

# **Regional District of North Okanagan Regional Growth Strategy Monitoring and Evaluation Program: Report On Program Development and Initial Results**

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SEPTEMBER 19, 2013







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## 1 INTRODUCTION

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In June 2012, the Regional District of North Okanagan ("RDNO"), with the support of EcoPlan International ("EPI") and the University of British Columbia (UBC), began work on a program to monitor and evaluate the recently adopted North Okanagan Regional Growth Strategy (referred to here simply as the Strategy or "RGS"). The monitoring and evaluation program includes both quantitative and qualitative indicators selected to track the implementation of the RGS and assess its effect on North Okanagan residents' quality of life. This report discusses the process used to develop the monitoring and evaluation program, the implementation steps taken to date, and initial monitoring results.



## 1.1 The North Okanagan Regional Growth Strategy

### 1.1.1 OVERVIEW

On September 21, 2011, the RDNO adopted the North Okanagan Regional Growth Strategy. The RGS was developed over 4 years by the RDNO in partnership with the region's member municipalities and in coordination with other government agencies, stakeholder groups and the general public. The purpose of the RGS is to guide the region's growth and direct development in such a way as to achieve the needs and objectives of the region and the member municipalities.

The vision of the RGS includes promoting:

- Sustainable communities
- Protection of rural and agricultural lands
- Broad and sustainable employment and business opportunities
- Diverse housing choices
- Complete and vibrant neighbourhoods
- Protection of the region's natural environment
- Sustainable use and protection of the region's resources
- Financial sustainability and good regional governance

The RGS is fundamentally cooperative. It was developed in partnership with the region's municipalities and it has their support. This support is necessary for the successful implementation of the strategy.

The context within which the RGS is implemented will change with time and the RGS will need to respond to these changes. The RGS may need to be revised and modified to ensure that it is meeting its stated goals. The monitoring and evaluation program is an important part of evaluating the impacts of the RGS on the North Okanagan and its municipalities and how these impacts change over time. The monitoring and evaluation program will help ensure that the RGS stays relevant over time and that the region and municipalities are taking effective action to accomplish the strategy's goals.

### 1.1.2 POLICY AREAS

The RGS is organized around nine policy areas that represent issues of importance to the RDNO now and in the future. These are:



Urban containment and rural protection



Transportation and infrastructure



Agriculture and food systems



Housing



Water stewardship



Governance and service delivery



Environment and natural lands



Energy and emissions



Economic development

To reflect and inform the RGS, the monitoring and evaluation program was organized around the nine policy areas.

## 2 MONITORING AND EVALUATION PROGRAM



The RGS Monitoring and Evaluation Program is a requirement of the Local Government Act, s. 869 (1). The RGS also has an implementation provision regarding a citizen survey as an element of RGS monitoring. The program is intended to provide information to help guide local and regional policy decisions and investments, increase our understanding of complex regional issues, engage the public in regional planning and improvement, and promote transparency by measuring the progress of the RGS and providing a mechanism for public involvement and feedback. The Monitoring and Evaluation Program is comprehensive in approach and, once the program is fully developed, has been designed to be efficient, relevant and cost-effective to maintain.

The RGS Monitoring and Evaluation Program was developed through a participatory approach that has consisted of input from various levels of government, planners throughout the North Okanagan and elected officials through a series of workshops. The goal of this approach is to identify indicators that are both reflective of



RGS policy and have synergies and applicability across jurisdictional boundaries and scales. Four workshops were undertaken in fall/winter 2012: three workshops with senior planners and one with the Intergovernmental Advisory Committee (including representatives from senior government, the Interior Health Authority, school districts and local government administrators). The results of these workshops were used to compile the original “wish list” of indicators.

The Monitoring and Evaluation Program consists of the following indicator types:

**Priority Indicators:** Effective quantitative indicators (e.g. Statistics Canada Census data) of RGS goal progress that can be easily measured and/or are already monitored. The indicators evaluate objectives within the nine policy areas of the RGS and many indicators are proxy measures, designed to reflect progress towards more than one of the RGS goals. These measures form part of the annual “RGS Implementation: Measuring Progress” report and have local, regional and, if possible, provincial applicability.

**Secondary (or Complementary) Indicators:** Quantitative indicators that are important measures of RGS progress and reflect the priorities of communities that may be more complex to measure. These indicators would be included within the 5-Year RGS “State of the Region” Report.

**Quality of Life Indicators:** These are qualitative indicators that reflect the perception of North Okanagan residents on both regional livability and RGS progress. These indicators measure residents’ perspectives on RGS progress and identify areas that may need more attention.

The monitoring program focuses on measuring the impact of the RGS. Indicators were thus selected to measure outcomes rather than actions and compliance. However, in a few cases, indicators use actions as proxies for outcomes, given data limitations.

