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Sustainability Indicators for the Fraser Basin
Consultation Report

Fraser Basin Council

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Acknowledgements

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EXECUTIVE SUMMARY

In the Fall of 2000 the Fraser Basin Council (FBC) initiated a process to identify indicators to be used in tracking and reporting on progress towards sustainability of the Basin. As part of the process, the FBC developed *Sustainability Indicators for the Fraser Basin: Workbook* which presented 40 draft indicators for consideration as sustainability indicators.

Between Fall 2000 and Spring 2001 the FBC undertook a number of communication and consultation activities to raise awareness of the indicators initiative and seek input on the draft set of indicators in the *Workbook*. Key communication and consultation initiatives included regional workshops held in each of the 5 regions of the Basin, an indicators survey to provide feedback on the draft indicators and indicators workshops in the *State of the Fraser Basin Conference*.

Based on the feedback provided by FBC partners and the general public there appears to be strong support for developing a set of sustainability indicators for the Fraser Basin. In addition, a number key of messages have emerged that will be used to guide the FBC's future work in developing and utilizing sustainability indicators. These include:

- The indicators must appeal to government and non-government decision-makers and the general public.
- There is a need to strengthen the economic and institutional indicators.
- A final set of indicators must address both rural and urban perspectives.
- There is support for fewer, rather than more, "primary" indicators.
- Indicators should be reported on every 3 years.
- Indicator reporting should be accompanied by targets and some interpretation of indicator trends.
- The reporting of indicators should lead to collaborative action.
- The FBC should be prepared to play a role in facilitating action where trends suggest significant sustainability challenges exist.

Based on the direction received from FBC partners, steps will be taken to identify a set of sustainability indicators and initiate the process of developing a state of sustainability report for the Fraser Basin.

Suggested uses "…as a tool to educate the general public, change lifestyle habits and help set direction for those involved in working toward sustainability."

BACKGROUND

In the Fall of 2000 the Fraser Basin Council (FBC) initiated a process to identify indicators to be used in tracking progress towards sustainability of the Fraser Basin. These indicators will also support the development of a State of Sustainability Report for the Fraser Basin to be released in the fall of 2002.

A key part of the process of identifying sustainability indicators for the Fraser Basin was the development of *Sustainability Indicators for the Fraser Basin: Workbook*. The *Workbook* presented 40 draft indicators for consideration as sustainability indicators and was released in conjunction with the FBC's *State of the Fraser Basin Conference* in Nov. 2000.

In order to ensure that the indicators selected reflect all aspects of sustainability and the diverse range of interests in Basin communities, the FBC initiated a number of processes to provide for dialogue, between the FBC and its partners, on the draft indicators proposed in the *Workbook*.

This document provides an overview of the process that was used to obtain input from Basin residents on the draft indicators and summarizes the feedback that was provided to the FBC through the consultation process. It will be used by the FBC in selecting a final set of sustainability indicators and determining how they can be most effectively used to support the development of a "State of Sustainability Report" for the Basin, to be released in 2002.

Suggested uses "… tracking successes, reporting to the public within the Basin, education on issues, to see where the shortfalls are…"

1 Overview of Consultation Activities

In order to raise awareness of the FBC's indicator initiative and to encourage dialogue among FBC partners on the proposed indicators, the FBC undertook a number of consultation and communications activities as outlined below.

Regional Workshops

Eight regional indicators workshops were held in each of the 5 regions, throughout the Fraser Basin, between March 20 and June 5, 2001. Approximately 25 – 30 people attended each of the workshops and provided input on the *Workbook*.

Workshop discussions provided feedback on the initiative in general, which indicators might be appropriate, and how reporting and interpretation should be undertaken. The workshops also provided an opportunity to highlight FBC initiatives throughout the Basin.

On-line Survey

Concurrent with the November 2000 *State of the Fraser Basin Conference*, an on-line indicators survey was initiated on the FBC website. Approximately 400 individuals completed the survey between November 20th, 2000 and April 24th, 2001. In addition to obtaining input on the draft indicators, the use of an on-line survey, provided an opportunity for the FBC to develop new methods of communicating with FBC partners

and the general public. As a result a number of lessons have been learned that could be applied in future on-line communication efforts.

State of the Fraser Basin Conference Workshops

In addition to providing a forum for the release of the *Sustainability Indicators for the Fraser Basin: Workbook*, the November 2000 *State of the Fraser Basin Conference* included working sessions designed to give conference participants an opportunity to give feedback on the FBC sustainability indicators initiative. Approximately 300 individuals attended the State of the Fraser Basin Conference and working sessions on indicators.

Dialogue with Key Partners

In February of 2001, letters and the sustainability indicators *Workbook* were sent to key FBC partners with a potential interest in the sustainability indicators initiative. Key FBC partners were informed of the regional indicators workshops, on-line survey and provided an opportunity to meet with FBC directors and/or staff.

Other Communication Activities

Websites

In order to raise awareness of the Sustainability Indicators *Workbook* the FBC's sustainability indicator initiative was profiled on a number of FBC partner websites. Partner websites profiled information on the FBC indicator initiative including a brief written description of the initiative and hotlinks to the FBC website and indicators survey. Partner websites include:

- UBCM (Union of BC Municipalities)
- BC Land Trust
- Professional Engineers and Geoscientists of BC
- Planning Institute of BC
- BC Agriculture Council
- Green Economy Secretariat
- Canadian Business for Social Responsibility
- Environment Canada
- Telus (Community Forum)

Regional Media

A number of indicator-oriented articles were written and circulated for publication in regional newspapers. The intent of the articles, which featured FBC Directors, was to raise awareness of the FBC's indicator work and the regional workshops. In order to raise awareness of sustainability indicators and their utility, the articles linked some of the draft indicators from the *Workbook* with timely current events (e.g., energy indicator linked to high natural gas prices).

FBC Newsletter

The FBC Spring 2001 newsletter, *Basin News*, provided an opportunity for all FBC partners to learn more about the FBC's work to develop sustainability indicators and

Suggested uses "…to assist policy decision-making in my job"

how they could receive and provide feedback on the *Workbook*. The newsletter also announced the dates and locations for Regional Indicators Workshops.

Speaking Engagements

In March 2001, the FBC Directors and staff attended an indicators conference hosted by the National Roundtable on Environment and Economy and were able to profile the FBC sustainability indicators work as they spoke to the 600 participants of the conference. In addition, FBC staff spoke about the FBC sustainability indicators work at a number of smaller conferences and workshops around the Basin.

2 What we Heard: Summary of Feedback

General

In general, FBC partners were very supportive of the FBC's sustainability indicator initiative. Moreover, participants in the regional workshops and most individuals that provided feedback on the *Workbook* were very well informed about the use of indicators in general as well as the FBC's initiative. As such, dialogue with FBC partners provided many constructive ideas that will assist the FBC in advancing the development of sustainability indicators for the Fraser Basin.

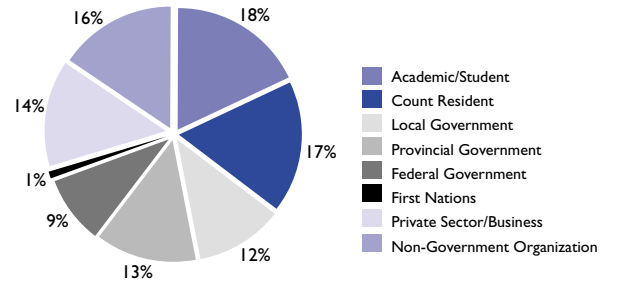
The FBC's work in developing sustainability indicators, in particular the regional workshops, provided an excellent opportunity to engage those with previous experience with the FBC as well as new partners. Those that participated in workshops or provided feedback on the *Workbook* welcomed the opportunity to learn about indicators and pointed to facilitating indicator-related education and coordination activities as a "value-added" service that the FBC can provide.

Suggested uses "Ultimately I think the results would speak to our success as citizens to internalize the principles of sustainability, the quality of our policy making and leadership in directing the course of action."

Response by Region and Interest

As illustrated in Figure 1, the distribution of feedback on the FBC indicators initiative was balanced with participation from all orders of government, non-government and business interests as well as Basin residents. Response was also relatively well balanced across the 5 regions of the Basin as illustrated in Figure 2.

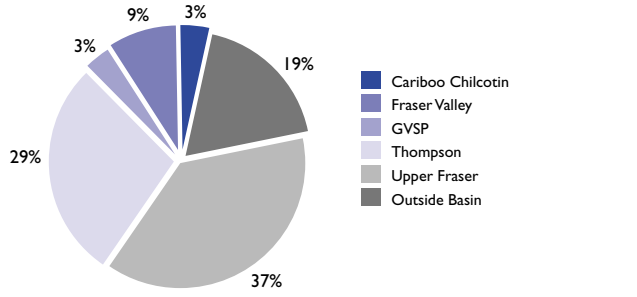
Fig.1 **Survey Response by Interest**



Purpose

In both the regional workshops and through the on-line survey, FBC partners provided feedback on how they might use the indicators or how they would like to see them used. Feedback is consistent with the intended purpose/use of the indicators that was proposed in the *Workbook*. Some of the potential uses for sustainability indicators, identified by FBC partners are included in the sidebars of this document.

Fig.2 **Response Rate by Region**



Audience

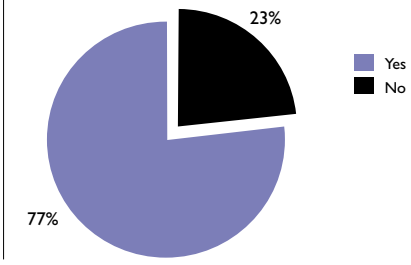
Feedback from the consultation process was consistent in identifying two main audiences for the sustainability indicators. The first audience is key FBC partners including government and non-government interests that are involved in decision-making. It was noted that this audience is essential as it includes the array of interests that have the capacity to collaborate to address sustainability challenges that may be identified.

In addition to FBC partners, many people noted that the indicators must be accessible and of interest to the general public (including individuals and organizations that traditionally are not engaged in discussions on sustainability). In this context, it is essential that the presentation of the indicators ensure accessibility to a broad audience.

Balance

In general, feedback on the proposed indicators suggests that they are "balanced" in that they give some attention to each of the four Directions in the Fraser Basin Council's *Charter for Sustainability*. Figure 3 illustrates that 77% of respondents to the on-line survey were supportive of the mix of indicators.

Fig.3 **Are the indicators balanced?**



At the same time, there were many suggestions about improving the balance. Some of the comments regarding balance reflect the personal bias of survey respondents (e.g. there should be more social, economic, or environmental indicators).

While most respondents stated that an appropriate balance existed among the mix of indicators, a limited number of individuals stated that the scope of the indicators is too broad and that the FBC should not be looking at some of the things addressed in the Workbook.

While, the definition of sustainability in the Charter for Sustainability - that guides all FBC initiatives - is broad and integrates social, economic, environmental and institutional considerations, it appears that this broad definition of sustainability is not equally supported by all partners.

For individuals that did support the broad definition of sustainability that underlies the FBC's indicators initiative, most noted that some areas of the *Workbook* simply require more work to develop meaningful indicators. For example, while people acknowledged the need for indicators related to the institutional aspects of sustainability, the indicators proposed in the *Workbook* were not seen as effective. In addition, indicators related to the economic aspects of sustainability were seen by some to focus on "socio-economic" issues and did not speak to economic capacity or vibrancy.

Rural and Urban Sustainability

Participants in region workshops, *the State of the Fraser Basin Conference* and on-line survey respondents all identified the need to identify indicators that are relevant to both urban and rural perspectives on sustainability.

