous airborne pollutants known to exacerbate human respiratory and cardiovascular problems—as driving a typical car for 350 miles. The EPA estimates that, with some 54 million Americans mowing their lawns on a weekly basis, gas lawn mower emissions account for as much as five percent of the nation's total air pollution. Beyond that, homeowners spill some 17 million gallons of gasoline every year just refueling their lawn mowers.

So what's a green-minded property owner to do about keeping the grass down? Go electric, of course!



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Electric mowers, which either plug into a wall outlet via a long cord or run on batteries charged up from the grid, create no exhaust emissions and run much cleaner than their gas-powered counterparts. They also need less maintenance, with no spark plugs or belts to worry about, and are easier to use, as they tend to be smaller and come with push-button starters. The icing on the cake might be the fact that electric mowers are cheaper to run, using about as much electricity as an ordinary toaster. Most electric mower owners spend about \$5 a year on electricity to keep their grass trimmed just right. The non-profit Electric Power Research Institute reports that replacing half of the 1.3 million or so gas mowers in the U.S. with electric models would save the equivalent amount of emissions of taking two million cars off the road.

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30-60 minutes on a charge, depending on battery size and type, though that's plenty sufficient for the average lawn (just remember to re-charge it in time for the next mow).

And, of course, just because electric mowers don't consume fossil fuels or spew emissions directly doesn't mean they are totally green-friendly. Most people derive their household electricity from coal-fired power plants, the dirtiest of all energy sources. Of course, running an electric mower on electricity generated from clean and renewable sources (solar, wind or hydro power) would be the greenest of all possibilities, and those days may be upon us soon.

For those ready to take the electric mower plunge, the Greener Choices website, a project of *Consumer Reports*, gives high marks to Black & Decker's corded (\$230) and cordless (\$400) models for their efficiency, reliability and ease-of-use. Corded models from Worx and Homelite (both around \$200) also fared well, along with cordless offerings from Craftsman, Homelite, Remington and Neuton (\$300-450).

CONTACTS: Black & Decker, www.blackanddecker.com; Remington, www.remingtonpowertools.com; Homelite, www.homelite.com; Worx, www.worxpowertools.com; Neuton, www.neutonpower.com; Greener Choices, www.greenerchoices.org.



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National Emissions from Lawn and Garden Equipment

Jamie L Banks, PhD, MS*

Quiet Communities, Inc., PO Box 533, Lincoln, MA 01773

Robert McConnell, Environmental Engineer

US Environmental Protection Agency, Region 1, 5 Post Office Square, Boston, MA 02109

Abstract

Background: The contribution of gasoline-powered lawn and garden equipment (GLGE) to air pollutant emissions in the United States has not been extensively studied. **Goal:** Our goal is to provide annual US and state-level emissions estimates of volatile organic compounds (VOC): criteria pollutants (carbon monoxide [CO], nitrogen oxides [NO_x], particulate matter [PM] <10 microns, including PM < 2.5 microns [PM₁₀, PM_{2.5}]; and carbon dioxide (CO₂) from GLGE, with a focus on 2-stroke engines. **Methods:** Pollutant emissions data were extracted from the Environmental Protection Agency's (EPA) 2011 and 2018 modeling platform (version 6), for GLGE (Source Code Classifications 2260004021–2265004071), and equipment population data were obtained from the EPA's nonroad model. Data were sorted by equipment type and characteristics. Aggregate and equipment-specific emissions were calculated and compared with emissions from all gasoline-fueled nonroad equipment. Results are presented as descriptive statistics. **Results:** In 2011, approximately 26.7 million tons of pollutants were emitted by GLGE (VOC=461,800; CO=5,793,200; NO_x=68,500, PM₁₀=20,700; CO₂=20,382,400), accounting for 24%–45% of all nonroad gasoline emissions. Gasoline-powered landscape maintenance equipment (GLME; leaf blowers/vacuums, and trimmers, edgers, brush cutters) accounted for 43% of VOCs and around 50% of fine PM. Two-stroke engines were responsible for the vast majority of fine PM from GLME. State data (California, New York, Texas, Illinois, and Florida), 2018 projections, and additional comparisons are presented. Methodological issues are discussed. **Conclusions:** GLGE accounts for a major portion of US nonroad gasoline emissions. Two-stroke engines are an important source of VOCs and criteria pollutants.

*Corresponding Author: jamie@quietcommunities.org

INTRODUCTION

Gasoline-powered lawn and garden equipment (GLGE) ranging from string trimmers to stump grinders and tractors is a source of high levels of localized emissions that includes hazardous air pollutants, criteria pollutants, and carbon dioxide (CO₂).¹⁻⁴ Workers using commercial equipment are exposed when they are close to the emitting sources several hours each day, several days a week in seasons of use. Other members of the public, including children, may also be exposed to high levels of emissions from commercial landscape maintenance equipment (GLME) such as leaf blowers, trimmers, and mowers, used routinely around residential neighborhoods, schools, parks, and other public spaces. The commercial landscape maintenance industry has experienced strong growth over the last 15 years and depends largely on gasoline-powered equipment for most tasks once performed manually. These factors are raising concerns about the health impacts of GLGE emissions on workers and the public.

Extensive evidence exists on the adverse health effects of exhaust emissions and other fine particulates which include cardiovascular disease, stroke, respiratory disease, cancer, neurological conditions, premature death, and effects on prenatal development.⁵⁻¹³ Short term and long term exposures are implicated. However, GLGE as a source of these emissions has received little attention. Understanding the characteristics of GLGE and GLME emissions can help estimate potential health impacts of these close-to-the-source emissions.

The goal of this study was to characterize annual emissions from GLGE at the national level and in selected states and to estimate the contribution of GLME to those emissions. Special attention is paid to 2-stroke GLME engines. The emissions contributions from the four of the five most populated states are derived from the NEI, and for California, from the emissions inventory of the California Air Resources Board (CARB).

METHODS

Study Design

The GLGE emissions analyzed are total volatile organic compounds (VOC) and individual VOCs (benzene, 1,3 butadiene, acetaldehyde, formaldehyde); criteria pollutants (carbon monoxide [CO], nitrogen oxides [NO_x], particulate matter [PM] <10 microns, including PM < 2.5 microns [PM₁₀, PM_{2.5}]); and carbon dioxide (CO₂). Equipment pollutant data were extracted from SCC summary reports from the EPA's 2011 and 2018 modeling platform (version 6), and equipment population data were obtained from the Nonroad model. GLGE included the equipment in **TABLE 1** and identified by Source Code Classifications 2260004021–2265004071. The GLME subset is defined as leaf blowers/vacuums; trimmers/edgers/brush cutters; and mowers. Groupings of equipment, eg, leaf blowers/vacuums, were predefined by the NEI.

“All Emissions” are defined as all emissions from stationary and mobile sources, excluding biogenic and naturally occurring emissions. “All Nonroad Emissions” are defined as all emissions from the equipment types accounted for within the Nonroad model; note that this does not include emissions from commercial marine, rail, and aircraft sources. “Gasoline Nonroad Emissions” are defined as emissions from gasoline fueled equipment accounted for within the Nonroad model. National emissions were analyzed by type of equipment and engine configuration as shown in **TABLE 1**. All results are presented as descriptive statistics.

Table 1. Categorization scheme for analysis of GLGE emissions

Type of Equipment	Engine Configuration
<i>GLME</i>	
Leaf Blowers/Vacuums	2 stroke, 4 stroke
Trimmers/Edgers/Cutters	2 stroke, 4 stroke
Mowers	4 stroke
<i>Other GLGE</i>	
Chain Saws	2 stroke, 4 stroke
Rotary Tillers	2 stroke, 4 stroke
Snowblowers	2 stroke, 4 stroke
Turf Equipment	2 stroke, 4 stroke
Chippers/stump grinders	4 stroke
Tractors	4 stroke
Shredders	4 stroke
Other	4 stroke

Analyses

All analyses except for the 2018 projections represent 2011 estimates.

Equipment Populations

The national populations of all types of GLGE were obtained from the Nonroad model. The contribution of each type to the whole population was determined.

Contributions of All Nonroad and GLGE Sources

All Nonroad Emissions were compared to All Emissions. GLGE emissions were then calculated and compared with All Nonroad Emissions and All Emissions.

Contribution of Landscape Maintenance Equipment to GLGE Emissions

GLME emissions and their contribution to GLGE and All Nonroad Emissions were analyzed. Additional analyses were conducted to examine the relative contributions of 2-stroke GLME engine emissions.

Projected Growth of GLGE Emissions: 2011–2018

GLGE emissions projected for 2018 were obtained from the EPA's 2018 modeling platform, version 6, and compared with 2011 emissions.