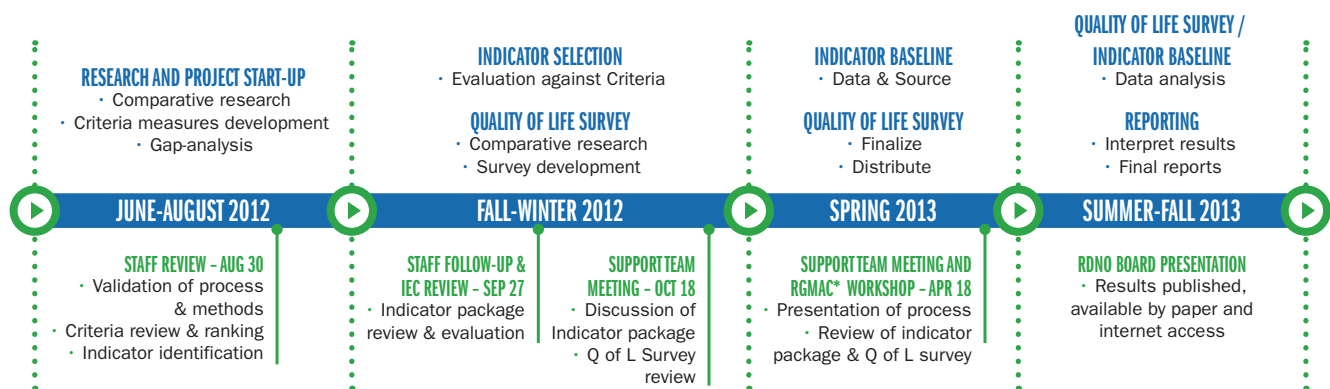
Although other local governments and regional districts have undertaken quality of life surveys, there has not been a quality life survey that has been linked to a RGS policy framework. Many RGS monitoring programs rely on a set of key quantitative indicators that are associated with broad strategic directions. Citizen response through a carefully developed quality of life survey complements the quantitative indicator data and provides us with a more developed understanding of how the RGS is influencing life in the North Okanagan and whether it is having a positive impact on residents' quality of life.



Photo: Ernest Hawkes, flickr.com

The priority and secondary indicators will provide a quantitative assessment of the effectiveness of the RGS. The perspectives of residents provide greater context to that information, provide additional data in areas where quantitative indicators lack reliable data, and identify areas of public concern that can be considered during RGS initiative identification and prioritization, RGS evaluation and review, and in communication strategies.

The process and methods used to select indicators as well as develop and implement the Quality of Life Survey are illustrated in Figure 1. Indicators were selected to provide high-quality information while using primarily existing data sources. The process is described in more detail in the following sections.



**Figure 1.** Process and methods to select quantitative monitoring indicators and develop and distribute the Quality of Life Survey, including key dates and meetings. \* RGMAC = Regional Growth Management Advisory Committee.

## 2.1 Quantitative Monitoring and Evaluation Program

### 2.1.1 QUANTITATIVE MONITORING AND EVALUATION PROGRAM DEVELOPMENT

The quantitative monitoring program evaluates progress in each of the RGS's nine policy areas:



Urban containment and rural protection



Transportation and infrastructure



Agriculture and food systems



Housing



Water stewardship



Governance and service delivery



Environment and natural lands



Energy and emissions



Economic development

Each policy area includes up to four priority indicators that are monitored annually and up to four secondary indicators that are monitored every 5 years.

The process to develop the quantitative monitoring indicators included the following steps:

- Comparative research on monitoring and evaluation programs of regional growth strategies in other regions
- Developing criteria to measure the quality of the indicators
- Drafting an initial list of indicators
- Conducting a gap analysis of the initial list of indicators
- Evaluating the quality of the indicators according to the evaluation criteria
- Final indicator evaluation by RDNO staff and municipal planners
- Indicator finalization and baseline data gathering

#### 2.1.1.1 COMPARATIVE RESEARCH OVERVIEW

In order to benefit from monitoring and evaluation experience in other regions, the research team conducted comparative research on monitoring and evaluation programs of regional growth strategies in other regions in British Columbia ("BC"), Canada, and internationally. Although the most relevant comparisons would be with other regional districts in BC, the research was necessarily much broader. Well-developed monitoring and evaluation programs, in particular those linked to growth strategies, have not been common for very long and few of them include documented reviews of the monitoring programs and indicators. In many cases, the monitoring programs have yet to complete a full five-year cycle and program review; in some cases the programs were left incomplete and never underwent evaluation. The research team thus surveyed programs in the following regions:

##### *In BC:*

- Capital Regional District
- Regional District of Nanaimo

- Okanagan-Similkameen Regional District (South Okanagan RGS)
- Regional District of Central Okanagan
- Comox Valley Regional District
- Metro Vancouver

#### *In Canada:*

- Lower Athabasca Region, Alberta
- Peel Region, Ontario
- Region of Durham, Ontario
- Niagara Region, Ontario