Suggested uses "… to help expedite the change process"

In some cases, specific indicators are seen as either rural or urban (e.g., concentration of population in Growth Concentration Areas). In other cases, indicators might be interpreted differently in rural versus urban communities. For example, increasing levels of transit use in urban communities was identified as being a positive trend (i.e., indicates increased transit capacity and change in commuter patterns). However, in rural communities, increasing levels of transit use were identified as being related to a downturn in the economy and individuals not being able to afford to operate a vehicle.

The central message from most individuals was that the final set of indicators would need to effectively reconcile urban and rural perspectives on sustainability and provide some indicators that were relevant to each.

Need for "Action"

One of the key messages that emerged from the consultation process was the application of the indicators must lead to action (i.e., if a specific indicator exceeds a threshold or target, what happens?). While people support the development and use of indicators, it is clearly important that the application of indicators affects change. At the same time, participants by and large noted that the reporting of indicators should encourage constructive dialogue, not assign blame (i.e., finger pointing).

Many people noted that the FBC should play a role in ensuring that reporting leads to action. However, it was also acknowledged that the FBC does not have control over policy and programs that are integral to affecting change. As such, most individuals stated that the FBC could utilize its facilitative/partnership building skills to encourage action in response to the reporting of indicators.

The most common model, for affecting change, that emerged from the consultation process would see the FBC working to mobilize and encourage diverse groups that have the tools to work collectively to address complex social, economic and/or environmental challenges. The suggestion was made that an "action planning process" could be undertaken following, or prior to, the release of the State of Sustainability Report. Such a process would bring together decision-makers to develop action plans and foster an ongoing commitment for action.

Suggested uses "As a municipality in the Fraser Basin, we are interested in using the results of the sustainability indicator monitoring as a yard stick by which to measure sustainability within our community."

Organizational Framework

A frequent comment from participants in the consultation process was that the indicators required a clear organizational framework. The draft indicators presented in the *Workbook* utilize the four Directions of the Fraser Basin Council's *Charter for Sustainability* for an organizational framework (i.e., Understanding Sustainability, Caring for Ecosystems, Strengthening Communities, and Improving Decision Making).

Many workshop participants stated that the link to the *Charter* was not clear and the organizational framework was not effective in drawing the linkages between the various aspects of sustainability.

In order to address this issue a number of suggestions were made including: using *Charter for Sustainability* Goals, identifying sustainability themes and simply organizing indicators as social, economic, environmental and institutional.

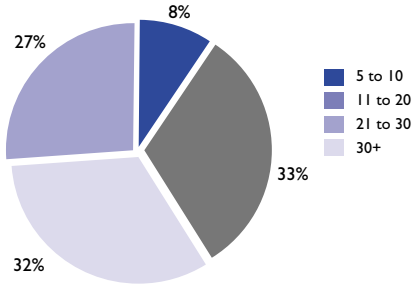
Number of Indicators

The indicators survey provided respondents with an opportunity to indicate how many indicators should be tracked (i.e., 5-10, 11-20, 21-30, or 30 +). As illustrated in Figure 4, there was a diversity of opinions about how many indicators should be tracked. While the largest number of respondents (33%) suggested that 20 or fewer indicators should be tracked, there were comparable levels of support for fewer or more indicators.

Many individuals supporting a smaller set of indicators (i.e., fewer than 20) related their comments on the number of indicators required to comments about presentation, accessibility and audience. The main message from these individuals was that to ensure the indicators were accessible, it was essential to have a concise (i.e., small) list of indicators.

While there was a diversity of opinions regarding how many indicators should be tracked, a number of survey respondents suggested that a larger set of secondary indicators be identified to support whatever primary indicators are chosen.

Fig.4 **How many indicators should be tracked?**



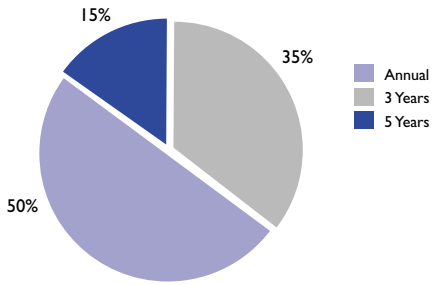
Reporting Frequency

The indicators survey provided respondents with an opportunity to indicate how frequently indicators should be reported on (i.e., annually, 3 years, 5 years, other). As illustrated in Figure 5, the most support (50%) was for a 3-year reporting frequency with 38% of respondents supporting an annual reporting frequency. Only 15% of respondents supported a 5-year reporting frequency.

While a significant percentage of people supported an annual reporting frequency, many people noted that this could take place on an "as-needed" basis. For example, indicators that show a significant change, prior to a reporting interval, should be reported immediately. As such, there may be an opportunity to establish a 3-year reporting interval with "as-needed" updates on specific indicators.

An approach, such as described above, would also allow the introduction of new indicators that may be required over time or support a phased approach to introducing the entire set of indicators that are selected (e.g., 5-7 indicators introduced per year over 3 years).

Fig.5 **How often should indicators be reported?**



Presentation

A number of general comments were made about presentation of the indicators. Some key comments that emerged include:

Suggested uses "… to identify areas needing more research or more implementation or education of the public"

Accessibility – The presentation of the indicators should be accessible in terms of language (e.g., style and length) and utilize a simple presentation format (e.g., use graphics to convey information).

Background Information – Key background information should be included in a State of Sustainability Report in order to provide context for the indicators presented (e.g., demographics, immigration / emigration, GDP etc.).

Comparisons – In order to better understand progress being made in advancing sustainability of the Basin, it was suggested that information be provided, where possible, to compare indicators trends with other areas (e.g., national and international comparisons).

Interpretation and Targets

One of the key questions that was discussed through the consultation process was the extent to which reporting of the indicators should be accompanied by "interpretation". A related question was whether or not targets should accompany indicators.

Dialogue with people throughout the consultation process determined that there was support for identifying targets for each indicator and providing some level of interpretation when reporting on the indicators. At the same time, many people indicated that the interpretation should not be exhaustive and that some of the interpretation should be left up to the audience. Key information, that could be included in providing an interpretation of indicators trends includes:

Suggested uses "Tracking changes in indicators over time will help us develop policy and identify policy breakdowns and warn us of emerging sustainability challenges"

What does the data tell us? - What does the data tell us about the well being of social, economic or environmental systems. What are the limitations of the data (e.g., confidence in collection and analysis techniques);

Change - If there is a change in the indicator over time (i.e., is it moving towards or away from the target?)

Significance – What are the implications, positive or negative, for sustainability from a social, economic or environmental perspective?

Why is it happening? – What are some of the potential factors that are influencing movement of the indicator relative to the target?

What can be done? - What – if anything – should be done to change the trend? What are the opportunities and challenges? Who should be playing what roles?

While there was support for some level of interpretation to accompany the indicators, many individuals had comments on the process of interpretation (i.e., how to interpret the data) and the outcomes that should be achieved.

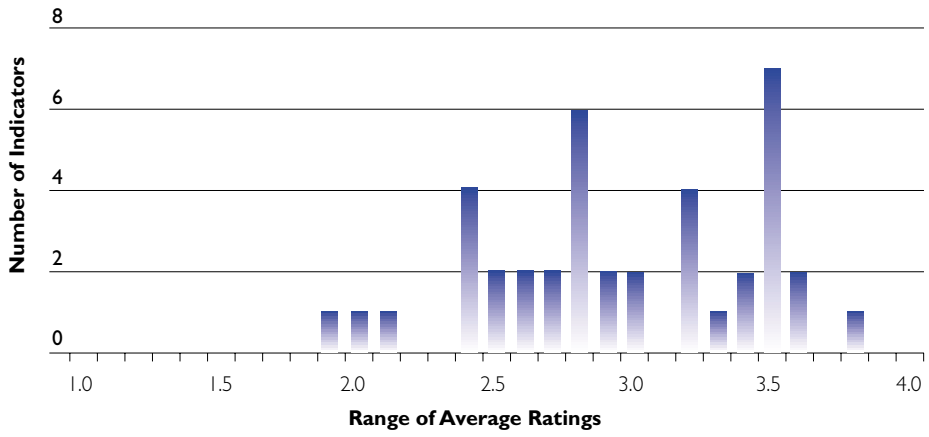
Most workshop participants and survey respondents noted that the process of interpretation should include a diversity of perspective (e.g., government and non-government interests) and that the process should be collaborative and lead the way to solutions (i.e., the "interpretation" should not be "a finger pointing exercise").

3 Response to Draft Sustainability Indicators

Feedback was provided on each of the 40 draft indicators presented in the *Workbook* through survey questionnaires filled out at workshops or on-line. Individuals completing the indicators survey were asked to rate draft indicators on a scale of 1 (i.e., not supported) to 4 (i.e., completely supported). The *Workbook* questionnaire is provided in Appendix A.

Average ratings for each of the draft indicators were derived and are summarized in Figure 6. Average ratings ranged from 1.8 to 3.7 with 18 of 40 indicators having an average rating of greater than 3.0. An average rating of 3.0 or higher was considered to indicate a reasonably high level of support among survey respondents.

Fig.6 **Distribution of Average Ratings**



The following section summarizes how each of the indicators was rated by survey respondents and provides representative comments on each indicator including suggestions for alternative indicators. A full list of the suggestions for alternative indicators is provided in Appendix B.

Suggested uses "… to increase understanding about the status of our culture."

1 Solid Waste Diverted from Landfills

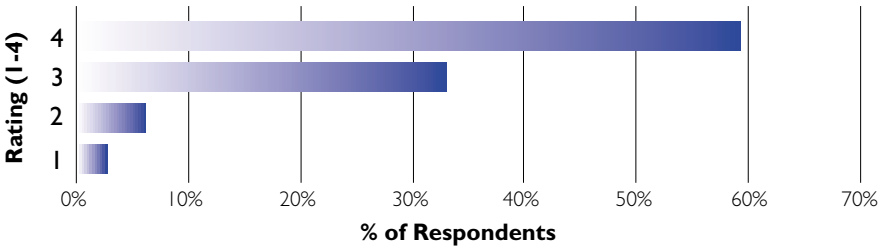
The Data ...
The amount of waste per capita going to landfills now, subtracted from the amount of waste per capita in 1980 - before waste reduction, reuse and recycling programs were introduced.

What It Tells Us About Sustainability... Changes in the waste diverted from landfills reflect our ability to change lifestyle habits in order to reduce, reuse and recycle materials.

Average Rating 3.5

What We Heard From You

- Good measure but you need to separate domestic from industrial and commercial wastes, and track trends of recycling and reuse also.
- Total waste reduction including toxic waste and persistent harmful chemicals (e.g., batteries, solvents, etc.) would be a preferred indicator.
- Volume and class of recycled material (e.g. glass, newsprint, compost, etc.) should be considered.
- Total waste generated should be provided at least for context.
- Net amount going into landfills is a better indicator.



2 Water Consumption

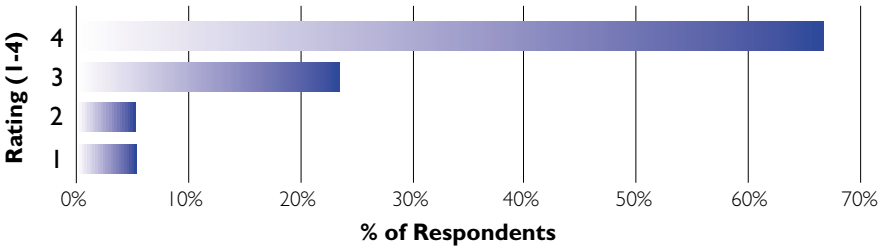
The Data...
How much domestic water is used per person each year in the Basin.

What It Tells Us About Sustainability... Changes in water use patterns reflect our awareness and willingness as individuals to change the way in which we consume our natural resources.