GLGE Emissions in the Five Largest States

State level emissions data from the five most populated states (US Census) – California, Florida, Illinois, New York, and Texas – were extracted and analyzed. Estimates of GLGE emissions for Florida, Illinois, New York, and Texas were based on 2011 data from the EPA's 2011 modeling platform, version 6. Estimates of GLGE emission for California were based on data from the CARB's OFFROAD2007 Model and estimated for 2012. No adjustments were made for potential differences in annual emissions between 2011 and 2012 California data. The program structure of the OFFROAD2007 Model provides a general overview of the methodology used to estimate emissions from off-road sources (http://www.arb.ca.gov/msei/offroad/pubs/offroad_overview.pdf).

Each state's contribution to national GLGE Emissions was calculated and compared with its contributions to the US landscape maintenance labor force and the US population. Labor force statistics were sourced from the Bureau of Labor Statistics, May 2013 reports (www.bls.oes) and population data from the 2011 US Census.

Nonroad Air Emissions Model

EPA developed a nonroad air emissions model in the 1990s to provide estimates of emissions from most types of nonroad equipment, including construction equipment, recreational marine vessels, and lawn and garden equipment (LGE). The model is referred to simply as the "Nonroad" model, and it has been updated a number of times since its creation. Documentation for the model exists as a number of technical reports available on EPA's website (<http://www.epa.gov/otaq/nonrdmdl.htm>). Total emissions are determined by summing the exhaust and evaporative emission components.^{14, 15} The preponderance of emissions from Nonroad equipment occurs as exhaust emissions due to the combustion of fuel. The methodologies for determining exhaust emissions are summarized below.

Exhaust Emissions from Nonroad Engines

The Nonroad model uses the following equation to calculate exhaust emissions from nonroad engines (ref: Median):

$$\text{Emissions} = (\text{Pop}) \times (\text{Power}) \times (\text{LF}) \times (\text{A}) \times (\text{EF})$$

Where Pop = Engine population

Power = Average Power (hp)

LF = Load factor (fraction of available power)

A = Activity (hrs/yr)

EF = Emission factor (g/hp-hr)

The derivation of the default model data for each factor from the above equation is discussed below.

a. Equipment populations and average power (horsepower)

The technical report titled "Nonroad Engine Population Estimates"¹⁶ indicates that equipment population data for most types of equipment were obtained from Power Systems Research, an independent marketing research firm, although in some instances other data source were used. Of interest for this analysis, for many LGE categories EPA used sales data obtained from equipment manufacturers during the development of its Phase 1 emission standards for small (less than 25 hp) gasoline fueled nonroad engines. This was done for the following LGE categories: lawn mowers, trimmers/edgers/brush cutters, leaf blowers/vacuums, and chainsaws. The report notes that an equipment population base year of either 1996 or 1998 was used for the LGE types.

Once estimates of equipment populations were derived, information obtained by the state of California was used to divide the equipment between the residential and commercial sectors. This step was needed because of the large difference in usage patterns between these two sectors. **TABLE 2** below contains an extract of data from Table 3 of the Nonroad Engine Population report mentioned above, and illustrates how the split between residential and commercial equipment was apportioned for a number of LGE types.

Table 2. Percentage split between residential and commercial equipment

SCC code	Application	Horsepower categories	Residential (% of equipment population)	Commercial (% of equipment population)
22xx004010 22xx004011	Lawn mowers	All	96.3	3.7
22xx004025 22xx004026	Trimmers/edgers/cutters	0-1 hp	100	0
		1-3 hp	85.3	14.7
		> 3 hp	0	100
22xx004020 22xx004021	Chainsaws	0-1 hp	100	0
		1-3 hp	97.0	3
		> 3 hp	0	100
22xx004030 22xx004031	Leaf blowers/vacuums	0-1 hp	100	0
		1-3 hp	92.5	7.5
		> 3 hp	0	100

i. Geographic allocation of residential LGE Populations (except snowblowers)

The Nonroad model uses US Census data on one and two unit housing to allocate national equipment populations to the county level. The population documentation report mentioned above notes that other variables are likely to also affect the distribution of LGE population, such as average yard size. However, no consistent, reliable data surrogates could be found to apportion the national level equipment populations based on these alternative factors, and so the model relies solely upon US Census data on one and two unit housing to allocate national LGE population data to the county level.

ii. Geographic allocation of commercial L&G Equipment Populations (except snowblowers)

The Nonroad model uses the number of employees in the landscaping services industry to disaggregate national level LGE population data to the county level. This was accomplished using data from the North American Industry Classification System (NAICS); specifically, for NAICS code 561730, landscaping services.

iii. Equipment population projections

The Nonroad model enables the user to obtain estimates of emissions for years other than the base year used for equipment populations. This is accomplished by the development of processes to handle the growth in equipment populations due to the purchase of new equipment as years pass, and adjustments made to account for the scrappage of old equipment. The reader is referred to the EPA technical reports “Nonroad Engine Growth Estimates,”¹⁷ and “Calculation of Age Distributions in the Nonroad Model – Growth and Scrappage”¹⁸ for further information on these topics. Both of these reports are available on the EPA website (<http://www.epa.gov/otaq/nonrdmdl.htm>).

b. Activity levels and load factors.

Equipment populations and horsepower levels alone are not sufficient for determining emissions from nonroad equipment; assumptions about frequency and patterns of use must also be made. The EPA report, “Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling”¹⁹ describes how the Nonroad model assigns default activity levels, in hours per year, and

load factors in performing its calculations. Load factors are needed to account for the fact that equipment is not typically used at full power 100% of the time; load factors reflect that and are presented in terms of average percent of full power for the equipment as it is used. The activity levels and load factors for small (< or = to 25 hp) spark-ignition engines for many LGE types was taken from data supplied to EPA during the comment period for the regulation of these engines. **TABLE 3** below contains an extract of the default activity data, in annual hours of equipment use, and load factor data, expressed as fraction of full power, taken from Table 6 of the above mentioned report.

Table 3. Example default activity levels and load factors for LGE

Equipment type	Use	Activity level (Annual hours)	Load factor (fraction of full power)
Lawn mowers	Residential	25	0.33
	Commercial	406	0.33
Trimmers/Edgers/Cutters	Residential	9	0.91
	Commercial	137	0.91
Leaf blowers\Vacuums	Residential	10	0.94
	Commercial	282	0.94
Chainsaws	Residential	13	0.70
	Commercial	303	0.70

c. Emission factors

EPA's documentation for the source of the emission factors used within the Nonroad model are contained in the following two reports: "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling: Compression-Ignition"²⁰ and "Exhaust Emission Factors for Nonroad Engine Modeling: Spark-Ignition."²¹ Information pertaining to LGE contained in the latter report is discussed below.

Emission factors for spark-ignition engines rated at less than 25 hp were segregated into 5 engine classes based on primary use of the engine (handheld vs. non-handheld), and engine size according to engine displacement. Beginning in 1997, engines designed for both handheld and non-handheld applications became subject to several phases of regulation geared towards reducing fuel consumption (expressed in terms of brake-specific fuel consumption [BSFC]) and producing fewer air emissions in the combustion process. **TABLE 4** below contains an extract of information from Table 1 of the Exhaust Emissions 2010 report, and shows the impact of EPA's regulation on one such class of engines: small, hand-held, gasoline fueled two-stroke engines.

Table 4: Impact of regulation on small*, hand-held, gasoline fueled two stroke engines

Engine Tech Type	HC (g/hp-hr)	CO (g/hp-hr)	NOx (g/hp-hr)	PM (g/hp-hr)	BSFC (lb/hp-hr)
Baseline	261.00	718.87	0.97	7.7	1.365
Phase 1	219.99	480.31	0.78	7.7	1.184
Phase 2 (with catalyst)	26.87	141.69	1.49	7.7	0.822

BSFC: Brake-specific fuel consumption; CO: carbon monoxide; HC: hydrocarbon; NOx: nitrogen oxides; PM: particulate matter

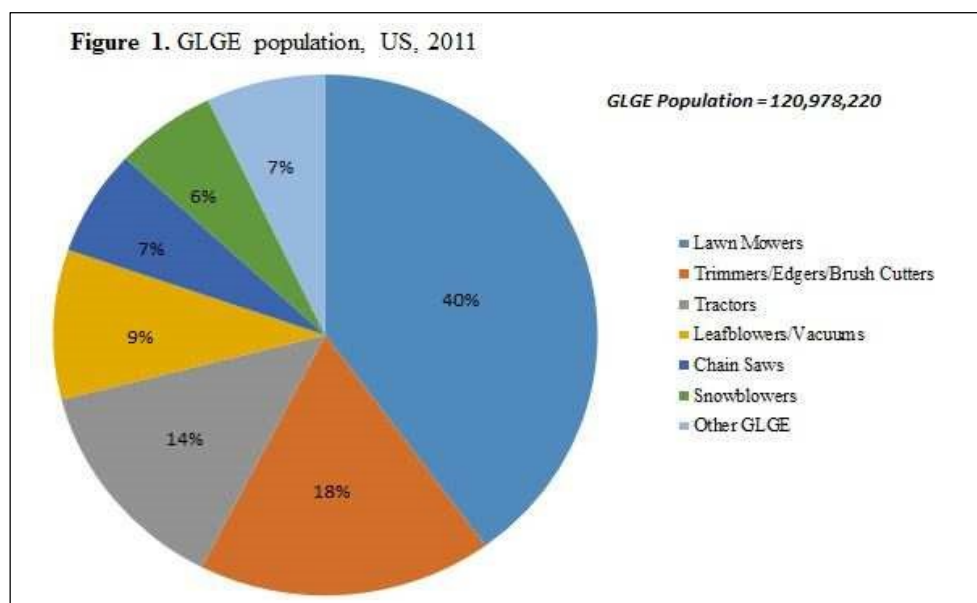
* These emission factors are for engines sized from 0 to 1 hp.