#### *In the US:*

- Puget Sound Region, Washington
- Clark County, Washington
- Vancouver, Washington
- King County, Washington
- Snohomish County, Washington
- Spokane County, Washington
- Portland metropolitan area, Oregon
- San Diego Association of Government, California
- Howard County, Maryland
- Lincoln/Lancaster County, Nebraska
- Ft. Collins, Colorado



*Figure 2. Comparative research on monitoring and evaluation programs of regional growth strategies in other regions in British Columbia, Canada, and in the United States.*

### **Lessons Learned**

The lessons learned from the experiences of other regional districts come from periodic reviews of monitoring and evaluation programs or from changes made to the program indicators and accompanying commentary and rationale. In some cases the reviews were conducted by advisory councils or planning staff and in some cases independent third parties conducted reviews. The following is a short list of general lessons learned:

- ✓ Fewer, higher quality indicators are preferred to many, lower quality indicators.
- ✓ Without a central authority, collection and maintenance of regional level data can be a challenge to coordinate.
- ✓ Changes to municipal or other relevant boundaries can significantly affect indicators.
- ✓ Delays in planning and development can mean indicators risk measuring policies of previous plans, rather than implementation of new policies.
- ✓ Include benchmarks and targets where possible.



### 2.1.1.2 EVALUATING AND SELECTING THE INDICATORS

#### Multi-criteria Decision Analysis

Developing and selecting a list of indicators that successfully gather data on relevant and useful aspects of the RGS's nine policy areas required developing clear evaluation criteria, and bringing together a range of stakeholders with varied interests and experience. In order to explicitly and transparently consider how well indicators might provide insight into the performance of the RGS, the research team used multi-criteria decision analysis (MCDA) to select monitoring indicators.

MCDA is a system of decision-making that explicitly considers relevant criteria and uses weighting techniques to support the evaluation process. On a day-to-day basis, individuals usually make decisions largely based on poorly constructed, limited and unclear criteria or basic intuition. However, when making complex decisions involving multiple interests, objectives and various stakeholders, MCDA leads to a higher-quality evaluation process and supports outcomes which are more easily understandable to all involved.

#### Developing Indicator Evaluation Criteria

Criteria with which to evaluate each indicator were developed through research on monitoring programs and successful indicators. The evaluation criteria were reviewed and ranked by RDNO staff. The criteria are further discussed below.

#### The Initial Indicator List

The initial list of indicators was created using a combination of requested “wish list” indicators from RDNO and municipal planners, RGS technical working groups, as well as information obtained from the comparative research described above. The planners requested indicators that would be particularly useful in future local and regional planning decisions. The comparative research suggested a series of indicators that had been successfully used by other regions and that addressed the policy areas of the RGS.

#### Gap Analysis

Once the initial list had been created, the research team conducted a gap analysis to ensure that the indicators addressed all policy areas and stated goals of the RGS. The analysis uncovered some gaps in the indicator list and additional indicators were developed to fill the gaps. All of the goals of the RGS were addressed by at least one indicator in the list.



### **Indicator Evaluation**

The evaluation process allowed technical support committees and working groups to consider and screen for effective indicators, keeping the final indicator list manageable. The research team evaluated each selected indicator against a set of seven criteria:

1. Indicator is a good proxy for a broader trend it represents.
2. Indicator is easy to explain and understand.
3. Indicator is actionable (informs policy or action evaluation and change).
4. Reliable data exist for the indicator, which may be obtained at reasonable effort and/or cost on a regular basis.
5. Change in the indicator is measurable and meaningful over a reasonable timeframe.
6. Indicator is consistent with North Okanagan RGS vision, policy and guiding principles.
7. Where appropriate, the indicator is consistent with or comparable to broader (provincial) or local (community) indicators.

Measures were developed for the criteria and then were subjected to a series of weighting sessions with local planners and stakeholders. Some criteria were considered to be more important in determining the value of indicators than other criteria. For example, it was more important that an indicator have reliable data and be a good proxy, than be consistent with broader or local indicators. Those indicators that did not meet the majority of the criteria, or any one of the essential criteria, were eliminated from the list and added to the “cull list”, with rationale for their elimination. The cull list was an important feature as stakeholders and partners in local government requested indicators as it allows RDNO staff to reference criteria that did not make the final list and provide a rationale for exclusion.

The research team then conducted a second gap analysis of the revised indicator list, to ensure that the selected indicators addressed all policy areas and stated goals of the RGS.

### **Finalizing the Indicator List**

To finalize the indicator list, the research team worked with local government planners to eliminate non-essential indicators and indicators that did not have sufficient available data. The research team also received input from the Intergovernmental Advisory Committee on the final indicator list. Using the final list, indicators were ranked according to priority: high-priority indicators are to be evaluated annually and lower-priority indicators are to be evaluated every 5 years. There are no more than four high-priority indicators per RGS policy area.

The monitoring and evaluation program is designed to collect both historical, baseline (2011) and future data. While historical data are not always available for some indicators, all indicators should have baseline (2011) data.