Average Rating 3.4

What We Heard From You

- Separate domestic from industrial and commercial use so changes in the industrial consumption don't overwhelm changes by homeowners.
- Supporting indicator should be a ratio or comparison with the volume of liquid effluent discharged through sewer.
- Suggest including agricultural water use as well.
- Water consumption also reflects the quantity of wastewater generated at commercial and residential establishments.



3 Adoption of Regional Growth Strategy

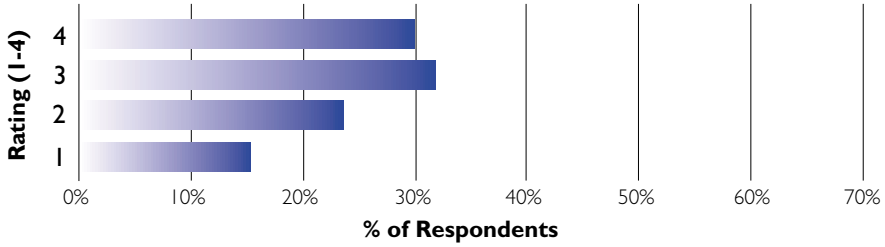
The Data …
The number of regional districts that have adopted or are working toward a regional growth strategy.

What It Tells Us About Sustainability… Changes in the number of communities that have adopted a regional growth strategy (RGS) reflect efforts underway to manage growth in a sustainable manner.

Average Rating 2.8

What We Heard From You

- Develop an indicator of communities that have growth management elements in place (e.g., land use planning, habitat protection, stormwater controls, etc.).
- Where people live, relative to where they work is a better indicator.
- Consider or present trends in actual population growth.
- Look at the amount of agricultural land or natural areas lost to development.
- Having a (growth) strategy is not the same as implementing it. The indicator will not be useful once RGSs are adopted.
- Would rather track success in implementation, but it is difficult to measure.
- Should consider or integrate with other land use plans (i.e., LRMP level or higher).
- Not an effective indicator for much of the Basin outside of the Greater Vancouver region.



4 Newspaper Circulation

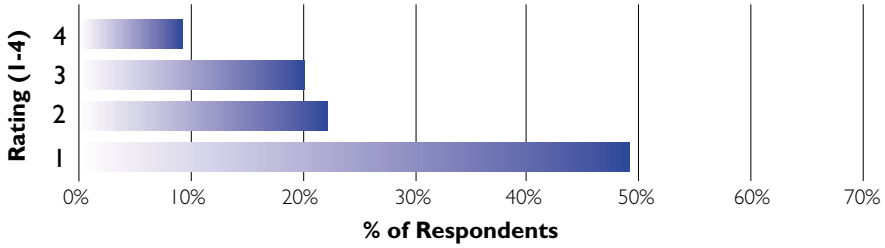
The Data…
Circulation rates for daily and regional newspapers in the Basin.

What It Tells Us About Sustainability… Changes in newspaper circulation reflect our awareness of sustainability issues and opportunities to contribute toward sustainability.

Average Rating 1.8

What We Heard From You

- Conduct polls to track the level of awareness and knowledge of sustainability.
- The content of newspapers (e.g., local, national) does not assure transmission of accurate or reliable information.
- This implies (falsely) that newspapers provide quality information on sustainability.
- A better indicator is quality of education in the schools, starting from elementary and how sustainability is incorporated into curriculum.
- Not sure that this indicator is that important or measurable.
- Literacy rates are more important as high levels of literacy are necessary for the dissemination and understanding of sustainability information.



5 Internet Access

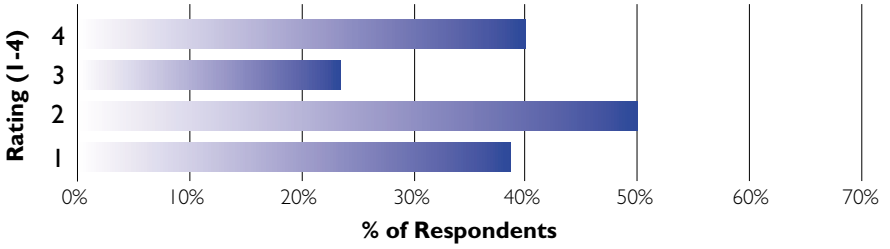
The Data …
How many households are connected to the Internet.

What It Tells Us About Sustainability… Changes in connection to the Internet reflect a new dimension to the communications capacity of communities and are a measure of our ability to share information and viewpoints.

Average Rating 2.0

What We Heard From You

- Access will enhance information management and access to shared resources.
- This indicator reflects our degree of acceptance of a particular form of technology, not the extent to which we are informed.
- If this is about understanding sustainability, participation in sustainability related websites may give a better indication.
- As with the newspapers, it implies that simple access to information outlets is a benefit to tracking sustainability, and this is not true.
- The Internet may be used for exchange of, and access to, information on sustainability issues, but it is not necessarily used in that way.
- Access to information doesn't necessarily lead to information sharing or collaboration.



6 Levels of Education

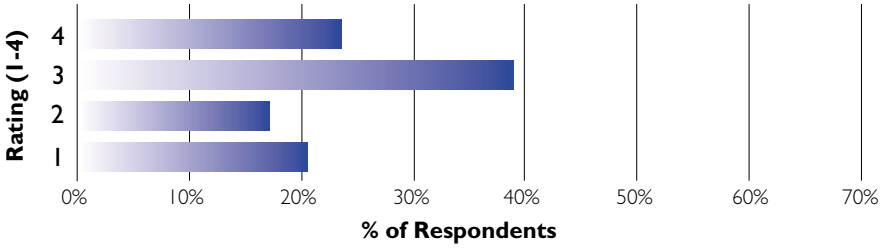
The Data…
Highest level of education achieved by Basin residents over the age of 15.

What It Tells Us About Sustainability… Changes in the level of education among Basin residents reflect community capacity to understand and contribute to sustainability.

Average Rating 2.8

What We Heard From You

- Report percent literate, percent with high school degree, percent with Bachelor's degree.
- Literacy rates would be a better indicator as reading and writing are fundamental for access to information
- Assumes that a more educated citizenry is a more informed citizenry and one that acts in a more sustainable manner.
- The relationship between education levels and sustainability is not clear.
- It is known that higher education creates broader social awareness and willingness to act liberally and progressively.
- This shows the relative potential of the citizen to contribute to the community through work and leadership.
- This indicator does not acknowledge those with traditional knowledge or with "limited education" that have common sense and an understanding of issues.



7 Water Quality

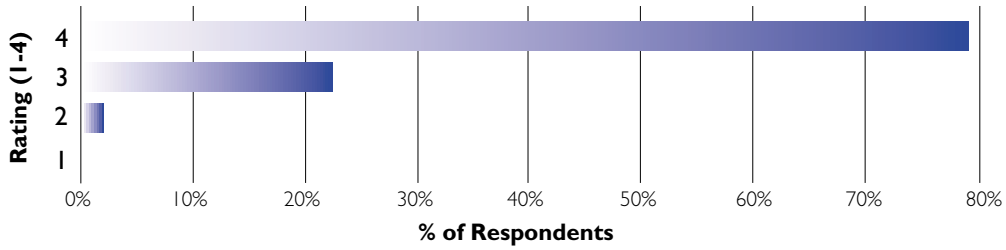
The Data … Water quality ratings for water bodies throughout the Basin.

What It Tells Us About Sustainability… Changes in water quality throughout the basin reflect the value we place on and our ability to care for aquatic ecosystems.

Average Rating 3.7

What We Heard From You

- The weakness of this indicator is that you lack consistent water quality standards for all surface waters and adequate monitoring density to get good information.
- The demand on water resources associated with various domestic and industrial uses and activities make this a very important indicator.
- This is an essential indicator since the Fraser system has already experienced degradation.
- If results are borderline or poor, is it possible to find out what is causing the problem? This indicator needs to be supported by secondary indicators.



8 Status of Fraser River Sockeye

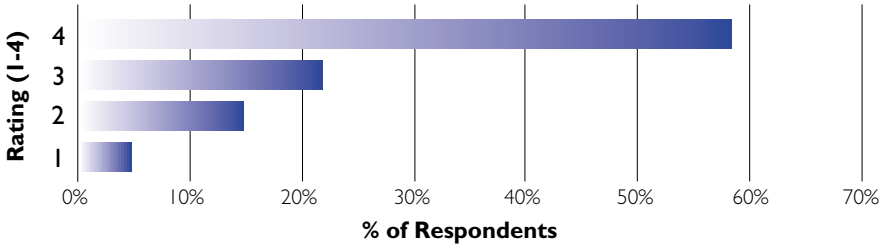
The Data… Run size and spawning escapements of Fraser River Sockeye.

What It Tells Us About Sustainability… Changes in the run size and escapements of Fraser River Sockeye salmon reflect the health of this fish stock's habitat and the communities that depend on the resource.

Average Rating 3.3

What We Heard From You

- A very public friendly indicator.
- Salmon require a wide range of habitats and are good indicators of general ecosystem health.
- Should be complemented by an indicator that considers habitat integrity.
- Could consider status of sturgeon as an alternative indicator.
- Other indicator species should be tracked too (e.g., perhaps a relative index of biodiversity).
- A good indicator for accessing the aquatic health of the Fraser River ecosystem.
- The status of salmon is highly influenced by external factors. It would be difficult to jump to the conclusions listed here based on the indicator.
- Status of all fish - fish counts or fish mass - not just one species should be considered.



9 Status of Salmonids

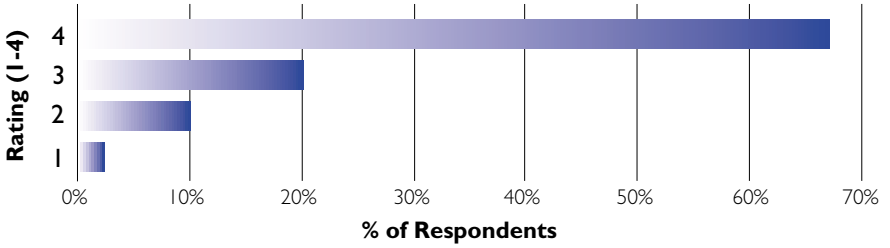
The Data … The percentage of salmonid stocks that are extinct, at moderate to high risk of extinction or of special concern.

What It Tells Us About Sustainability… Changes in the status of salmon stocks reflect our ability to care for fish and fish habitat.

Average Rating 3.5

What We Heard From You

- A good indicator of watershed health.
- Add an indicator that looks at assessments of benthic invertebrates as an indicator of the integrity of aquatic ecosystems.
- Quality of data, geographic coverage and data availability may be a problem with this indicator.
- Since Canada lacks a strong Endangered Species Act, you won't have consistent data.
- Potentially misleading because if a species goes extinct it is no longer considered "at risk". As such, species extinction may not be captured by this indicator.



10 Species at Risk

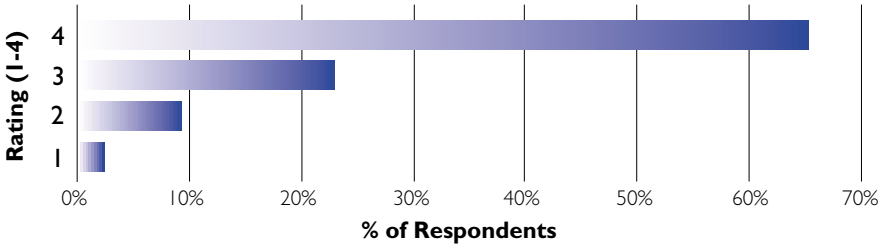
The Data… The percentage of known species that are threatened or endangered.

What It Tells Us About Sustainability… Changes in the number of threatened or endangered species within an ecosystem reflect our ability to care for a variety of species and habitats.