Other factors also influence the combustion related exhaust emissions from nonroad engines, such as fuel type, ambient temperature, and deterioration of equipment with age and use. The reader is referred to the EPA web-site (<http://www.epa.gov/otaq/nonrdmdl.htm>) for additional information on these topics.

RESULTS

Equipment Populations

Approximately 121 million pieces of GLGE are estimated to be in use in the United States (**FIGURE 1**). GLME accounts for two-thirds of all GLGE of which lawn mowers are the most numerous, followed by trimmers/edgers/ brush cutters, and then leaf blowers/vacuums. Projections from 2011 indicate a 13% increase across all equipment types after the combined effect of new equipment purchases and scrappage of old equipment are evaluated, resulting in an estimated 136 million pieces of GLGE in use by 2018.



Contribution of Nonroad Emissions to All Emissions

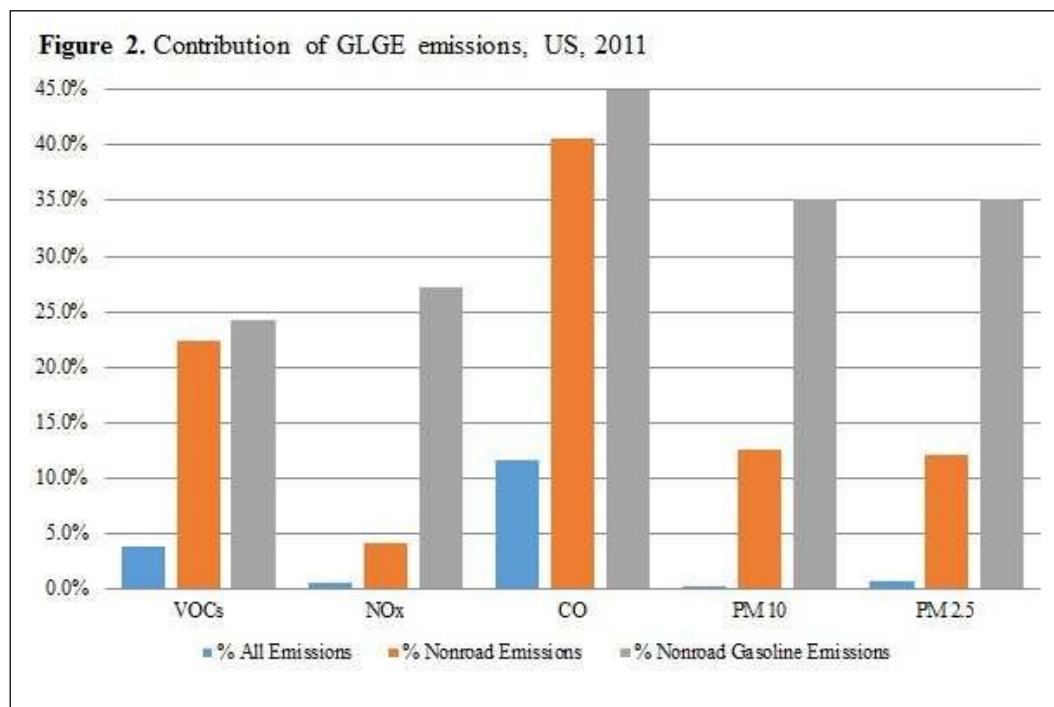
All Nonroad sources account for approximately 242 million tons of pollutants each year, accounting for 17% of all VOC emissions, 12% of NOx emissions, 29% of CO emissions, 4% of CO2 emissions, 2% of PM10 emissions, and 5% of PM2.5 emissions.

All Nonroad Emissions account for a substantial percentage of All Emissions of benzene (25%), 1,3 butadiene (22%), CO (29%), PM10 (2%), and PM2.5 (5%). Because of the relatively small contribution of GLGE CO2 to All Emissions (0.3%), it is not further considered in this report.

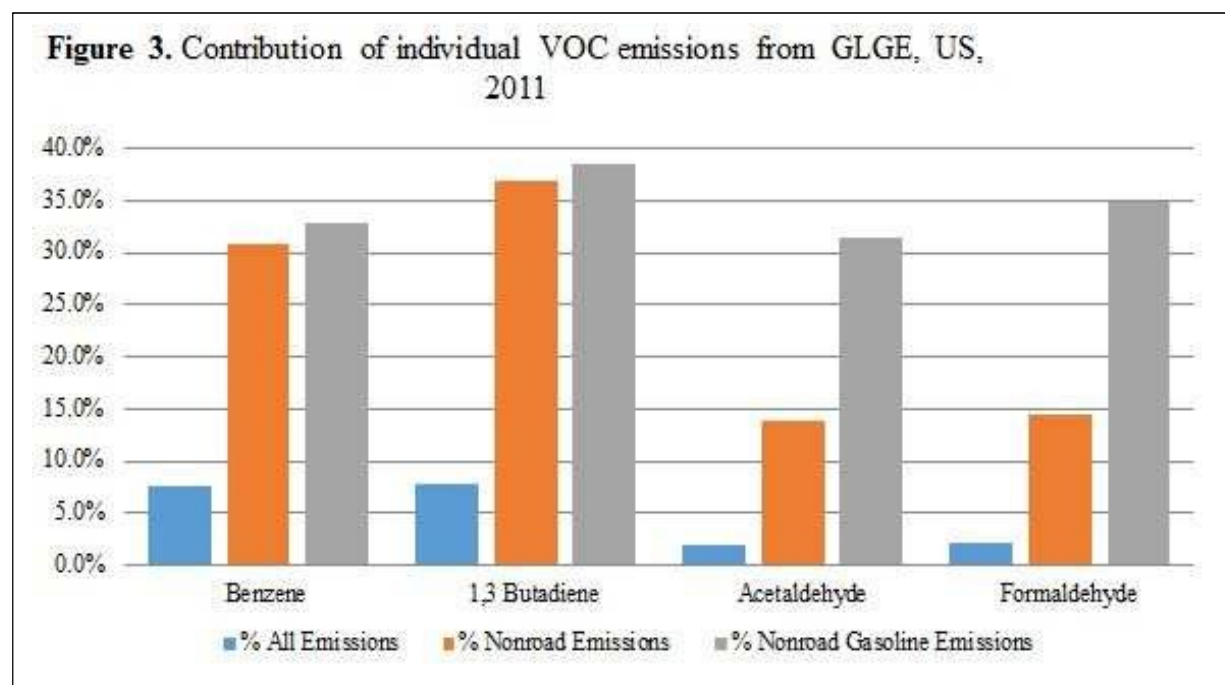
Contribution of GLGE to All Emissions and Nonroad Emissions

GLGE emitted approximately 6.3 million tons of VOCs (461,800) and criteria pollutants (CO=5,793,200; NOx=68,500, PM10=20,700 [19,000 of which is PM2.5]), and 20.4 million tons of CO2 in 2011. GLGE represented nearly 4% of All Emissions of VOCs and 12% of All Emissions of CO

(FIGURE 2). GLGE fine PM emissions constitute a fraction of a percent of All Emissions of fine PM, but is a major Nonroad source, accounting for nearly 13% of All Nonroad Emissions of fine PM and more than one-third of Gasoline Nonroad Emissions of fine PM.