### 2.1.1.3 IMPACT OF CHANGES TO THE LONG-FORM CENSUS

Much of the data in the RGS monitoring and evaluation program will come from Statistics Canada's Census. However, in 2010, the Government of Canada decided to make changes to the Census that may affect the quality of the data it provides. These changes took effect in the 2011 Census year. Changes to the Census had an important impact on the RDNO monitoring project, both in terms of quality of anticipated data and the need for collecting data through self-generated surveys (see Quality of Life Survey in s. 2.2).

The principal change to the Census is the replacement of the mandatory long-form census, with a combination of a mandatory short-form census and voluntary National Household Survey (NHS), the latter covering anything left out of the former. The concern is that the data from the voluntary source (the NHS) may be either:

- Skewed toward a certain group more likely to participate (leaving out the less-educated, new immigrant populations, higher-income brackets, etc.); or
- Insufficiently large to provide reliable data for smaller geographic areas (small towns, neighbourhood-level, rural populations, census tracts, etc.).

The effects of the changes are already being felt in the North Okanagan. For example, the non-response rates to the NHS in some areas of the North Okanagan were too high to report the data given privacy and anonymity concerns, or the data collected were reported but were considered to be unreliable.

The complete data set from the 2011 NHS has yet to be released and Statistics Canada has yet to report fully on the effects of the changes on data quality. However, the policy areas most affected by the changes are likely to be the following, especially as they correlate to areas of much geographic specificity (i.e. small towns and neighbourhoods):

- Housing (dwelling type, income vs rent/mortgage)
- Transportation (mode share for commuting, working in CSD of residence)
- Economic development (work force mobility, employment status, jobs by industry, jobs by occupation)
- Population in-migration and out-migration

Information now collected in the Mandatory Short-form Census includes:

- |                                 |                           |
|---------------------------------|---------------------------|
| • Age                           | • Household relationships |
| • Sex                           | • Mother tongue           |
| • Marital and common law status | • Farmer status           |

Mandatory Short-form Census:

<http://www.gazette.gc.ca/rp-pr/p1/2010/2010-08-21/html/order-decret-eng.html>



Information previously collected by the mandatory long-form census questionnaire will be collected as part of the new voluntary National Household Survey (NHS). These include:

- Demography
- Activity limitations
- Citizenship and immigration
- Language, and language of work
- Ethnic origin, population group
- Aboriginal group, Registered treaty Indian status, Member of a First Nation/Indian band
- Religion
- Mobility
- Place of birth of parents
- Education
- Labour market activities
- Place of work
- Work activity
- Child care and support payments
- Housing
- Income

Although Statistics Canada itself offers little speculation about the effects of the changes, the following statement suggests an awareness of the potential impacts:

“Following the 2006 Census release schedule, the first NHS data would be released early in 2013. Statistics Canada will try to follow this schedule. However, this is a new survey so there is some uncertainty as to the length of time required to certify the data prior to release.”

National Household Survey and above quotation:

<http://www.statcan.gc.ca/survey-enquete/household-menages/5178-eng.htm>

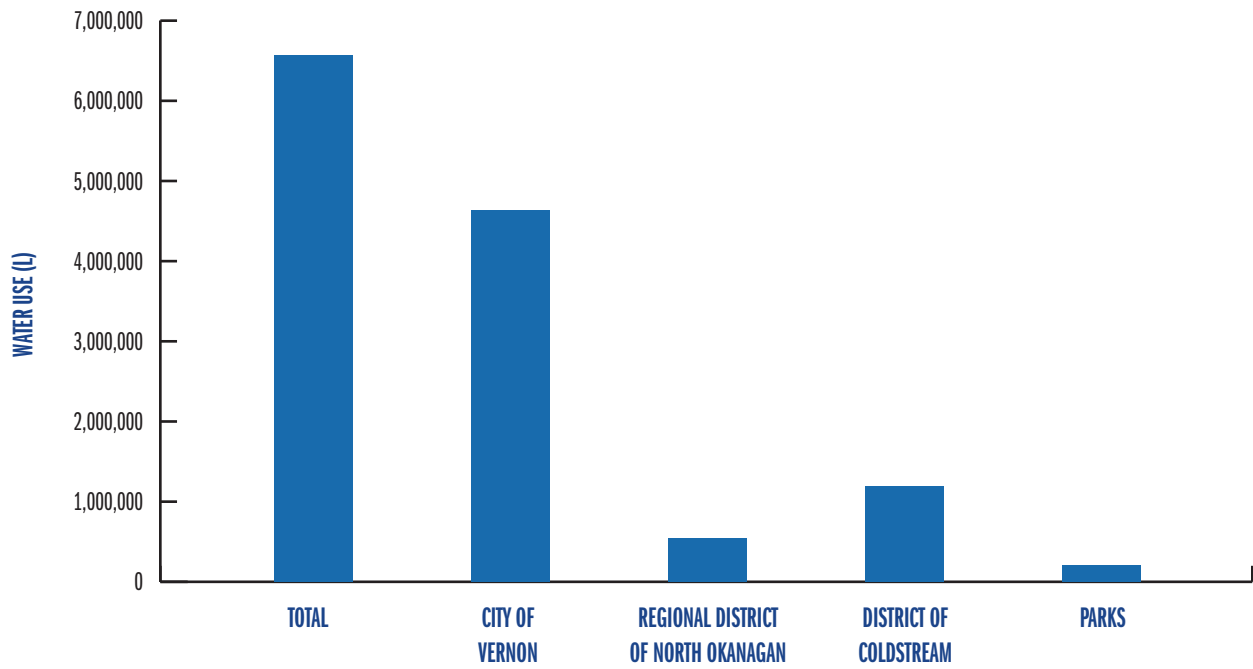
### **2.1.2 PRELIMINARY QUANTITATIVE MONITORING RESULTS**