Average Rating 3.5

What We Heard From You

- More useful than indicators 8 and 9 as it addresses a broader range of species.
- Pick a dozen indicator species - resident species across major phyla, then track abundance trends.
- An addition rather than an alternative would be habitat ecosystems at risk.
- An additional indicator would be the number of relatively intact and threatened ecosystems, and a general total of identified ecosystems.
- Also need an index of habitat protected (i.e., hectares of habitat protected in each region and by type of natural area).



11 Toxic Contaminants

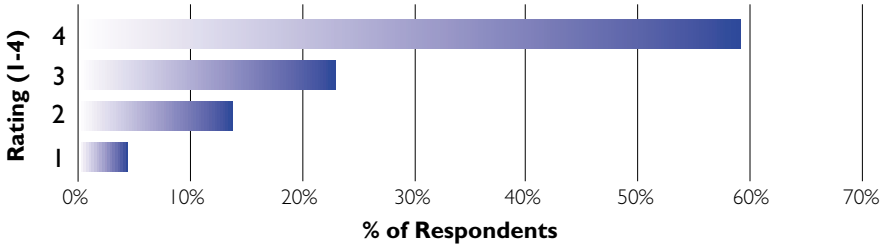
The Data …
The amount of persistent organochlorides (POCs) in Great Blue Heron eggs.

What It Tells Us About Sustainability… Changes in the concentration of contaminants in Great Blue Heron eggs reflect our ability to reduce the introduction and persistence of contaminants in the environment.

Average Rating 3.3

What We Heard From You

- This is a narrow and indirect measure that measures environmental burden, not new inputs and is not useful for remediation action.
- A better indicator would be the amount of toxins consumed and produced in BC. How much do we use directly? Indirectly (i.e., through manufacturing)? How much do we produce?
- Will other species be looked at (e.g., hawks that migrate to South America and the problems that they face down there such as pesticides etc.).
- Routinely sample water, air, soil and sediments for wide range of contaminants in ecosystems.
- Need data on the concentration of contaminants in Great Blue Heron eggs for other areas in the Fraser Basin besides the Lower Fraser.



12 Composition of Forest Lands

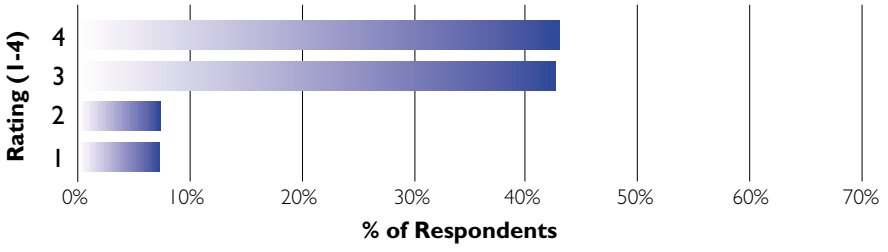
The Data…
Percentage and extent of area by forest type and age class relative to historical condition and total forest area.

What It Tells Us About Sustainability… Changes in the composition of forest lands reflect our ability to support a range of forest dependent activities while minimising our impact on forest ecosystems.

Average Rating 3.1

What We Heard From You

- More explanation of the data is required as this is an important but relatively complex indicator.
- Extent and area of total forest cover should be provided as contextual information.
- Biodiversity within forests should be considered as an alternative or secondary indicator.
- The area of forest lands and habitat types that are protected should be considered.
- Area of land certified by Canadian Standards Association (CSA), International Organization for Standardization (ISO) and, Forest Stewardship Council (FSC) would be a good alternative.



13 Farm Practices

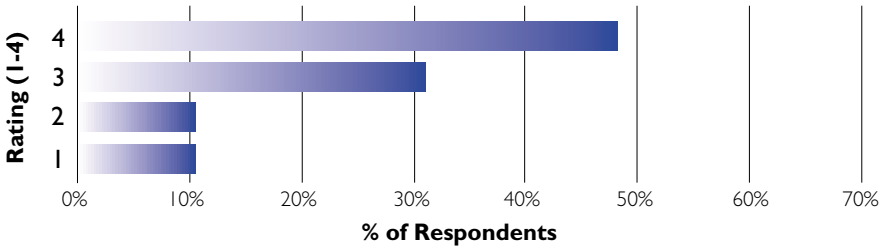
The Data …
Area of farmland serviced by integrated pest management (IPM) consultants and the area of farmland where soil and water conservation is practiced.

What It Tells Us About Sustainability… Changes in farm practices reflect a commitment to maintaining a productive agricultural base and reduce negative environmental impacts.

Average Rating 3.2

What We Heard From You

- Riparian habitat protection and fertilizer/manure practices are appropriate Lower Mainland indicators that are more relevant.
- Water quality, adjacent to agricultural lands, is an important component of this indicator.
- Pesticide sales data should be considered because it includes industrial and domestic use of pesticides as well as agricultural use.
- A measure of streamside and riparian protection would be a more important indicator though the data may be weak.
- Require different indicators for interior agricultural systems. The integrity of interior grasslands could be looked at as they support agricultural systems as well as biodiversity and tourism.



14 Access to Parks

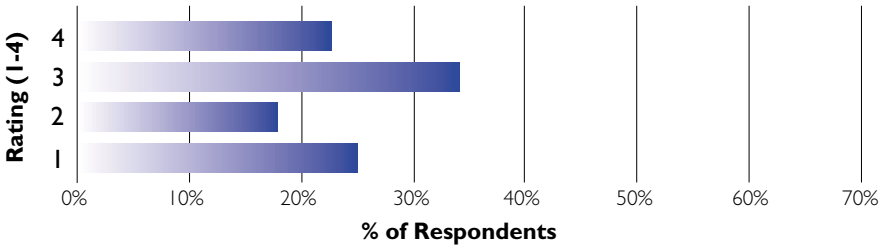
The Data…
The area of parkland available for public recreation for every 1000 people.

What It Tells Us About Sustainability… Changes in the availability and accessibility of parklands reflect our ability to preserve open greenspace for recreational use and environmental benefits.

Average Rating 2.5

What We Heard From You

- Parks are based upon planned communities and the need to have more parks doesn't indicate that the environment itself is sustained.
- Set up a classification of parks based on use (e.g., passive or consumptive) then pick a desired number of acres per capita (i.e., a target) and track deviation from the target.
- Amount of wilderness reserve and or inaccessible or limited access area
- Add a weighting of some sort for community recreation facilities and its aspect on community well-being and social gathering.
- Extent of parkland, total and per capita.
- Some alternative or secondary indicators might be area of land protected from development and area of land with restricted public access.
- This doesn't tell us anything about the quality of the park.
- Does this include municipal parks? There needs to be more explanation of the data.



15 Park Use

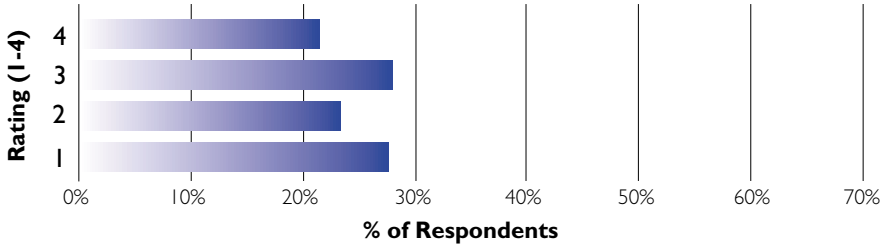
The Data …
Number of park user days, by type of use.

What It Tells Us About Sustainability… Changes to participation in outdoor recreation activities reflect our recreational patterns and how we enjoy the natural environment.

Average Rating 2.5

What We Heard From You

- Parks are not just good for aesthetics but for recreation and tourism activities that drive our economy. These links need to be given more attention.
- Many people enjoy recreation in municipal parks (i.e., some people cannot get out into rural areas) with provincial parks being used mainly by tourists. I'm unsure about the value of this indicator.
- Compare with how other countries are managing parks (e.g., human vs. natural environment) biodiversity maintenance.
- Survey undertaken every 5 years benchmarks: "Parks & Wilderness for the 90's - A Protected Area Strategy for BC". This would be a good data source.
- Important especially if a park or green belt is needed as a wildlife corridor or buffer zone.
- The quality of parks is important to consider (e.g., native species vs. presence of exotic species). A grassy playing field, for example, may afford only few environmental benefits.



16 Contaminated Mine Sites

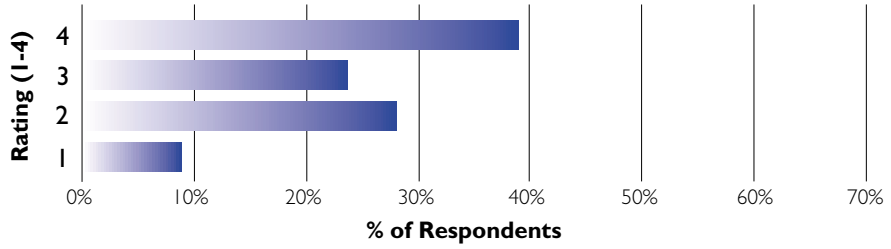
The Data…
The number of mine sites in the Basin listed on the contaminated site registry as a suspected or remediated site (i.e., as defined in the *Contaminated Sites Act*).

What It Tells Us About Sustainability… Changes in the number of mines on the contaminated site registry reflect the potential social, economic and environmental risks associated with contaminated sites.

Average Rating 2.9

What We Heard From You

- Need to look at all contaminated sites associated with all industrial sectors, not just mining.
- There is too much overlap with indicator 17 (i.e., non-compliance in the mining sector). Not sure the distinction would be grasped by most people.
- This doesn't tell us if there are more mines and it doesn't ensure that the mines operating are sustainable. These are more important considerations.



17 Non-Compliance in Mining

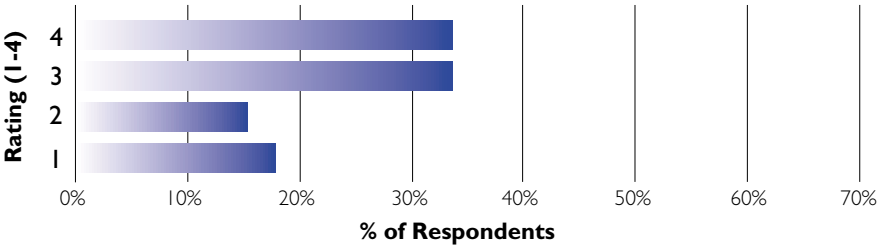
The Data …
The number of mines that do not meet environmental standards and appear on the non-compliance list.

What It Tells Us About Sustainability… Changes in the number of mines on the non-compliance list reflect the industry's ability to meet environmental standards.

Average Rating 2.8

What We Heard From You

- How meaningful is this indicator if there is a lack of enforcement? Perhaps non-compliance as a ratio of enforcement could be reported.
- An alternative indicator would be mineral resource supply compared with amount used and needed in the Lower Fraser Basin.
- Non-compliance should be considered in all sector and for all major landowners or occupants and not just focus on mining.
- Non-compliance can mean many things. Too general and vague.
- Percentage of land base with seriously damaged ecosystems, or with unrecoverable ecosystems with be a better indicator.



18 Energy Consumption

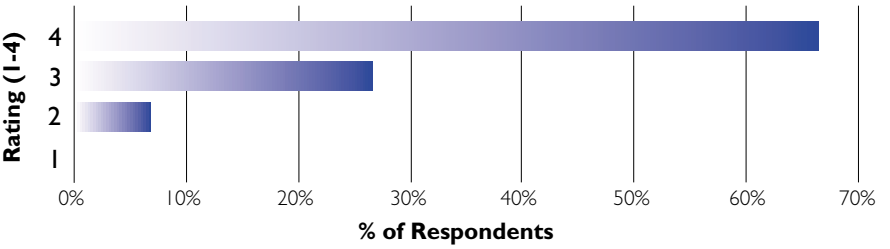
The Data…
Total per capita energy consumption and total alternate energy consumption.