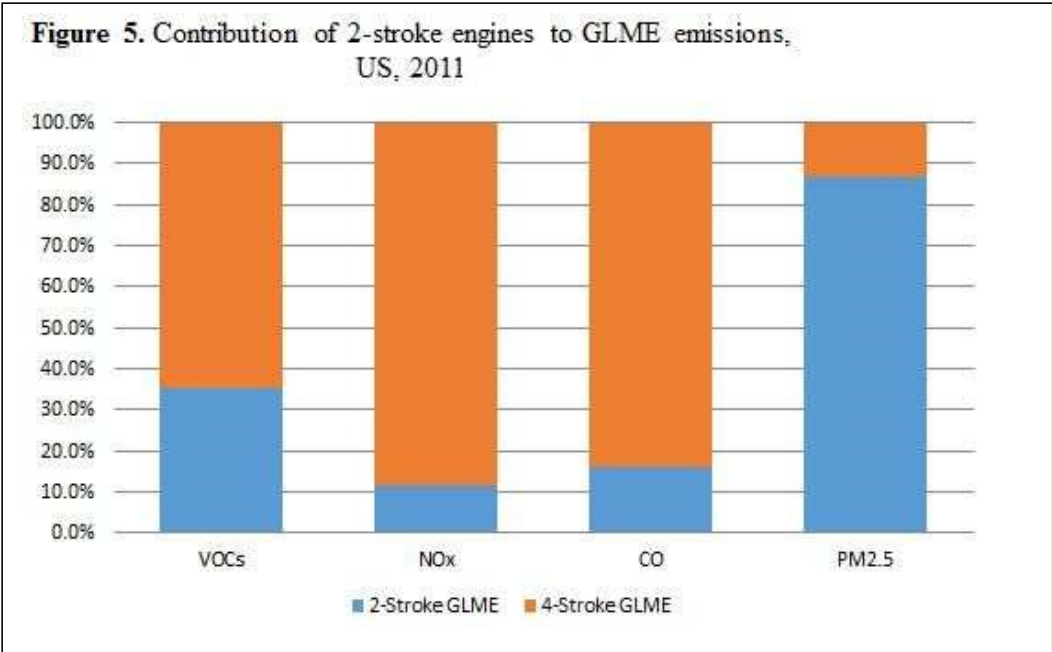
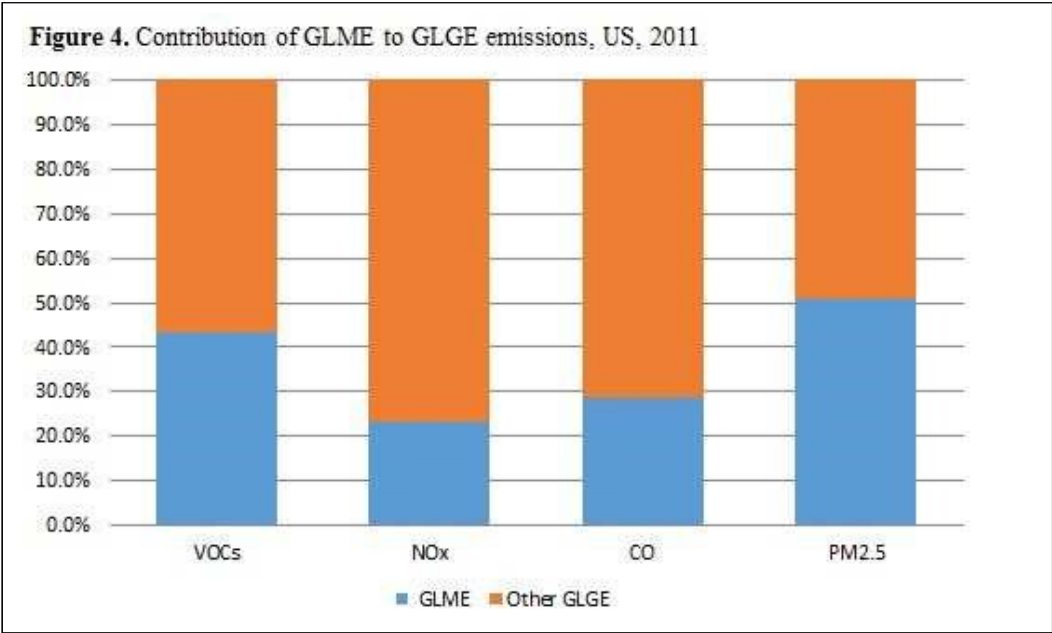


Analysis of individual VOC emissions shows that GLGE contributes nearly 8% of All Emissions of both benzene and 1,3 butadiene (**FIGURE 3**). Within All Nonroad Emissions and Gasoline Nonroad Emissions, GLGE accounts for nearly one-third or more of benzene and 1,3 butadiene emissions, and also becomes a major source of aldehyde and formaldehyde emissions from Gasoline Nonroad sources.



Contribution of GLME to GLGE Emissions

Compared with the GLGE contributions of Nonroad Gasoline Emissions shown in **FIGURE 2**, contributions of VOCs and fine PM emissions from GLME are disproportionately high, and for NOx and CO, are disproportionately low (**FIGURE 4**). Small GLME engines account for more than 40% of VOC emissions and one-half of PM10 and PM2.5 emissions from GLGE. Close to 90% of fine PM emissions from GLME come from 2-stroke engines (**FIGURE 5**).



Projected Growth of GLGE Emissions: 2011–2018

By 2018, the annual tonnage of ozone precursors, VOCs and NO_x, emitted by GLGE is projected to decrease substantially from 2011, as more of the in-use fleet becomes represented by equipment built to meet EPA nonroad emission standards. CO emissions remain comparable to 2011 levels, while CO₂ and fine PM emissions are projected to increase modestly.

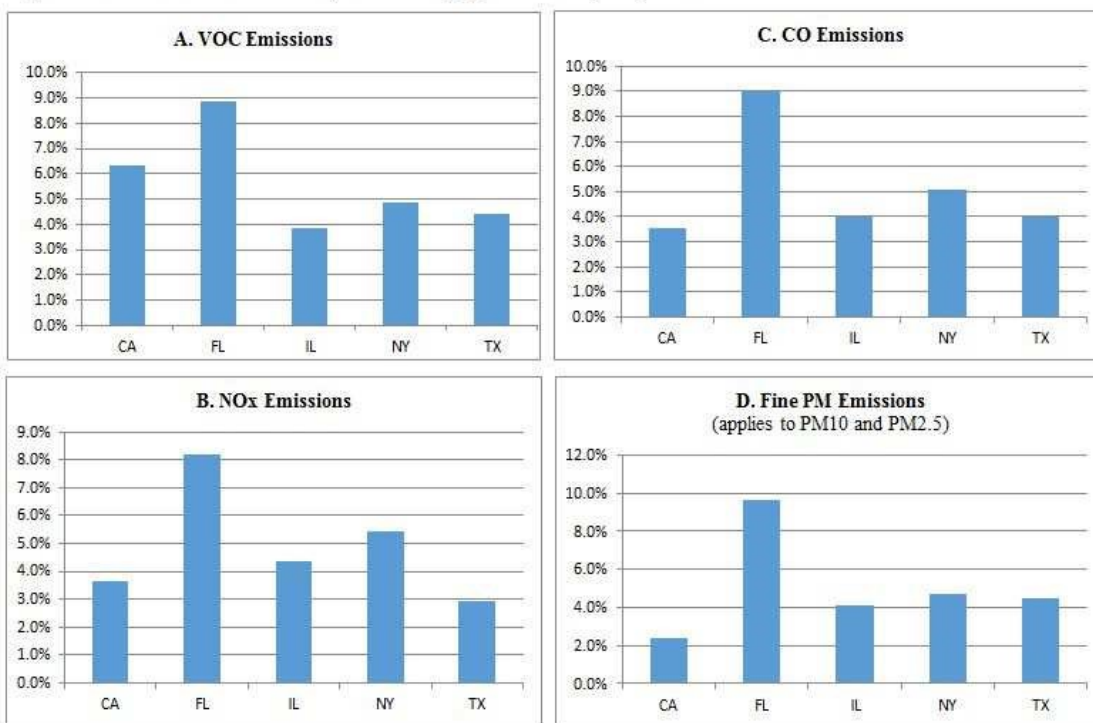
Table 5: Estimated Change in GLGE Emissions, 2018 vs 2011

Emissions	% Change
VOCs	-20.9%
NO _x	-31.1%
CO	-4.9%
CO ₂	12.3%
PM 10	8.2%
PM 2.5	8.4%

GLGE Emissions in the Five Most Populated States

When considered together, GLGE emissions from California, Florida, Illinois, New York and Texas constitute approximately one-quarter of national GLGE emissions.