The research team, through the evaluation process, finalized a list of 48 indicators (21 Primary and 27 Secondary). Data are currently available for 67% of both the Primary and Secondary indicators. The RDNO expects to fill these gaps as more census data becomes available and will continue to work on gathering the remaining data and establishing new data sources before the next RGS review in 2016.

Several indicators lack historical data and it is thus currently difficult to establish trends for many of the monitoring indicators. This is to be expected at the beginning of a monitoring program and it will be resolved as data are collected over the next three years.

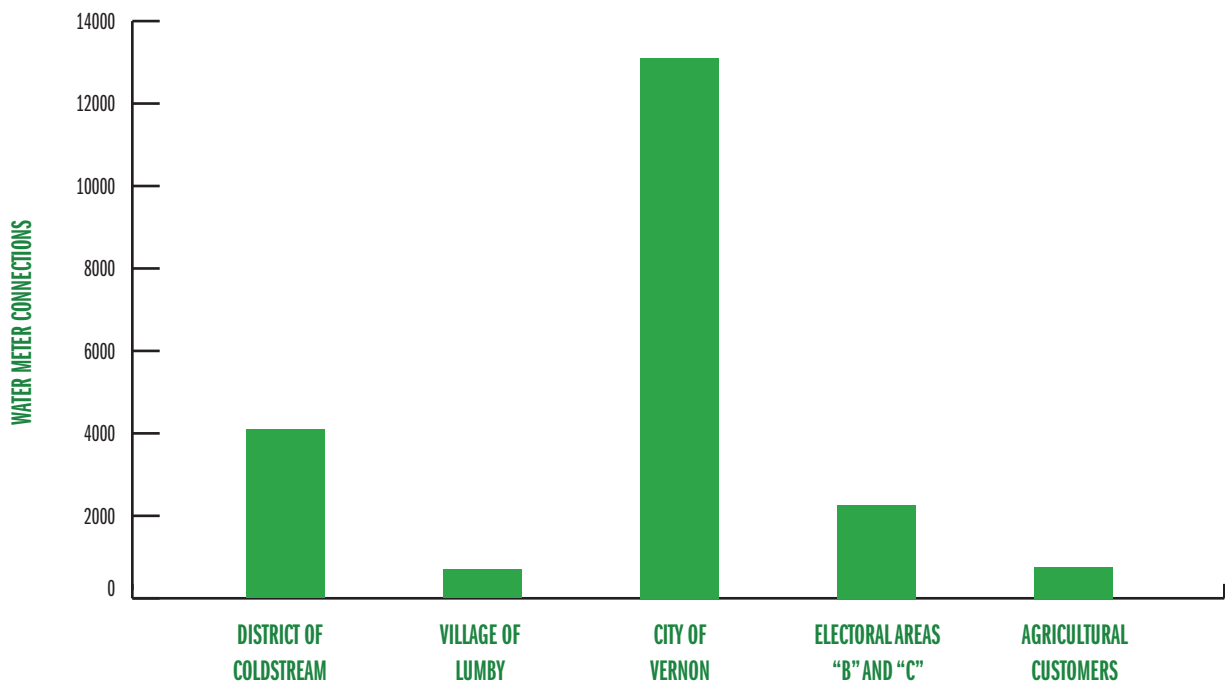
The results of the quantitative monitoring and evaluation program are too extensive to be included in this report. We have included the results of selected indicators in the Water Stewardship policy area as examples.

Water use in the RDNO (see Figure 3) reflects population sizes, with the two largest communities using the most water (Vernon and Coldstream). Water use in Vernon accounts for about 70% of the total water use in the RDNO. Water conservation efforts should focus on urban areas such as Vernon, where total water use is high, and on smaller areas that have higher per capita water use (e.g. Coldstream).



**Figure 3.** Total water use (in litres) by community, region, and parks.

Areas with the highest water use also have the highest number of water meters installed (see Figure 4). Water meter connections are most common in the City of Vernon and the District of Coldstream. The RDNO may wish to consider focusing its efforts in increasing water meter coverage in smaller communities and rural areas, particularly for agricultural customers.