What It Tells Us About Sustainability… Changes in total and alternate energy consumption reflect shifts in energy use decisions and changes to energy use efficiency and patterns.

Average Rating 3.6

What We Heard From You

- The use of alternative energy consumption through indicates an increased awareness of sustainability and the capacity to put it into practice.
- This doesn't examine our efforts to promote alternative energy use.
- Need to separate commercial/industrial from domestic so industry changes don't skew the trends. Need to be careful in defining renewable sources.
- The size of our ecological footprint would be a more effective indicator.
- Very important indicators with the shift to "dirtier" fuels because of high gas prices.
- Energy use should be further broken down by source and costs.
- Very important to industry that cost-effective alternative energy be explored and implemented (e.g., wind, solar etc.).
- Very important especially as fossil fuel reserves diminish and gas prices rise.
- Can conversion to alternative energy use be measured and monitored?



19 Air Quality: Fine Particulates

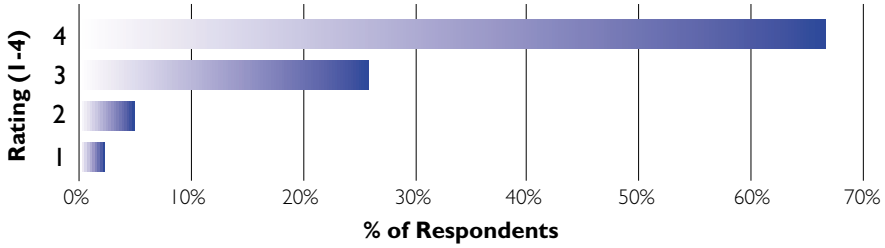
The Data …
The number of 24-hour periods when fine particulate matter (less than 10 microns in size - PM_{10}) measurements exceed maximum acceptable levels.

What It Tells Us About Sustainability… Changes in PM_{10} levels reflect our ability to make lifestyle and policy choices that reduce air pollution.

Average Rating 3.6

What We Heard From You

- Particle levels in our water or air can alert us to health hazards and are early warning signs.
- Why not a broader index such as the number of people exposed to unhealthy air each year?
- Useful in restricted areas of the Basin (e.g., Lower Fraser Valley, Prince George) but not useful for all regions.
- Vehicle use would be a more useful indicator.
- Draw the links between air quality and human health.
- Also need a measure of other air contaminants (i.e., gases).
- $PM_{2.5}$ is becoming the standard as far as health monitoring is concerned.



20 Air Quality: Greenhouse Gases

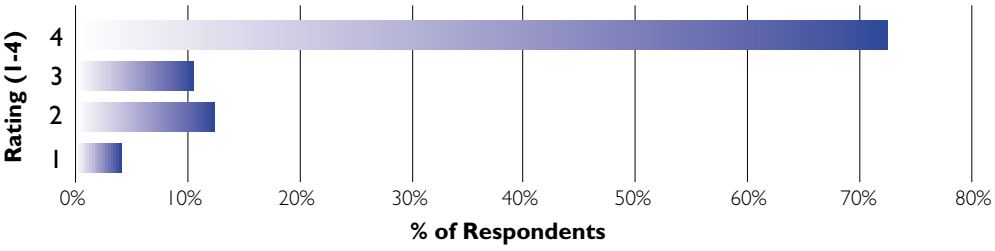
The Data…
Total greenhouse gas emissions, expressed as megatonnes of CO_2 equivalents.

What It Tells Us About Sustainability… Changes in greenhouse gas emissions reflect our ability to reduce activities that produce greenhouse gases and avoid or minimize concerns associated with expected changes in global climate.

Average Rating 3.5

What We Heard From You

- This indicator does not address natural release of carbon and doesn't tell you where carbon is coming from (i.e., sources).
- Requires a target so we can relate the current state of our air to some goals.
- Basin emissions of greenhouse gases should be compared to global emission trends.
- An ongoing problem that can and must be addressed at every level of decision making - including you and me.
- Must be broken down by various emission sources (e.g., vehicles, industry etc).
- Using total emissions will result in a constantly rising indicator even if per capita rates are constant or even falling as population grows. This may be discouraging as it won't show any progress and encourage more people to take action.
- Per capita greenhouse gas emissions is a better indicator.



21 Income Rates

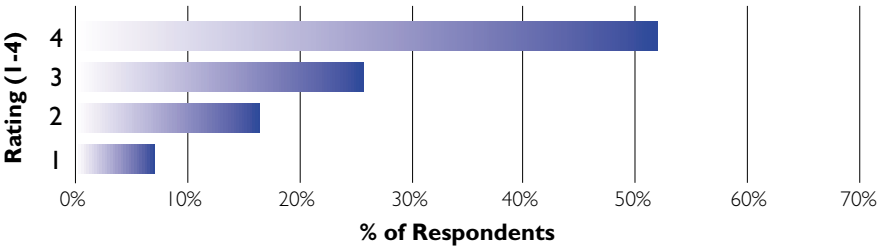
The Data …
The average income level of Basin residents.

What It Tells Us About Sustainability… Income rates provide insight into a wide range of variables related to an individual's ability to meet their needs and care for others. Income rates reflect the overall economy of the Basin and contribute to the health and social well being of communities.

Average Rating 3.1

What We Heard From You

- Low income affects many other things: crime rates, health, access to education, stress, food and make this a good indicator.
- Redistribution and equity are the first priorities, in my mind, of a sustainable community or country.
- Low Income Cut Off (LICO) should be properly displayed in terms of the population distribution throughout the Basin.
- There is little agreement among economists on what constitutes true low income. It varies by region and other factors.
- A quality of life issue that may have little to do with sustainability in the broad social context.
- Poverty rates are important but does this one work well as an indicator over time?
- Income distribution equity index.
- Possibly more meaningful to measure the range between incomes.
- Problem of time lag? If data are collected every five years, the problem may be well underway before remedial action can be effective.
- Need regional data or GVRD stats will overshadow regions Median incomes will not reveal the bipolar nature of income distribution.



22 Crime Rates

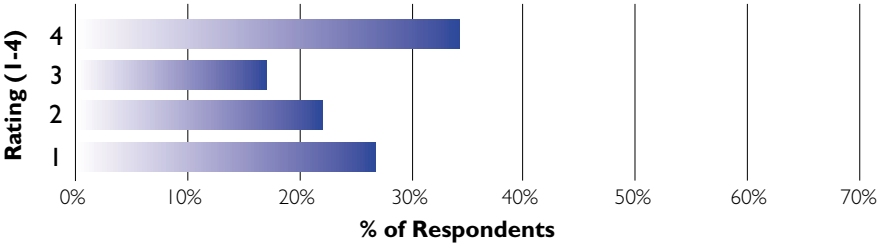
The Data …
The rate of crime (by type of crime) for regions within the Basin.

What It Tells Us About Sustainability… Crime rates provide an indication of feelings of community security and well being and also reflect socio-economic conditions.

Average Rating 2.7

What We Heard From You

- Some sort of composite satisfaction index that speaks more to sustainability would be better.
- Structural determinants of crime more important than crime itself.
- Crime is a bad thing, but it may not be directly related to sustainability.
- If used, you should try to get regional data or average of rates so GVRD data does not overshadow significant changes in regions.



23 Morbidity Rates

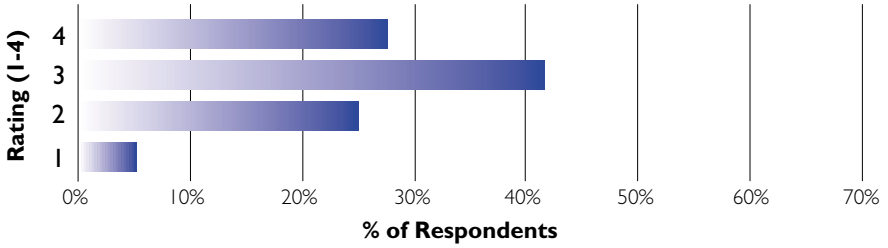
The Data …
The number and percentage of Basin residents that suffer from serious disease, by type of disease.

What It Tells Us About Sustainability… Changes in the morbidity rate reflect our ability to control and prevent disease among our residents and our overall well being.

Average Rating 2.9

What We Heard From You

- Sickness attributable to pollution or other specific environmental issues.
- Access to healthcare is more relevant.
- Definition & data source need clarification.
- Cause of disease or death may be more informative than the rate of disease or incidence death.
- Needs analysis by age-sex distribution.
- Would have to be broken down to the community level to give useful information.
- Life expectancy and infant morality are important contextual information that should be provided.



24 Mortality Rates

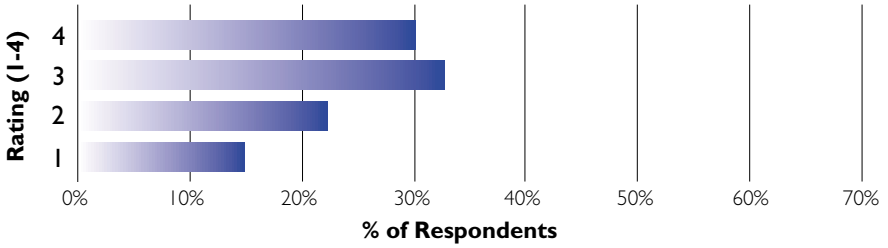
The Data…
The age and natural causes of death, and life expectancy for residents within the Basin.

What It Tells Us About Sustainability… Changes in mortality rate reflect our ability to meet the health needs of our residents and our overall social well being.

Average Rating 2.8

What We Heard From You

- Immigration and emigration confound a clear analysis of this indicator.
- Deaths attributable to pollution or other specific environmental concerns.
- Effectiveness of this indicator is questionable due to long time frame required for study to decipher the root cause of changes in mortality rate.
- Access to healthcare is more relevant.
- It would seem logical that this will be highly impacted by demographic make-up.
- There is a need analysis by age-sex distribution.
- Would have to be broken down to the community level to give information of interest.
- Contextual or supporting information should include: infant mortality; life expectancy; age of death; and cause of death.



25 Volunteerism

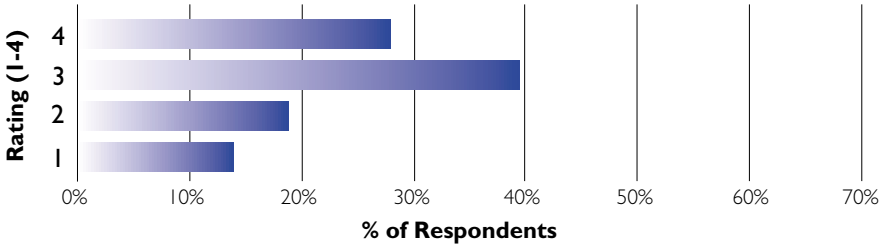
The Data …
The number and percentage of basin residents that are members in voluntary of community organizations.

What It Tells Us About Sustainability… Changes in the rate of volunteerism reflect our sense of community and responsibility toward sustainability.

Average Rating 2.7

What We Heard From You

- Volunteering is directly correlated with how much money a person has. This isn't a great indicator of sustainability.
- A better indicator is the extent to which people participate in their communities or feel like they have influence in their communities.
- Much of the work being done by volunteers is being done as a result of an absence of similar effort that could or should be undertaken by government or private sector.
- Is the volunteer effort really focused on sustainability issues (e.g., social justice, environmental issues)?
- This does give a proxy of willingness or commitment to contribute to community building.
- A concern is with the gap in data collection (i.e., every 3 years).