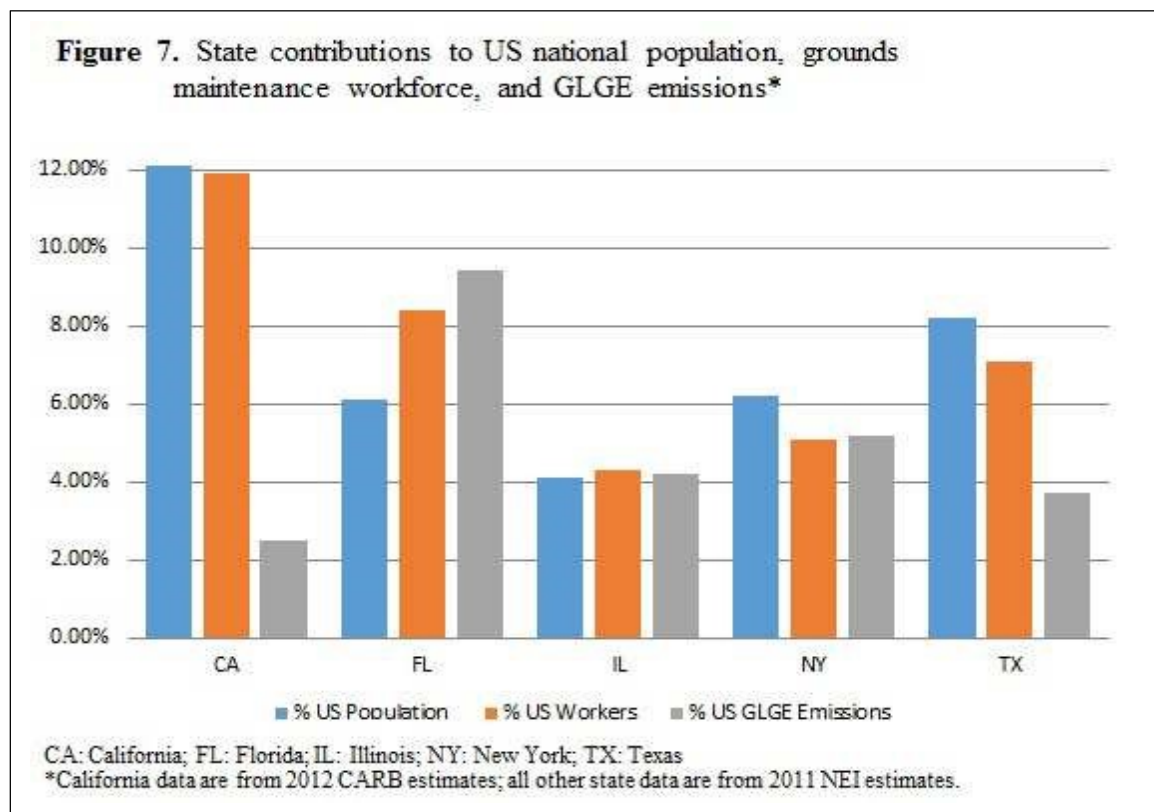
Figure 6. Emissions contributed by the 5 most populated states, US, 2011*



CA: California; FL: Florida; IL: Illinois; NY: New York; TX: Texas
*California data are from 2012.

Florida's GLGE emissions were 1.4 to 2.1-times higher compared with emissions in states having the next highest level of emissions in each GLGE pollutant category, and 2.2 to 4.4-times higher compared with emissions in states having the lowest level of emissions in each GLGE pollutant category (**FIGURE 6**).

For Florida, Illinois, and New York, state-specific contributions of GLGE emissions compared to the national total were relatively consistent with their contributions to the national population and the national grounds maintenance workforce. For California, its GLGE emission contribution was one-fifth that of its contribution to the national population and to the national grounds maintenance workforce. For Texas, its GLGE emission contribution was 40%–50% that of its contribution to the national population and to the national grounds maintenance workforce (**FIGURE 7**).



DISCUSSION

The main findings of this study are: 1) GLGE is a prevalent source of toxic and carcinogenic emissions; 2) GLGE contributes substantially to nonroad emissions of benzene, 1,3 butadiene, formaldehyde, CO, and fine PM; 3) GLME accounts for a disproportionately large share of VOC and fine PM emissions; 4) 2-stroke engines account for most fine PM emissions from GLME; 5) VOCs and NOx are projected to decrease substantially by 2018; CO emissions remain comparable to 2011 levels; and CO2 and fine PM emissions are projected to increase modestly; and 6) the GLGE emissions contributions from the the largest states are not always consistent with contributions to national population and national grounds maintenance workforce.

The large volume of emissions from GLGE found in this study is consistent with findings previously reported by the EPA¹ and from other studies.²⁻⁴ The very substantial contribution of VOC, in particular benzene and 1,3 butadiene, deserves attention especially because of their localized nature.

While VOC emissions are expected decrease 21% on average by 2018, the rates of equipment replacement on which those projections are based are only approximated.

Adverse health effects from the GLGE emissions are well known. Benzene, 1,3 butadiene, and formaldehyde are listed among the four top ranking cancer-causing compounds.²² They cause lymphomas, leukemias, and other types of cancer (International Agency for Research on Cancer, World Health Organization).^{23, 24} Ground level ozone (formed by VOCs and NO_x in the presence of sunlight) and fine PM cause or contribute to early death, heart attack, stroke, congestive heart failure, asthma, chronic obstructive pulmonary disease, and cancer.⁵⁻¹¹ Growing evidence suggests these pollutants also contribute to developmental and neurological disorders, including autism.^{7-9, 12, 13} The mounting evidence on the dangers of short term exposure are especially concerning.^{7, 9, 11}

The high levels of VOCs and fine PM from GLME are health risks for workers and other members of the public close to the emitting source. Although no studies of grounds maintenance workers were found, studies of gas station workers have shown that regular exposure to gasoline vapors can produce hematological and immunological abnormalities and elevate the risk of cancer.²⁵⁻²⁷ In addition, children, seniors, and persons with chronic illnesses are especially vulnerable to the negative health impacts of GLME emissions.²⁸ Routine use of GLME in the vicinity of residential neighborhoods, schools, parks, and other public spaces may be exposing the public to unnecessary and preventable health risks. New equipment standards do not affect fine PM emissions; in fact, those emissions are expected to increase.

School buses represent another example of a close-to-emitting source in which children are subjected to increased exposure from diesel exhaust.²⁹ Tests of school buses found that diesel exhaust entering through the front door of the bus results in elevated levels of PM over time. When queuing, PM built up rapidly in the bus cabin when the front doors were open.

The variation in emissions levels observed among the five most populated states should be explored further. The reasons for the high emissions contribution from Florida and relatively low emissions contributions from Texas and California are not clear. Differences between CARB data and NEI data may account for some of the difference between California and other states. For example, the NEI baseline equipment population data are older compared with those of CARB. Other factors that may be involved include but are not limited to emissions estimation procedure, geographic and climate factors, regulations and their effectiveness, and efforts to promote cleaner alternatives.

This study has several limitations. Not all potentially harmful emissions were characterized; for example, polycyclic aromatic hydrocarbons. Other limitations concern the source data. Although the NEI is a comprehensive source of GLGE emissions data, the accuracy of the reported data is uncertain. Baseline equipment population data for the Nonroad model is 15–20 years old and does not account for growth of the commercial industry. This older population data supplies emission estimates to NEI, which in turn is used to create EPA's 2011 and 2018 modeling platforms. Although the residential and commercial CARB inventories and activity data are newer, they depend largely upon telephone survey data.^{30, 31} Methodological weaknesses with the commercial survey data are discussed in the survey report.³¹ For both data sources, the rates of replacement of older equipment by newer, cleaner equipment that meets the newer Phase 3 standards³² can only be approximated.

CONCLUSIONS

GLGE is an important source of toxic and carcinogenic exhaust and fine particulate matter. Improved reporting and monitoring of localized GLGE emissions should be implemented. Medical and scientific organizations should increase public awareness of GLGE and GLME and identify GLGE as an important local source of dangerous air pollutants. Communities and environmental, public health, and other government agencies should create policies and programs to protect the public from GLGE air pollutants and promote non-polluting alternatives.

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Date	Item #	Resolution #	Resolution	Recommendation from CCAC
May 13, 2019	6.1	2019-206	THAT Council appoint Councillor Tony St-Pierre as the Chair to the District's Climate Change Action Committee. CARRIED UNANIMOUSLY.	
May 13, 2019	7.3	2019-209	THAT Council endorse the Sooke Compassionate Action Plan and support the recognition of Sooke as a Compassionate Community. AND Further that the Compassionate Action Plan be forwarded to the Affordable Housing Committee and Climate Action Committee, for information. CARRIED (Annex)	
May 13, 2019	7.5	2019-211	THAT Council refer the topic of Float Home communities to the Affordable Housing Committee and Climate Action Committee for further discussion. CARRIED UNANIMOUSLY	
May 13, 2019	14 (page 108 of agenda package)	2019-236	THAT the correspondence received April 29, 2019 from Mayor Lisa Helps regarding Climate Action through Public Transit Ridership be forwarded to the Climate Change Action Committee. CARRIED	
May 13, 2019	16.1	2019-238	MOVED by Councillor Al Beddows, seconded by Councillor Jeff Bateman: THAT Council direct the Climate Action Committee to research and report back on options for municipal community garbage collection. CARRIED UNANIMOUSLY	

Introduction - Sooke Compassionate Action Plan

Compassion is concern for the suffering of others. It requires empathy and understanding rather than pity and judgement. Compassion is often the motivation for acts of caring and kindness.