**Figure 4.** Water meter connection by community and agricultural customers.

Please see the RDNO's RGS Monitoring and Evaluation Report for a full discussion of monitoring results.

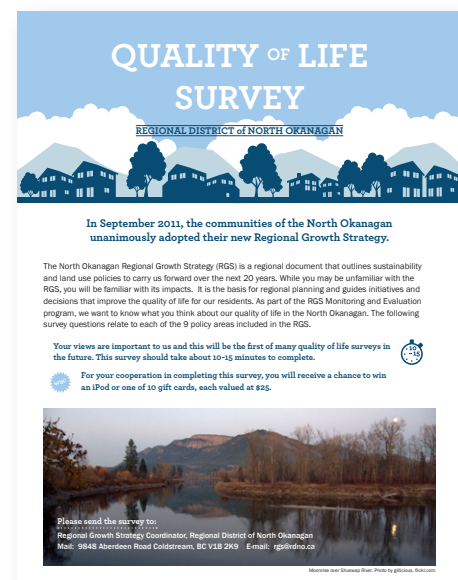
## 2.2 Quality of Life Survey

The RDNO Quality of Life Survey is designed to give North Okanagan residents the opportunity to evaluate their quality of life, provide the RDNO with feedback on how the RGS is affecting their quality of life generally and in various policy areas, and fill gaps in the quantitative indicators created by the change in Census data collection. The Quality of Life Survey questions are linked to specific policy areas and quantitative indicators in many cases, ensuring that the survey results can be used to inform policy.

The qualitative data provided by the Quality of Life Survey are complementary to the quantitative data collected by the quantitative monitoring indicators; together they will provide a clearer picture of the quality of life in the North Okanagan and how the region is changing as it grows and develops in the future.

The goals of the Quality of Life Survey include:

- Determine residents' opinions about their quality of life in the North Okanagan
- Assess residents' satisfaction with local and regional government's efforts to achieve regional planning goals
- Measure public opinion on the way in which local and regional governments are managing growth in the North Okanagan
- Establish a baseline from which to measure change in key indicators
- Add community context to the quantitative monitoring program indicators
- Assist in identifying priority action areas for RGS implementation and issues and opportunities during the next review of the RGS
- Provide opportunities for input into other planning projects related to the RGS policy areas



### 2.2.1 COMPARATIVE SURVEY RESEARCH OVERVIEW

The process to develop the Quality of Life Survey began with research on local, national, and international programs that seek to evaluate citizens' quality of life. Some programs were survey-based while others rely on quantitative data to evaluate quality of life.

The research team researched the following quality of life programs and surveys:

- Previous EPI quality of life surveys
- Whistler Community Life Survey
- Social Capital Benchmark Survey (Harvard University)
- Fernie Quality of Life Survey



- Equality, Security and Community Survey (Social Sciences and Humanities Research Council of Canada)
- RDOS Citizen Survey 2012 (Regional District of Okanagan-Similkameen)
- Human Resources and Skills Development Canada (HRSDC) Indicators of Well-being in Canada
- Natural Resources Canada: The Atlas of Canada Quality of Life Maps
- Canadian Index of Well-being (University of Waterloo)

In addition, the research team conducted a review of the academic literature on quality of life and surveys to assess it. Based on this research and discussions with RDNO planners, the research team developed a list of topics that should be addressed when evaluating quality of life. This list included general quality of life topics and topics related to each policy area of the RGS and how it affects citizens' quality of life.

## 2.2.2 DEVELOPING AND REFINING SURVEY QUESTIONS

The initial list of questions was developed to address the identified quality of life topics generally, and as they relate to the policy areas of the RGS. These policy areas are:



Urban containment and rural protection



Transportation and infrastructure



Agriculture and food systems



Housing



Water stewardship



Governance and service delivery



Environment and natural lands



Energy and emissions



Economic development

Questions were designed to gather baseline data on current quality of life conditions in the North Okanagan and gauge public opinion of the importance of the various policy areas to residents' quality of life. The survey asked a diverse range of questions about quality of life, community character, and regional growth policies.

Public perception is a valuable tool for local and regional governments to measure progress on the implementation of regional plans, projects and programs. Improving residents' quality of life is an underlying principle of the RGS and Official Community Plans. The survey is one of many pieces of information collected by the Regional District to evaluate the effectiveness of the RGS and to identify regional priorities.

The survey questions were refined through review by, and discussions with, experts on survey development at the University of British Columbia (UBC). Questions were reviewed for clarity, simplicity, and relevance to quality of life and the policy areas of the RGS.

The survey was then tested or trialed by 15 UBC students, staff, and faculty, between the ages of 24 and 63, and by about 100 people in the North Okanagan. In the North Okanagan, people who tested the survey and provided feedback were members of the Seniors' Action Network, Vision North Okanagan, families of City of Vernon staff, a high school class, and the Okanagan College Student Council. The purpose of testing the survey was to ensure the clarity and comprehensibility of the questions and survey format. The research team made minor amendments to the wording and format of the survey in response to the feedback provided by survey testers.