26 Charitable Donations

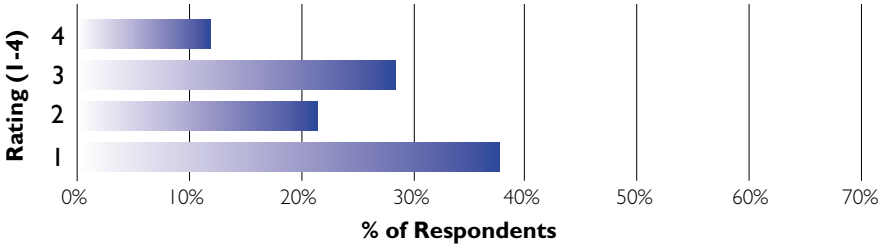
The Data…
The number of Basin residents contributing to charitable organisations (by type of charity) and the amount they donate.

What It Tells Us About Sustainability… Changes in the rate and amount of charitable donations reflect our willingness to assist those who are in need and invest in the well being of our communities.

Average Rating 2.1

What We Heard From You

- Too many confounding factors make interpretation of this indicator difficult (e.g., higher rates of giving could reflect government failure or be a measurement of 'hard times').
- A better indicator would be an index of citizens taking collective action around issues of shared concern.
- Level of donation in this economic climate describes better a person's ability to give.
- Level of donation doesn't tell us where money is going or whether the community benefits directly.



27 Aboriginal Employment

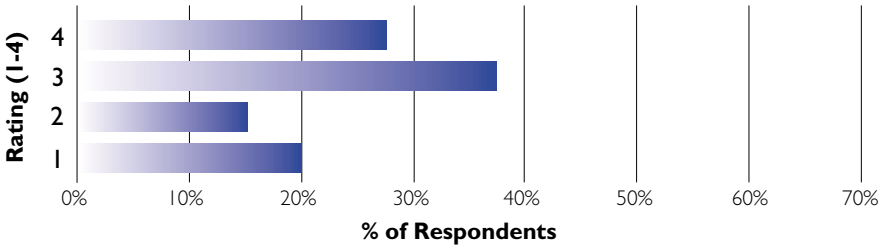
The Data ...
The rate of employment among aboriginal men and women of different ages - for those both living on and off reserve.

What It Tells Us About Sustainability… Changes in the rate of aboriginal employment provide a measure of the economic capacity of aboriginal communities and aboriginal people.

Average Rating 2.8

What We Heard From You

- Need to look at employment and income sorted by all group - not just aboriginal people.
- Need to look at employment and income sorted by region.
- Labour force participation rates would be a better indicator to consider.



28 Concentration of Population

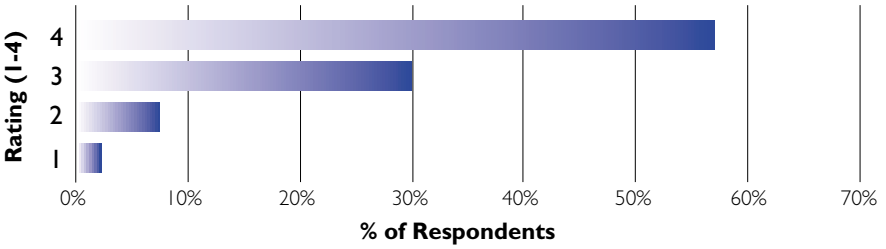
The Data...
The number of people living within and outside Growth Concentration Areas (GCA) where GCAs are designated in the Basin.

What It Tells Us About Sustainability... Changes in population inside and outside growth concentration area (GCA) reflect progress towards achieving a compact metropolitan region.

Average Rating 3.3

What We Heard From You

- As long as the data tell us how many people are inside and outside the GCA, including changes over time. Are migrants moving into the GCA or to areas outside it?
- This is interesting to the GVRD, but is more a public finance issue than a measure of how sustainable the region is.
- Good for urban areas, but not helpful indicator for rural areas.
- Distance between home and work would be a better indicator.



29 Concentration of Employment

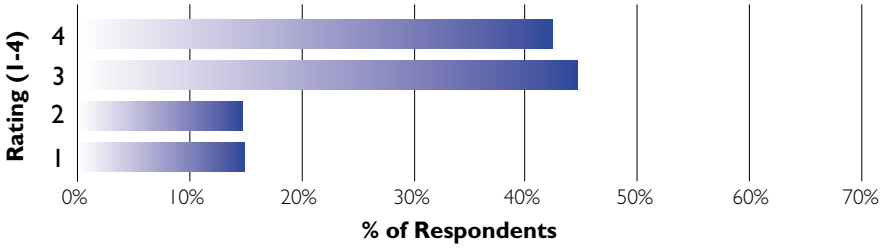
The Data …
The number of jobs located within and outside Growth Concentration Areas (GCA) where GCAs are designated in the Basin.

What It Tells Us About Sustainability… Changes in employment inside and outside growth concentration area (GCA) reflect progress towards achieving a compact metropolitan region.

Average Rating 3.0

What We Heard From You

- Separate employment by sector as opposed to total employment. There are probably some types of employment that are more desirable in rural/urban regions.
- How do you get data outside the GCA? Data are only applicable to areas with a designated GCA (i.e., not rural areas).
- How sensitive and responsive are data if they are collected only every five years?"
- Describe area of GCA's in the Basin.
- Many northern residents would say that employment growth in their communities is also necessary for Basin sustainability.



30 Public Transit Ridership

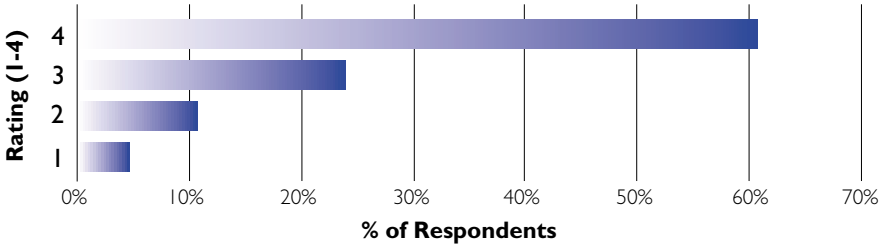
The Data…
The number of transit trips per person per year.

What It Tells Us About Sustainability… Changes in transit ridership reflect transportation choices made by urban populations and are directly linked to urban environmental integrity and economic efficiency.

Average Rating 3.2

What We Heard From You

- Need a measure of the availability of public transit across many population centers and rural areas.
- Reflects quality of transit more than an individual's stewardship ethic.
- Percentage of total trips made using public transit.
- Not clear that this provides any more information than vehicle ownership in terms of impact on sustainability.
- Public transit not available in some areas so this is an urban focused indicator.
- In rural areas, increased transit use coincides with depressed economic conditions.
- Public transit mode share would be a better indicator or public transit cost versus population served.



31 Vehicle Ownership

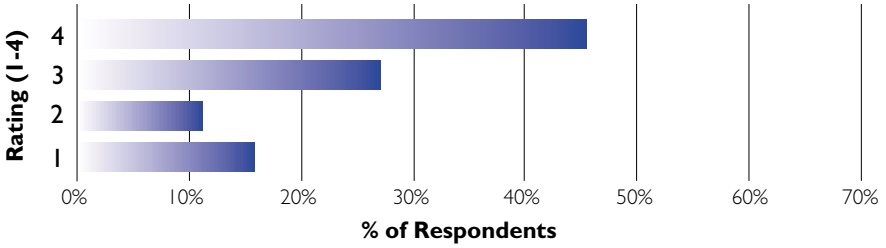
The Data …
The number and size of vehicles owned per household.

What It Tells Us About Sustainability… Changes in the number and size of vehicles reflect our dependence on cars, energy consumption and progress towards more sustainable mobility patterns.

Average Rating 2.9

What We Heard From You

- Reflects income and is somewhat confounded in that economic improvement will likely increase vehicle ownership.
- Patterns of usage such as km per occupancy rates, peak hour traffic congestion, associated medical or societal costs are better indicators.
- Break out the indicators by size of engines.
- Vehicle kilometers travelled by automobiles or per capita automobile use (i.e., km/vehicle/ or vehicle per person) would be preferred.
- Single occupancy automobile rush trips as a percentage of total, or conversely, transit/foot/cycle trips as percentage of total should be included.
- Vehicle ownership may not be as important as type of ownership (e.g., age, size, type).
- Compare the number of households with vehicles and number of people per household.



32 Investment in Public Assets

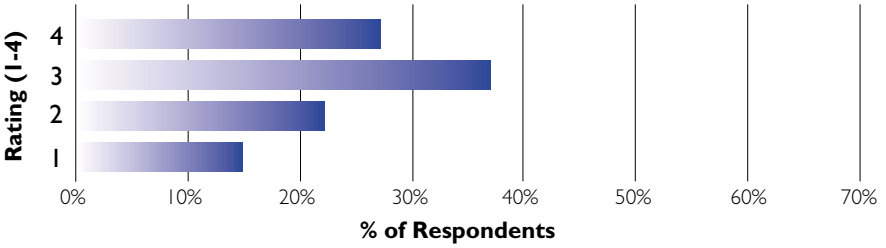
The Data…
The total amount of investment in public assets compared to GDP.

What It Tells Us About Sustainability… Changes in investment in public assets in relation to GDP reflect investments in infrastructure, including those required for sustainable communities.

Average Rating 2.7

What We Heard From You

- Assumes (falsely) that expensive public projects are all good.
- Track percent of population served by a defined list of services.
- While used in other jurisdictions (i.e., UK) there are problems with data collection in BC.
- The important thing is wise investment, not total investment.
- How does one differentiate between spending on roads and spending on transit? One is more sustainable than the other.
- I would consider types of infrastructure investments made (e.g., transit vs. roads, storm water utilities vs. new wastewater treatment facilities). Some may reflect sustainability others may not.



33 Economic Diversity

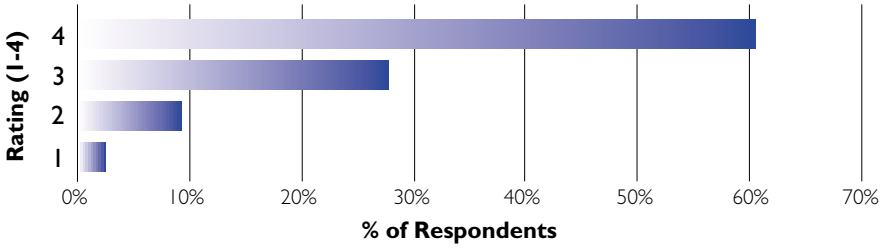
The Data …
An index of the diversity of local economies that includes the number of industries driving local economies.

What It Tells Us About Sustainability… Changes in the Economic Diversity Index reflect the diversity and stability of regional economies.

Average Rating 3.4

What We Heard From You

- This indicator is not very accessible to the public. It needs to be clearly articulated so everyone can understand it.
- Diverse systems are stable systems and this is particularly relevant for many of the Basin's resource towns.
- Economic diversity is generally more sustainable, but the percentage employed in sustainable industry should also be tracked.
- Must be broken down regionally and at community level if it is to be meaningful. GVRD is very diverse but the rest of the Basin is not.
- Contextual information should be provided such as key "driver" industries by SIC (Standard Industry Class).