The Charter for Compassion invites communities of all sizes to encourage and reinforce compassionate action in practical, specific ways to address troubling issues. These issues are often deep-rooted and persistent. Much good work is already underway to reduce the resultant harm to affected individuals and households. The development of a Compassionate Action Plan (CAP) by a diverse and inclusive coalition of caring individuals and groups in our community is intended to help Sooke to become a more fully Compassionate Community.

A Compassionate Action Plan Workshop was held at the Sooke Baptist Church on Saturday, October 27th. It was well-attended with close to 50 participants from 29 community groups and service agencies (listed in Appendix 1). The afternoon began with short context-setting presentations by speakers from the Sooke Shelter Society, the Sooke Food Bank, the Sooke detachment of the RCMP and the BC Ministry of Mental Health and Addictions.

A broad range of issues were raised in six breakout groups. Reports to a plenary session followed. A review of the findings and recommendations by these many Sooke voices, not surprisingly, revealed many shared concerns and underlying linkages between issues. Communities are evolving, organic entities, like a forest with its trees connected in the web of life.

Five areas of focus for short (within the next 12 months) and longer term (one to five years) compassionate actions are proposed in this draft Sooke CAP:

- Homelessness
- Affordability Crisis (Housing, Food, Childcare)
- Social Isolation (Seniors, Disabled, Youth)
- Inadequate Health Services (Access, Mental Health, Whole Person Care)
- Communication/Awareness/Collaboration

Specific compassionate actions are indicated for each area of focus, based on the reports of the breakout groups. Comments and suggestions on a draft Sooke CAP,

distributed in December, were used to complete this initial plan. An implementation strategy will be developed at a second workshop which will be held on March 2nd.

The Sooke CAP, if supported by the participants at the upcoming workshop participants and by Sooke Council, will be submitted to Charter for Compassion International. It is hoped that this submission will occur in the Spring.

Recognition of Sooke as a Compassionate Community by Charter for Compassion International would not involve the issue of a certificate or a seal of approval for the Cap. Our community will join a worldwide humanitarian movement of citizens in over 400 cities, town, villages and neighbourhoods that are striving for a kinder, better planet.

Five Proposed Areas of Focus for the Sooke Compassionate Action Plan

The five areas of focus for the Sooke CAP are proposed below. Their order of presentation does not indicate their relative importance.

Several groups and organizations are already working independently and together in each of these areas of focus. Compassionate actions are being taken but it was agreed at the workshop that much remains to be done. The March 2nd workshop may identify further short- and longer-term actions, as well as the human and material resources necessary to implement these actions.

1. Homelessness

Estimates of the number of homeless people in Sooke range from about 35 to more than 100. They are a nearly invisible part of our community. They spend much of each day trying to satisfy basic needs for food, safe shelter and hygiene. Social contact with the larger community is often avoided by these individuals, just as more fortunate residents tend to avoid contact with them. Many homeless people contend with mental illnesses aggravated by addictions to alcohol and street drugs. These challenges become more difficult during our winter months, especially during periods of extreme weather. Some working poor are also

homeless due to the lack of affordable housing in Sooke. They may inhabit vehicles and moored boats.

The stigmas associated with homelessness, addiction and mental illness can be reduced through greater awareness of the struggles involved and empathy towards the afflicted.

Short-Term Compassionate Actions:

1. Designation of safe areas for the homeless with storage lockers, coolers, trash receptacles and access to showers and laundry facilities. Provision of temporary shelters such as tents. Access to a commercial kitchen with food safe certification.
2. Establish an extreme weather shelter for the homeless (cold temperatures, heavy rains). It would eventually evolve into a seasonal shelter for the October to April period.
3. Continue and broaden the ongoing dialogue and joint activities by individuals, groups and agencies to relieve the plight of the homeless residents in Sooke. Examples are the ongoing efforts by the Sooke Shelter Society, Sooke Homeless Coalition and Sooke Crisis and Referral Society.

Longer-Term Compassionate Action:

1. Establish a seasonal shelter that will provide for homeless residents -from October through April.
2. Support the purchase of modular housing for homeless Sooke residents (170 units recently purchased for Nanaimo).

2. Affordability Crisis

Sooke is a fast-growing community with an increasing range of goods and services amenities for residents with the required income. It is becoming unaffordable for many households who are struggling to meet the costs of housing, food, childcare and transportation.

The historical view of Sooke as a cheap place to live within Greater Victoria no longer holds. One indicator is the increasing number of individuals and families who use the Sooke Food Bank on a regular basis. Another indicator is the cost of

driving to and from Victoria with gasoline prices increasing year over year. Limited bus services within Sooke and between Sooke and Langford/Victoria discourage a shift from private to public transportation.

Canada's Official Poverty Line, across all regions of the country, was \$37,542 for a family with two adults and two children in 2015. It is based on the cost of housing, transportation, nutritious food, clothing and other household requirements.

Perhaps the greatest affordability concern is the cost of housing in Sooke for both potential owners and renters. Local figures are not available but the Canada Mortgage and Housing Corporation (CMHC) reported in January 2017 that the Victoria Region was the least affordable small city in Canada for single family houses: the median price was over eight times the median household income. Rent costs in Greater Victoria increased by 8% between 2015 and 2016. Current low vacancy rates only worsen the situation.

The current District of Sooke Official Community Plan (OCP) defines affordable housing as housing that sells or rents at a rate that is affordable (no more than 30% of annual income) to households with the lower half of incomes in Sooke.

Attainable housing refers to the gap in housing and services for people who do qualify for provincially or federally defined affordable housing and yet do not make enough to purchase a home at the market rate.

The Capital Regional District (CRD) in its draft housing affordability study (April 2018) estimates that there is a shortfall of 6,200 affordable rental units in Greater Victoria.

Short-Term Compassionate Actions

1. Broaden the mandate of the District of Sooke's Affordable Housing Committee to specifically include affordable and attainable housing as defined in the OCP. Consideration would be given to renaming it "the Housing Committee" to reflect this broader mandate.
2. Request the District of Sooke to hold meetings with developers, real estate agents, concerned citizens and other stakeholders to develop policies to increase the availability of affordable and attainable housing Sooke.

3. Request the District of Sooke to investigate non-market options to increase the stock of affordable and attainable housing in our community. These options might include the use of District-owned lots with other designations, such as inactive parkland, for the construction of buildings which would be sold or rented at an affordable non-market cost plus a fixed percentage.

Longer-Term Compassionate Actions

1. Lobby both the CRD and the provincial government for increased funding for both affordable housing and attainable housing (alternative structures such as tiny houses) for low to moderate income Sooke residents.
2. Work with Sooke Council and developers to make rental suites in private houses more suitable for families, e.g. better sound-proofing.
3. Lobby BC Transit for better coverage and increased frequency in bus services both within Sooke and between Sooke and Langford/Victoria. BC Transit's Local Area Plan Consultations are now underway. (Reference: <https://bctransit.com/victoria/transit-future/local-area-transit-plans/project-updates/sooke>).
4. Lobby both the CRD and the provincial government for building code exceptions that allow alternative housing structures, such as trailers, recreational vehicles and tiny houses, for marginal-income (homeless, unemployable) and moderate-income Sooke residents.

3. Social Isolation

Some Sooke residents live marginal lives. There are many causes, including mental illnesses, psychological disorders and dementia. Others suffer from chronic physical handicaps and drug/alcohol addictions. Social interaction with the broader population is often limited by communication challenges, behavioural issues and social stigmas/prejudices.

Social isolation is an issue also faced by single people, youth and the elderly. Generally speaking, there is an increasing disconnection in our communities and less opportunities for social interaction.

Short-Term Compassionate Actions

1. Expand mental health services in Sooke, including addiction treatment and counselling.
2. Establish neighbourhood programs for regular checks on persons with psychological disorders and dementia. An existing example is the Keep in Touch (KIT) program which is run by the RCMP.

Longer-Term Compassionate Action

1. Increase the number of rooms for persons with dementia at Ayre Manor.
2. Increase the number of easily accessible public spaces in Sooke where people can feel secure and have opportunities for interaction. Such a space might be provided as part of the development of Lot A on Wadams Way in Sooke.
3. Encourage events and activities that foster intergenerational contact, particularly between seniors and youth.
4. Establish a program, possibly through local faith-based groups, that would allow seniors and people with disabilities to rent extra space in their homes to trustworthy individuals. This action would also address the housing affordability concern in Sooke.