### 2.2.3 SURVEY FORMAT

The Quality of Life Survey was relatively short (8 pages), and was available as a paper survey and online. While there are several benefits to delivering a survey online (e.g controlling response formats and ease of data entry), the paper surveys were particularly necessary in the North Okanagan where about 10% of the population does not have regular or high-speed access to the internet. This problem is most pronounced in the region's smaller communities and rural areas . For example, high-speed access is not available in most of the Electoral Areas and in the Township of Spallumcheen. Delivering the survey in both paper and online formats allowed us to increase the survey coverage across communities and socio-economic groups, and helped increase the survey response rate.

### 2.2.4 IMPLEMENTING THE SURVEY

The Quality of Life Survey was available to North Okanagan residents in both paper and online formats. The survey ran from early May to early June 2013. A total of 2,500 paper surveys were distributed, as well as 10,000 postcards, providing coverage of 1 in 3 households in the North Okanagan. Print, radio and social media coverage were undertaken throughout the region to promote the survey.



Due to the rural nature of most of the region, an older population than the B.C. average, and limited coverage of high-speed internet service, partnerships and events were essential to maximizing participation and ensuring a more representative sample. The Regional District of North Okanagan involved many organizations, governments and individuals in the promotion of this survey, including the City of Armstrong, District of Coldstream, City of Enderby, Village of Lumby, Township of Spallumcheen, City of Vernon, all the North Okanagan branches of the Okanagan Regional Library, the Social Planning Council of North Okanagan, the North Okanagan Naturalist Club, Whitevalley Community Resource Centre, Seniors' Action Network, North Okanagan Naturalist Club, School District #22 and # 83, Interior Health Authority, neighborhood associations and many others.

Of special note for efforts within the region were:

1. The Salvation Army who handed out surveys with food baskets and included an extra food item with every returned survey;
2. Community Futures of the North Okanagan who requested that all participants within their employment programs fill out a survey; and
3. Clarence Fulton Secondary School (Vernon) Global Education class, and their teacher Murray Sasges. Global Education took the survey to high school classes throughout School District #22 and facilitated the completion of over 350 surveys by North Okanagan youth.

Regional District staff also attended several events to promote the survey, including Bike to Work Week events, the Vernon and Armstrong Farmers' Markets and the Mayors' and Planners' Breakfast (held by the Greater Vernon Chamber of Commerce).

The result of Regional District staff and regional partners' efforts to promote the survey resulted in one of the highest response rates that the Regional District has experienced with any survey.

The RDNO plans to undertake the Quality of Life Survey prior to the 2016 RGS Review and every 5 years thereafter.

## 2.2.5 SURVEY RESULTS

The RDNO received a total of 1,412 surveys, including 803 online surveys and 609 paper surveys. Forty-four online and eighteen paper surveys were subsequently excluded because they were mostly incomplete or because the respondents did not give serious answers. Paper surveys were more likely to contain missing data due to errors made by respondents when answering questions. However, the research team was able to include the majority of the paper survey responses in our analysis.

The online survey responses were more complete due to the requirement to answer all mandatory questions before progressing to the next section. The discarded online surveys did not include usable information due to some early software issues that were resolved.

Paper surveys were more popular with organizations, groups and individuals that were:

- a. socioeconomically disadvantaged;
- b. uncomfortable with using computers;
- c. using the survey within a group setting (i.e. high school class or community training session); and
- d. did not have access to high-speed internet.

The results of this survey are particularly interesting, given that a large proportion of the respondents were under the age of 18 (see Figure 5), likely due to paper survey distribution in high schools. The analysis of the Quality of Life Survey thus includes a discussion of the influence of age on quality of life and details the responses of the younger age groups in relevant policy areas. Although age was not always a relevant factor in survey responses, an analysis of the responses of younger age groups gives us an idea of what issues are particularly important to future generations..