34 Jobs by Sector

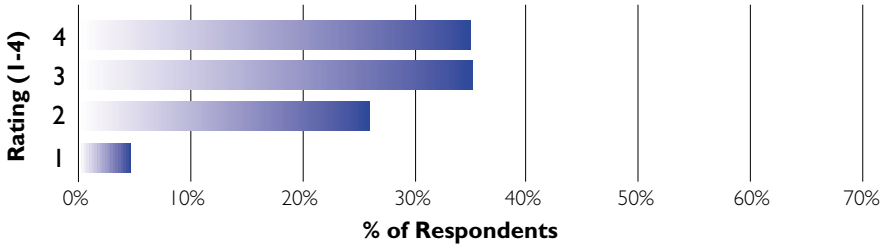
The Data…
The number of jobs by sector.

What It Tells Us About Sustainability… Changes in the number of jobs by sector reflect economic activity in each sector and diversification of employment.

Average Rating 3.0

What We Heard From You

- Not as clear an indicator as economic diversity index.
- Unemployment rate among those who want to work would be a better indicator. Availability of training/retraining for those who want to work but don't have valued skills, etc.
- Percent of the population who do not have the work they would like to have.
- Percent of the population who work in low paying jobs and do not have access to benefits, etc.
- Include distribution of jobs/sector across Basin communities perhaps as a secondary indicator.
- Percentage employed in sustainable or environmentally friendly industries.
- Would help to illustrate changes in the service sector, financial/high tech sector and "information industries" as opposed to traditional resource industries.



35 Interim Agreements with First Nations

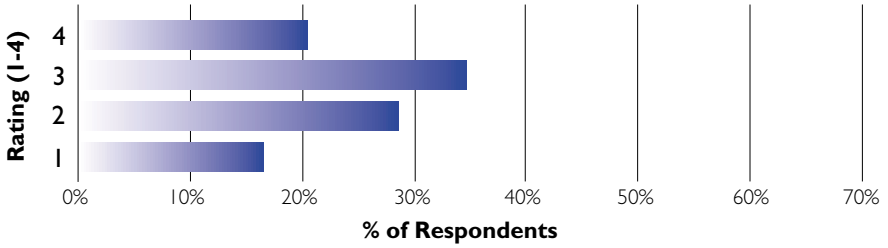
The Data …
The number and type of interim agreements made between First Nations and the provincial government.

What It Tells Us About Sustainability… Changes in the number of interim agreements with First Nations reflect the level of interaction and collaboration between First Nations and the provincial government.

Average Rating 2.6

What We Heard From You

- Not a long-term sustainability measure and may not be helpful.
- The capacity of First Nations communities will make them real contributors to sustainability, not sure that this is an effective measure.
- Survey of how many local and regional governments have a working relationship with bands in the area would be a better indicator.
- It depends on what the agreements say, and how they are implemented, not the fact that they exist.
- While this is tremendously important, I don't agree that it is an indicator of sustainability over time. It is a very contemporary process. It tells us little about future of economic, social and environmental sustainability.
- After a number of these have been signed there may be less need for more and the indicator may become meaningless.
- Number of joint ventures with First Nations would be a better indicator.



36 First Nations in the BCTC Process

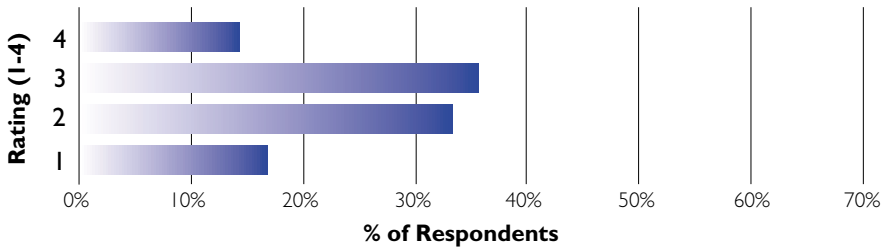
The Data…
The number of First Nations involved in the BC Treaty Consultation Process and their progress reaching various stages toward signed final agreements.

What It Tells Us About Sustainability… Changes in the number of First Nations in the BCTC and the progress they make within the process reflect progress toward signed treaties and self-reliance among First Nations.

Average Rating 2.4

What We Heard From You

- This indicates whether there is a process in place, but does not evaluate the results of the process.
- Other processes are at work and are not reflected in the indicator.
- First Nations participation in the economy and joint venture activity between aboriginal and non-aboriginal communities are better indicators.
- Do not agree that the BCTC process indicates a more constructive relationship between First Nations and non-aboriginal governments.
- Percentage of First Nations people who feel that they have influence in their communities and that their communities have influence over larger social decisions.
- This indicator would not be an accurate reflection of progress toward sustainability because it would not include First Nations working outside the treaty process.
- May not be the most pressing issue in relation to the social environmental integrity of the Basin.
- Difficulties surrounding the BCTC process, changes in attitudes on both sides influence how this indicator might be received.



37 Voter Turnout

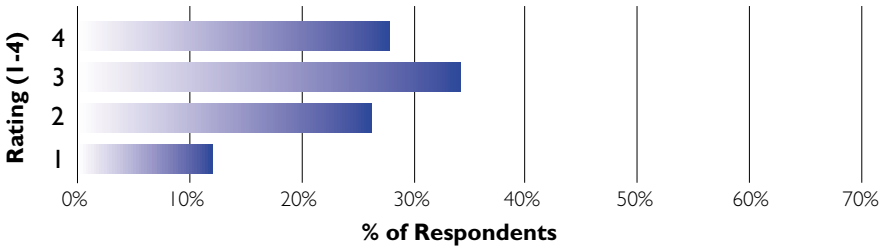
The Data …
The number of registered voters casting ballots (in municipal, provincial and/or federal elections).

What It Tells Us About Sustainability… Changes in voter turnout reflect the commitment of the community to the political system and relate to the involvement of the population in decision making.

Average Rating 2.7

What We Heard From You

- Many confounding factors (quality of candidates, etc.) make this difficult to understand the significance of trends.
- This indicator does not reflect anything beyond economic status. Those who are privileged vote to maintain their authority.
- Voting is a very low-level participation indicator. In some cases low voter turnout might well indicate people are turning to alternative ways of influencing decision-making.
- A better indicator would consider more components of civic participation (e.g., CSO board membership, presentations to government, demonstrations etc.).
- This doesn't well address the degree of access people feel around decision making. More over, some communities are very participatory yet don't vote on all issues if they feel they've been heard in other ways.
- Better indicators would be number of people involved in council meetings, public hearings, number of advocacy groups operating and their attendances.
- This may only reflect dissatisfaction with the political system or political candidates not decision-making capacity.



38 Legislators' Reflection of Population

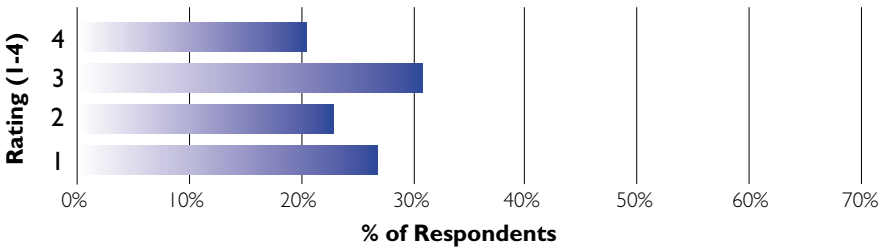
The Data…
comparison of diversity (e.g., ethnicity, age and gender) among members of the Legislative Assembly compared to the diversity among the general population.

What It Tells Us About Sustainability… Changes in government representation to better reflect the population relate to social equity and fairness.

Average Rating 2.4

What We Heard From You

- Makes unclear but potentially harmful assumptions about the nature of representative governments and racism.
- I would support a more reliable way to actually assess the degree to which an elected official reflects the population on issues of importance but this is a very crude measure.
- This indicator does not really tell you much about anything.
- Perhaps the linkage here is weaker than expressed in the indicator. Having an elected official doesn't ensure a strong voice in government (i.e., diverse government is not necessarily good (or bad) government.)
- The emphasis should be on good (i.e., leadership) qualifications not on representing various interest groups or sectors of society.



39 Access to Information

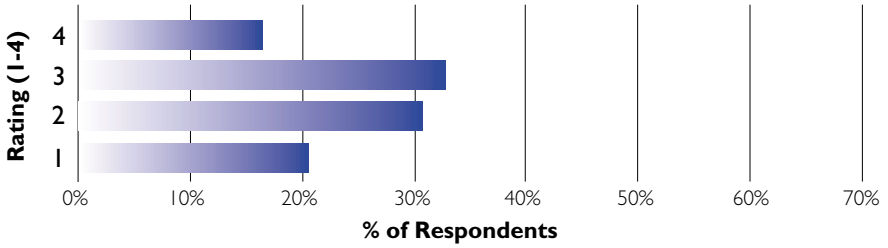
The Data …
The number of reviews carried out by the Office of the Information and Privacy Commissioner regarding denied access to information and the manner in which those reviews were resolved.

What It Tells Us About Sustainability… Changes in the number of reviews regarding denied access to information and the percentage of those reviews resolved through mediation reflect openness and cooperation in governance and decision-making systems.

Average Rating 2.5

What We Heard From You

- More might indicate bad government, less might be growing apathy in the general public. Difficult to interpret this indicator.
- Unstable data availability as legislation influencing access to information may change.
- Access is the critical issue. The proposed indicator is one, though not very convincing, measure of access (e.g., to information, decision-making processes, etc.).
- Government transparency index (i.e., percentage of generated materials that are publicly accessible) would be a better indicator.
- Like the Ombudsman indicator (#40), is very much an indicator of a select group of people and their activities.



40 Complaints to the Ombudsman

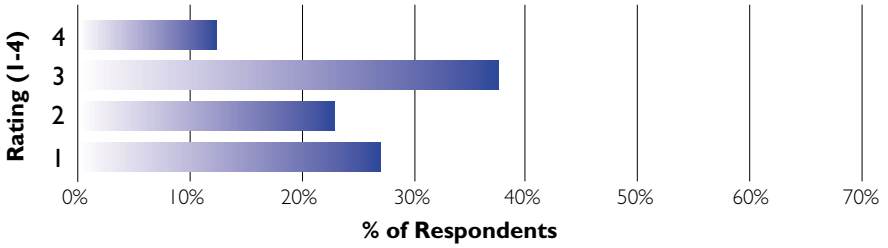
The Data…
The number of complaints to the Ombudsman's office and the manner in which they were addressed..

What It Tells Us About Sustainability… Changes in the number of complaints to the Ombudsman and the percentage of resolved issues reflect the ability of public bodies to serve Basin residents.

Average Rating 2.4

What We Heard From You

- This is a complex indicator and the trends will not be easily understood or interpreted.
- Good government or public apathy could both mean fewer complaints.
- Survey the number of people who know there is an Ombudsman and the ways in which this office could help citizens
- The number of complaints might be a function of how aware people are that the office exists. Fewer complaints might not mean fewer grievances.
- Believe that this measure has a bias that is based on knowledge and education level of possible complainants. It does not reflect level of aggrieved individuals.
- Hampered by self-selection. Many people would never take the steps of going to through the process. As such, the indicator measures squeaky wheels more than issues resolved.
- This is important in a democracy. Mediation should be the preferred way of dispute resolution.



4 Towards a State of Sustainability Report for the Basin

Based on the feedback provided by workshop participants and respondents to the FBC indicators workshops and surveys, a number of messages have emerged that will be used to guide the FBC's future work in developing and utilizing sustainability indicators.

The most important message is that there is support for developing a set of sustainability indicators for the Basin and there appears to be broad support for some of the draft indicators identified in the *Workbook*. In addition, a number of suggestions have been put forward regarding other indicators that should be considered for inclusion in a set of sustainability indicators. Other key messages include:

Audience

- The indicators must appeal to and be accessible by two audiences (i.e., government and non-government decision-makers and the general public).

Balance

- There is a need to strengthen the economic and institutional perspectives of sustainability to ensure a balanced set of indicators.
- The final set of indicators must consider both rural and urban perspectives on sustainability.