4. Inadequate Health Services

The need for additional physicians and a well-equipped medical facility is a long-standing issue in Sooke. This problem is especially acute for persons with physical and mental disabilities and addictions.

Short-Term Compassionate Action

1. Support efforts by the Sooke Family Resource Society and Sooke Region Communities Health Network to enhance health services in our community.
2. Support efforts by the Mayor's Sooke Region Primary Health Care Services Working Group to bring more physicians to Sooke and improve medical facilities.
3. Explore the importance of spirituality in fostering compassionate action and mental health.

Longer-Term Compassionate Action

1. Establish a multi-service clinic in Sooke that would provide a whole person approach (physical, psychological, spiritual) to patient care.
2. Ensure that each resident of Sooke has access to a local physician by 2023.
3. Establish a respite lodge in Sooke for temporary accommodation for persons requiring homecare. Private caregivers would benefit from the opportunity for a break from their daily responsibilities.
4. Provide independent multi-belief spiritual development space integrated with the multi-service clinic in Sooke
5. Sponsor a public parade for peace/climate/community development to involve the whole community and to demonstrate implementation of the Sooke Compassionate Action Plan.

5. Need for Better Communication/Awareness/Collaboration

Participants at the October Sooke CAP Workshop exchanged a great deal of useful information about their respective concerns, current activities and aspirations on a broad number of issues. It was an awareness-building event that will hopefully lead to further alliances and partnership between individuals, service groups, agencies and local government. The success of the Sooke CAP will depend on this communication and collaboration.

The Sooke Region Volunteer Centre has produced a very useful brochure, entitled *Where To Find Help In The Sooke Region*, which provides a good start in generating greater awareness of local services.

A network for regular communication between individuals, service groups and agencies would allow compassionate actions in the above four areas of focus to be monitored and, where possible, measured.

This network would also have an advocacy role. Parties who are striving for the same goals would jointly press for needed changes in our community.

Short-Term Compassionate Action

1. Foster alliances and partnerships between individuals, service groups, agencies and local government.

2. Submit the Sooke CAP to the District of Sooke for inclusion in the new Official Community Plan (OCP).
3. Further promote the Charter of Compassion, keep a list of members of the community who have signed the Charter and share stories of how the Charter is being applied in the community.
4. Establish a Compassionate Action Registry to record acts of kindness. Hopefully, this recognition will have a “snowball” effect by fostering further good works in our community.

Longer-Term Action

1. Establish a communications/advocacy network which would have a triage or “navigation” capability to direct persons with specific needs to the appropriate service providers in an efficient, timely manner.
2. Monitor progress and prepare an annual public report on implementation of the Sooke CAP.

Concluding Remarks

The Sooke CAP was prepared for discussion at a workshop which will be held on March 2, 2019. Participants will be asked to develop an implementation strategy by which to carry out the specific short-term and long-term actions.

This plan will be further revised in coming years to reflect new areas of concern in our community and, hopefully, successful implementation of short-term and longer-term goals in the initial document submitted to Charter for Compassion International.

The Charter for Compassion calls on us to treat others as we wish to be treated, to help alleviate the suffering of others and to enhance our interdependent spiritual and material wellbeing. It is a journey to a better world for all of us.

Appendix 1: List of Participants at Sooke CAP Workshop, October 27, 2018

Shirley Alphonse	T'Sou-ke Nation Elder
Sherry Thompson	Sooke Shelter Society, Sooke Homelessness Coalition
Earle Bretherton	Sooke Shelter Society, Sooke Homelessness Coalition
Dale McLean	Sooke Shelter Society
John Ede	Sooke Resident (Homeless Representative)
Jeff Bateman	District of Sooke Councillor, EMCS Society, Transition Sooke
Tony St-Pierre	District of Sooke Councillor, Cast Iron Farm, Sooke Farmland Trust Society
Carolyn Bateman	Transition Sooke
Bernie Klassen	Transition Sooke, Zero Waste Sooke
Michael Tacon	Transition Sooke
Koshin-Moonfist	Sooke Region Multi-Belief Initiative
Jackson Hughes	Sooke Resident
Corporal Sam Haldane	RCMP – Sooke Detachment
Sharon Sterling	Team Sooke Refugee Sponsorship
Barbara Michell	Holy Trinity Anglican Church
Gerry Kusuqak	Sooke Resident
Michael Kusuqak	Sooke Resident
Rick Eby	Minister, Sooke Baptist Church
Maddi Prinn	Youth Worker, Sooke Baptist Church
Josh Fast	Youth for Christ, Victoria
Les Haddad	Sooke Chamber of Commerce, Baha'i Faith
Bernie Klasschuk	Sooke Resident
Christine Brown	Baha'i Faith
Elaine McMath	Sooke Resident
Neil Poirier	Sooke Resident

Sheila Wallace	Sooke Country Market
Frederique Philip	Sooke Resident
Joanne Scholten	Sooke Resident (Allies, Alliances)
Ted Mehler	Sooke Resident
Loretta Deutscher	Sooke Resident
Jen Wilde	Greater Victoria Extreme Weather Shelters
Britt Santowski	Sooke Pocket News
Shayna Chamitoff	Women Care (?) Group, SFA
Pauline Kissinger-Hamilton	Sooke Resident
Maxine Medhurst	Sooke Resident
Nicky Logins	Sooke Family Resource Society, Sooke Region Communities Health Network, District of Sooke Affordable Housing Committee, Sooke Homelessness Coalition
Jonny Morris	BC Ministry of Mental Health and Addictions
Kim Kaldal	Sooke Food Bank
Christina Brown	Big House Breakfast
Ron Ramsey	Sooke Region Resident
Melody Kimmel	Sooke Region Resident
Caroline Hudson	Sooke Food CHI
Sean Brown	Sooke Resident
Tracy Ewert	Public Health Nurse, Island Health Authority
Don Brown	Sooke Region Multi-Belief Initiative, Baha'i Faith
E.M. Anderson	Sooke Region Multi-Belief Initiative
Phil Rossner	Sooke Region Multi-Belief Initiative, Vancouver Island Counselling Centre for Immigrants & Refugees
Mark Ziegler	Sooke Region Multi-Belief Initiative, Rotary Club of Sooke

Annex 1: Moving Forward: Implementation of Sooke Compassionate Action Plan

Foreword

The short- and long-term actions proposed the five areas of focus in the Sooke Compassionate Action Plan (CAP) can only be taken through the concerted, collaborative efforts of individuals, service groups and agencies in the community. There must be a consensus among these players as to what needs to be done.

A workshop was held on the afternoon March 2, 2019 at the Sooke Baptist Church to address how best to realize the Sooke CAP.

Rick Eby, Pastor of the Sooke Baptist Church, welcomed and thanked the 24 workshop participants (list of names attached). T'Sou-ke Elder Shirley Alphonse gave an opening blessing on the value of compassion and love in helping others. District of Sooke Mayor Maja Tait described the many initiatives being undertaken by the Primary Health Services Working Group which she chairs.

Workshop Findings and Conclusions

1. It was agreed from the outset of the workshop that the five areas of focus in the Sooke CAP are closely linked. These areas of focus are:
 - a. Homelessness
 - b. Affordability
 - c. Social Isolation
 - d. Inadequate Health Service
 - e. Need for Improved Communication/Awareness/Collaboration
2. One of the participants passionately called attention to Sooke residents who are “falling between the cracks” because their basic human needs for shelter, nutritious food and meaningful social contact are currently not being met. Homelessness, for example, often arises from an inability to rent “affordable” units which is in turn linked to the social isolation arising from mental illness and/or drug and alcohol addiction. Health services are not adequate to provide effective treatment. One woman in her 50s doubted the value of a Compassionate Action Plan since even short-term actions under the plan do not

meet her basic need for shelter NOW. Many others, however, saw the benefits of the CAP provided it focuses on realistic ambitions and the pathways to achieve these goals.