Organizational Framework

- There is a need for a clearer organizational framework to assist in presenting the indicators.

Number of Indicators

- There is support for fewer, rather than more, "primary" indicators.
- There is support for "secondary" indicators that would help explain trends related to primary indicators.

Reporting Frequency

- There is support for reporting on the indicators every 3 years with reporting on specific indicators undertaken on an "as-needed" basis.

Interpretation and Targets

- There is support for targets to accompany indicators and some degree of interpretation of indicator trends.
- Multiple perspectives should be involved in the interpretation of indicator trends.
- The process of interpreting data should be collaborative and encourage the partnerships required to address sustainability challenges.

Facilitating Action

- The reporting of indicators should lead to collaborative action in addressing key sustainability challenges.
- The FBC should be prepared to play a role in facilitating action where trends suggest significant sustainability challenges exist.

Based on the direction received from FBC partners and Basin residents, steps will be taken to identify a set of sustainability indicators and initiate the process of developing a state of sustainability report for the Basin. Updates on progress being made in identifying indicators and developing a state of sustainability report for the Basin will be provided in FBC newsletters or by visiting the FBC website (www.fraserbasin.bc.ca).

Appendix A: Sustainability Indicators Workbook Survey Questions

Fraser Basin Council

Sustainability Indicators Workbook

Indicator Selection Survey

Fax Back to (604) 605-3459

Suite 1257 - 409 Granville Street

Vancouver, BC V6C 1T2

This Survey can be completed

on-line at www.fraserbasin.bc.ca

Please respond by March 31, 2001

This survey corresponds to information provided in the Sustainability Indicators for the Fraser Basin Workbook. Your views about the 40 indicators described in the workbook will assist in selection of the final indicators. Thank you for your input!

Prizes! Those who complete the entire survey are eligible for a draw to win special "Fraser Basin" prizes. If you would like to enter the draw, please provide your:

Name: _____

Phone number: _____

e-mail address: _____

All survey responses will remain confidential.

Purpose of Indicators

As a partner in sustainability, how would you use the results of the sustainability indicator monitoring (please explain your role if relevant)?

The Indicators

For each of the 40 sustainability indicators shown in the workbook, please answer the following questions.

	Questions: Will this indicator result in useful information for tracking and enhancing sustainability over time?	Would you suggest an alternative indicator to the one presented?
1 Waste Diverted from Landfills 	**1a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**1b)** Yes No please circle If so, please describe it:
2 Water Consumption 	**2a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**2b)** Yes No please circle If so, please describe it:
3 Adoption of Regional Growth Strategy 	**3a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**3b)** Yes No please circle If so, please describe it:
4 Newspaper Circulation Rates 	**4a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**4b)** Yes No please circle If so, please describe it:
5 Internet Access 	**5a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**5b)** Yes No please circle If so, please describe it:

	Questions:	
	Will this indicator result in useful information for tracking and enhancing sustainability over time?	Would you suggest an alternative indicator to the one presented?
6 Level of Education Attained	**6a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**6b)** Yes No please circle If so, please describe it:
7 Water Quality Index Direction 2 : Caring for Ecosystems	**7a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**7b)** Yes No please circle If so, please describe it:
8 Status of Fraser River Sockeye	**8a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**8b)** Yes No please circle If so, please describe it:
9 Salmonid Stock at Risk	**9a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**9b)** Yes No please circle If so, please describe it:
10 Number of Species at Risk	**10a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**10b)** Yes No please circle If so, please describe it:

Questions:

	Will this indicator result in useful information for tracking and enhancing sustainability over time?	Would you suggest an alternative indicator to the one presented?
11 Toxic Contaminants in Wildlife	**11a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**11b)** Yes No please circle If so, please describe it:
12 Age & Species Composition of Forests	**12a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**12b)** Yes No please circle If so, please describe it:
13 Sustainable Farm Practices	**13a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**13b)** Yes No please circle If so, please describe it:
14 Access to Parks	**14a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**14b)** Yes No please circle If so, please describe it:
15 Park Use	**15a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**15b)** Yes No please circle If so, please describe it:

Questions:

	Will this indicator result in useful information for tracking and enhancing sustainability over time?	Would you suggest an alternative indicator to the one presented?
16 Contaminated Mine Sites	**16a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**16b)** Yes No please circle If so, please describe it:
17 Non-Compliance in Mining Sector	**17a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**17b)** Yes No please circle If so, please describe it:
18 Alternative and Total Energy Consumption	**18a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**18b)** Yes No please circle If so, please describe it:
19 Fine Particulate Levels (pm10)	**19a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**19b)** Yes No please circle If so, please describe it:
20 Greenhouse Gas Emissions	**20a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**20b)** Yes No please circle If so, please describe it:

Questions:

Will this indicator result in useful information for tracking and enhancing sustainability over time?

Would you suggest an alternative indicator to the one presented?

21 Income Rates Families/ Households

Direction 3 : Strengthening Communities

21a) 1 2 3 4
(Not at all) please circle (Completely)
Comments: _____

21b) Yes No please circle
If so, please describe it: _____

22 Crime Rates

22a) 1 2 3 4
(Not at all) please circle (Completely)
Comments: _____

22b) Yes No please circle
If so, please describe it: _____

23 Morbidity Rates

23a) 1 2 3 4
(Not at all) please circle (Completely)
Comments: _____

23b) Yes No please circle
If so, please describe it: _____

24 Mortality Rates

24a) 1 2 3 4
(Not at all) please circle (Completely)
Comments: _____

24b) Yes No please circle
If so, please describe it: _____

25 Volunteerism Rates

25a) 1 2 3 4
(Not at all) please circle (Completely)
Comments: _____

25b) Yes No please circle
If so, please describe it: _____

Questions:

Will this indicator result in useful information for tracking and enhancing sustainability over time?

Would you suggest an alternative indicator to the one presented?

26 Charitable Donations

26a) 1 2 3 4
(Not at all) please circle (Completely)

Comments:

26b) Yes No please circle

If so, please describe it:

27 Aboriginal Employment Rates

27a) 1 2 3 4
(Not at all) please circle (Completely)

Comments:

27b) Yes No please circle

If so, please describe it:

28 Population in Growth Concentration Areas

28a) 1 2 3 4
(Not at all) please circle (Completely)

Comments:

28b) Yes No please circle

If so, please describe it:

29 Employment in Growth Concentration Areas

29a) 1 2 3 4
(Not at all) please circle (Completely)

Comments:

29b) Yes No please circle

If so, please describe it:

30 Public Transit Ridership

30a) 1 2 3 4
(Not at all) please circle (Completely)

Comments:

30b) Yes No please circle

If so, please describe it:

Questions:

Will this indicator result in useful information for tracking and enhancing sustainability over time?

Would you suggest an alternative indicator to the one presented?

31 Vehicle Ownership

31a) 1 2 3 4
(Not at all) please circle (Completely)
Comments:

31b) Yes No please circle
If so, please describe it:

32 Investment in Public Assets

32a) 1 2 3 4
(Not at all) please circle (Completely)
Comments:

32b) Yes No please circle
If so, please describe it:

33 Economic Diversity Index

33a) 1 2 3 4
(Not at all) please circle (Completely)
Comments:

33b) Yes No please circle
If so, please describe it:

34 Jobs by Sector

34a) 1 2 3 4
(Not at all) please circle (Completely)
Comments:

34b) Yes No please circle
If so, please describe it:

35 Interim Agreements with First Nations

Direction 4 : Improving Decision Making

35a) 1 2 3 4
(Not at all) please circle (Completely)
Comments:

35b) Yes No please circle
If so, please describe it:

	Questions:	
	Will this indicator result in useful information for tracking and enhancing sustainability over time?	Would you suggest an alternative indicator to the one presented?
36 First Nations in the BCTC Process	**36a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**36b)** Yes No please circle If so, please describe it:
37 Voter Turnout Rates	**37a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**37b)** Yes No please circle If so, please describe it:
38 Elected Officials' Reflection of Population	**38a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**38b)** Yes No please circle If so, please describe it:
39 Complaints to the Ombudsman	**39a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**39b)** Yes No please circle If so, please describe it:
40 Access to Information Reviews	**40a)** 1 2 3 4 (Not at all) please circle (Completely) Comments:	**40b)** Yes No please circle If so, please describe it:

Final Questions

1 Do you think this set of indicators covers the bases by addressing the Charter for Sustainability's four strategic directions (understanding sustainability, caring for ecosystems, strengthening communities, and improving decision making)?

Yes No please circle

Comments:

2 What information is not being collected today that could be helpful in assessing progress toward sustainability?

3 In total, how many indicators should we track over time?

- ◯ 5 - 10
- ◯ 11 - 20
- ◯ 21 - 30
- ◯ more than 30
- ◯ other (please specify) _____

4 How often should the Fraser Basin Council monitor and report on the full set of indicators?

- ◯ every year
- ◯ every 3 years
- ◯ every 5 years
- ◯ other (please specify) _____

5 In which of the five Fraser Basin regions do you live?

- ◯ Upper Fraser
- ◯ Cariboo-Chilcotin
- ◯ Thompson
- ◯ Greater Vancouver, Squamish, Pemberton
- ◯ Fraser Valley
- ◯ Not sure (please indicate community) _____
- ◯ Outside Basin (please indicate community) _____

6 Please indicate your affiliation (check one)

- ◯ Government:
  - ◯ Federal
  - ◯ Provincial
  - ◯ Regional
  - ◯ Local
  - ◯ First Nations
- ◯ Non- Government Organization:
  - ◯ Environment
  - ◯ Other _____
- ◯ Private Sector
- ◯ Academic/Student
- ◯ Basin Resident
- ◯ Other (please indicate) _____

Thank You for Your Input

Appendix B. Alternative Indicators

Access/use of social services
Agricultural Land Reserve (area)
Area of certified forest lands (FSC, CSA, FSI)
Areas of land under dispute
Bankruptcies
Certification of industries
Change in size of industrial/commercial sector
Commercial/residential vacancy rates
Complaints to Forest Practices Board
Contamination of mammals
Corporate stewardship
Cost of industrial land
Credit loading/personal debt
Distance between home and work
Diversification of the forest sector
Drop out rate
Dwelling size
Ecological diversity (urban)
Emergency room visits
Employment rates
Endangered habitat
Farm income
Flood hazard
Food imported/exported
Forest certification
Fraser river shoreline recovered
Gap between rich and poor (e.g., GINI coefficient)
Geographic areas with no/limited care
Ground water protection
Habitat protected, recovered or restored for marine, land
Health problems related to air and water quality
Housing costs
House prices
Human health index (based on morbidity)
Illness linked to waterborne disease
Immigration/emigration fates
Income fates
ISO 14000 certification
Keystone species in ecosystems
Kilometres of stream protected
Kilometres/SA of roads
Levels of foreign investment
Library usage
Literacy rates
LRMP zoning/implementation reports
Management of agriculture waste (manure)
Measurement of habitat by type
Social Services, number of cases/ cases per capita
MOU's/joint ventures with First Nations

Non-compliance with environmental regulations
Number of bankruptcies
Number of beds available for substance abuse treatment
Number of care beds for youth, treatment
Number of contaminated sites
Number of farms
Number of livestock
Number of lost creeks
OGMAs – Old Growth Management Areas
Particulate matter 2.5 (air quality)
Percentage of income spent on food
Protection of environmentally sensitive areas
Quality of life measures
Real income (i.e., income relative to cost of living
Sales of pesticides
Successful prosecutions of violations of environmental regulation
Total waste reduction
Tourism
Toxic waste disposal
Trucking versus rail use
Types and quantities of fuel being used by sector
Waste disposal
Wealth on community levels
Wilderness areas