3. A comprehensive, collaborative approach across service groups, agencies and concerned individuals is needed to deal with the whole person at risk and to avoid duplication of limited human and financial resources. The fifth area of focus in the Sooke CAP, the need for better communication, awareness, and collaboration, supports development of this comprehensive approach.
4. The awareness component of the fifth area of focus in the Sooke CAP also pertains to the need for recognition of the plight of its less fortunate members by the wider community. Sooke is a good place to live for most but not all of its residents. It is, in some measure, a fragmented community. A revealing statistic is that the average total household income in the District Municipality of Sooke in 2015 was \$81,455 according to the Canada Census. Sooke is no longer a place to find cheap accommodation for single parents, seniors on fixed incomes or the homeless. The importance of the Sooke Food Bank and below market/subsidized housing units to these marginalized residents cannot be overstated. The high costs of land acquisition, labour and materials remain a barrier to further construction of affordable units.
5. Although these challenges exist, much good work is underway in Sooke. It was recognized on March 2nd that progress has been made under certain areas of focus since the October 27, 2018 workshop which led to development of the Sooke CAP. Indications of this progress are:
 - a. the creation of the Sooke Extreme Weather Shelter in February at the Juan de Fuca Electoral Area Administration Building on Otter Point Road. It provided a warm, secure space for the local homeless during the particularly harsh winter conditions that month. The facility was created through the compassionate efforts of Our Place, the Sooke Shelter Society and Mike Hicks, Regional Director for the Juan de Fuca Electoral Area.

- b. the support which Mayor Tait and the Primary Health Services Working Group has secured from the Government of BC and local medical practitioners for expansion of health services in Sooke. The recent hiring of a Community Paramedic for the District of Sooke is already benefitting residents.
 - c. the recent opening of the Knox Vision Society's affordable housing complex (the Knox Centre) with 42 units at Church Road and Wadams Way, with approvals for additional such projects.
 - d. the announcement by BC Housing of 244 units of genuinely affordable housing in the Throup and Drennan Road areas for a broad range of income levels. These include 49 units at the BC Ministry of Social Development & Poverty Reduction's shelter rate (\$375 per person) along with 76 "affordable units" and 109 units at "near-market" rental rates.
6. In terms of improved communications and awareness, participants identified the need for a full-time "navigator" who could serve as a point person and clearing house for information about social services and helping organizations in the Sooke region. It was felt that the Sooke Region Community Health Network (formerly Sooke Region CHI) was the natural home base for such a person, who would be available by phone, online and in person to help Sooke residents "navigate" their way through the options. This person would also feed updated information about Sooke region services to the well advertised BC 211 phone hotline service run by the United Way. The trick will be to source and secure stable long-term funding for this position in an era when the Province of BC has either eliminated these kinds of programs or downloaded responsibility for them to citizens and/or municipal governments.
7. Participants were not asked to commit to short- or long-term actions. The Sooke CAP, if endorsed by the District of Sooke Council and recognized by the Charter for Compassion International, will be a call to action by the community.

Next Steps

1. Presentation of the Sooke CAP, including the finalized Annex, to the District of Sooke Council in late April or early May. The Council's endorsement will be requested on that occasion, as well as consideration for inclusion of the plan in an appendix to the new Official Community Plan for the District of Sooke.
2. Submission of the Sooke CAP, if endorsed by Council, to Charter for Compassion International in May.
3. Recognition of Sooke as a Compassionate Community by Charter for Compassion International in May or June.
4. Community engagement in the compassionate actions under the Sooke CAP with regular reports on implementation of the plan.

Attendees : Sooke Compassionate Action Plan Implementation Workshop

Sooke Baptist Church, Saturday, March 2, 2019, 2:00-4:00 pm

Shirley Alphonse

Jeff Bateman

Don Brown

Doug Cook

Rick Eby

Ken Gorel

Les Haddad

P.G.K. Hamilton

Bruce Hegerat

Liz Johnson

Pauline Johnson
Sifu Koshin-Moonfist
Sue Lidster
Nikki Logins
Elaine McMath
Maxine Medhurst
Brenda Parkinson
Maddison Prinn
Sharon Sterling
Maja Tait
Betty Tully
Jen Wilde
Amelie(?) Wilde
Mark Ziegler

From: Carolyn Mushata
To: Jennifer Royer Collard; Sarah Temple
Cc: Patti Rear
Subject: FW: Delegation to Council
Date: May 1, 2019 2:15:49 PM

Confirmed for the May 13th regular meeting.

From: Jody Hartley [REDACTED]
Sent: May 1, 2019 11:00 AM
To: Carolyn Mushata <cmushata@sooke.ca>
Subject: Re: Delegation to Council

Hi Carolyn.

I would like council to lift or amend bylaws restricting float homes here. Housing prices are crazy... there is little availability for single persons and a dog. Our shorelines, water and marinas are beautiful and could be utilized for off grid float homes. I am not even sure of the bylaw however every single marina in sooke told me NO the municipality does not allow float homes. I wish council to consider off grid float home living in their futures planning and shoreline development easing the housing issues and adding incredible charm to our little Sooke.

Jody

Sent from my iPhone

On May 1, 2019, at 10:29 AM, Carolyn Mushata <cmushata@sooke.ca> wrote:

Hi Jody,

Can you provide me a little bit more detail about what you would like to discuss and what you are requesting of Council, if anything? Thanks.

Carolyn Mushata
Corporate Officer



April 29, 2019

Dear Mayor and Council,

On behalf of Victoria City Council, I am requesting favourable consideration and resolutions of support for climate action through the expansion of public transit ridership. This is a big, bold vision. We don't know how it will be achieved but we do hope that by working together we can come up with some creative approaches to financing fare replacement and service expansion that will be sustainable in the long term. We look forward to working with you on this exciting proposal.

At its April 25, 2019 meeting, Victoria City Council approved the following resolution:

Resolution: Climate Action through a Major Expansion of Public Transit Ridership

WHEREAS local governments in the Capital Region have declared a climate emergency, pledging to achieve carbon neutrality by 2030 to avoid the worst consequences of global warming;

AND WHEREAS emissions from transportation generate the majority of community-based emissions within the region, meaning that switching from private vehicles to public transit has the potential to make a very large impact in achieving carbon neutrality;

AND WHEREAS forward-looking jurisdictions around the world from Kingston, Ontario to Luxembourg and Estonia are eliminating user-fee barriers to public transit ridership, with public transit services paid through the tax system rather than at the fare box.

THEREFORE BE IT RESOLVED THAT the City of Victoria calls on the Victoria Regional Transit Commission and BC Transit to:

1. Embrace determined climate leadership through a major expansion of public transit ridership in the Capital Region, focused on the phasing out of user fees and a substantial improvement in service levels and fleet electrification.
2. Begin implementing this climate-action policy with a pilot programme in the 2020 budget eliminating user fees for people 18 years of age and younger, replacing revenues currently generated through fares with adjustments to provincial transfers and the property tax requisition.

.../2



3. Develop an implementation plan for a pilot programme to eliminate user fees for all riders within the Capital Region as a form of climate action, including enhanced service levels, enhanced transit priority including an extensive network of bus lanes, and fleet expansion to meet increased demand, in conjunction with fleet electrification.

We eagerly look forward to your support on this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa Helps".

Lisa Helps
Victoria Mayor

Cc. Victoria Regional Transit Commission
Mayor and Councils in the Capital Regional District



April 29, 2019

Dear Victoria Regional Transit Commission,

On behalf of Victoria City Council, I am requesting favourable consideration and resolutions of support for climate action through the expansion of public transit ridership. This is a big, bold vision. We don't know how it will be achieved but we do hope that by working together we can come up with some creative approaches to financing fare replacement and service expansion that will be sustainable in the long term. We look forward to working with the Transit Commission on this exciting proposal.

At its April 25, 2019 meeting, Victoria City Council approved the following resolution:

Resolution: Climate Action through a Major Expansion of Public Transit Ridership

WHEREAS local governments in the Capital Region have declared a climate emergency, pledging to achieve carbon neutrality by 2030 to avoid the worst consequences of global warming;

AND WHEREAS emissions from transportation generate the majority of community-based emissions within the region, meaning that switching from private vehicles to public transit has the potential to make a very large impact in achieving carbon neutrality;

AND WHEREAS forward-looking jurisdictions around the world from Kingston, Ontario to Luxembourg and Estonia are eliminating user-fee barriers to public transit ridership, with public transit services paid through the tax system rather than at the fare box.

THEREFORE BE IT RESOLVED THAT the City of Victoria calls on the Victoria Regional Transit Commission and BC Transit to:

1. Embrace determined climate leadership through a major expansion of public transit ridership in the Capital Region, focused on the phasing out of user fees and a substantial improvement in service levels and fleet electrification.
2. Begin implementing this climate-action policy with a pilot programme in the 2020 budget eliminating user fees for people 18 years of age and younger, replacing revenues currently generated through fares with adjustments to provincial transfers and the property tax requisition.

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3. Develop an implementation plan for a pilot programme to eliminate user fees for all riders within the Capital Region as a form of climate action, including enhanced service levels, enhanced transit priority including an extensive network of bus lanes, and fleet expansion to meet increased demand, in conjunction with fleet electrification.

We eagerly look forward to your support on this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa Helps".

Lisa Helps
Victoria Mayor

Cc. Mayor and Councils in the Capital Regional District