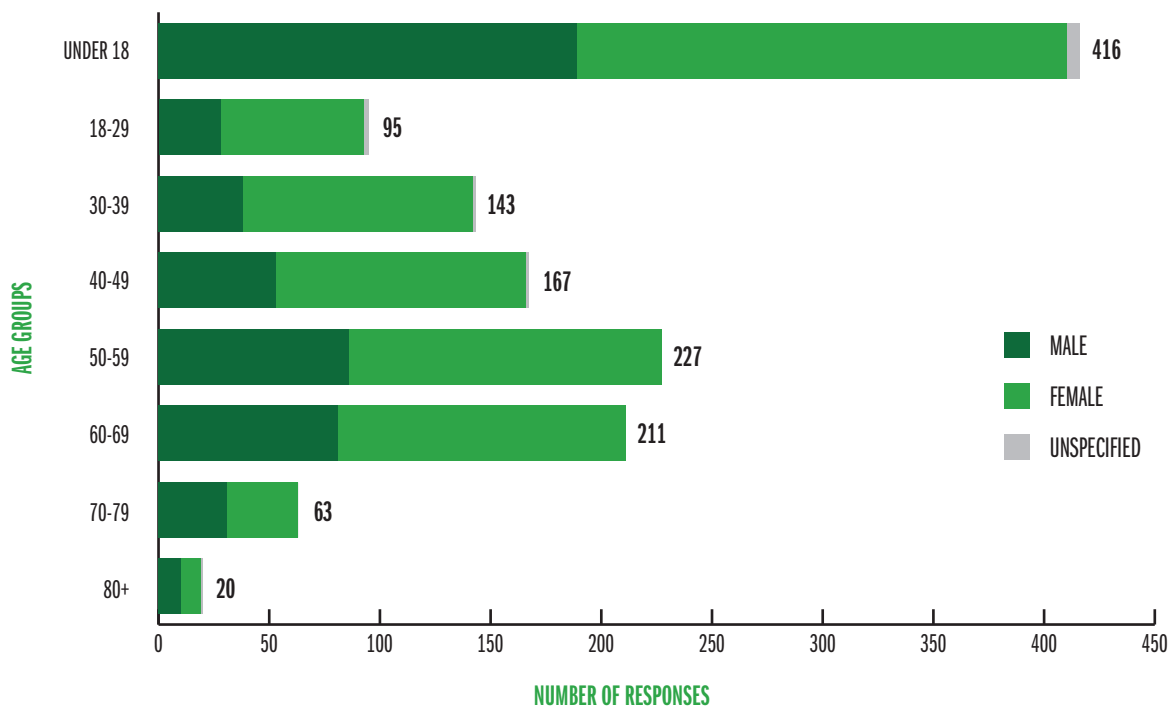


Figure 5. Number of survey responses by age and gender.



Many survey questions did not show an age effect and of those that did, this effect was not always due to the responses of younger age groups. However, younger respondents showed some interesting differences from older age groups. For example, younger respondents were more likely to rate their general quality of life lower than older respondents (see Figure 6,  $F = 11.1$ ,  $p = 0.000$ ), although it should be noted that this effect is fairly small and all age groups rated their general quality of life between good and very good, on average.

Given the high number of respondents in the Under 18 group, compared to other age groups, analyses of age were not weighted according to sample size. This, in combination with large sample sizes for all age groups, eliminated potential bias due to the large Under 18 sample size.

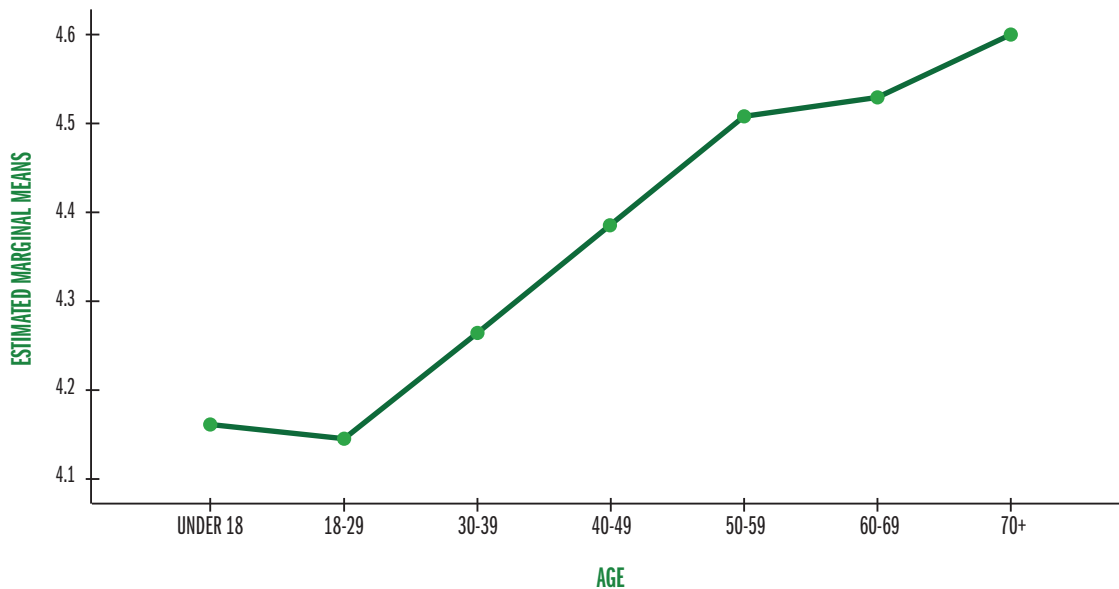


Figure 6. Estimated marginal means of the effect of age on quality of life in the North Okanagan ( $F = 11.1$ ,  $p = 0.000$ ).

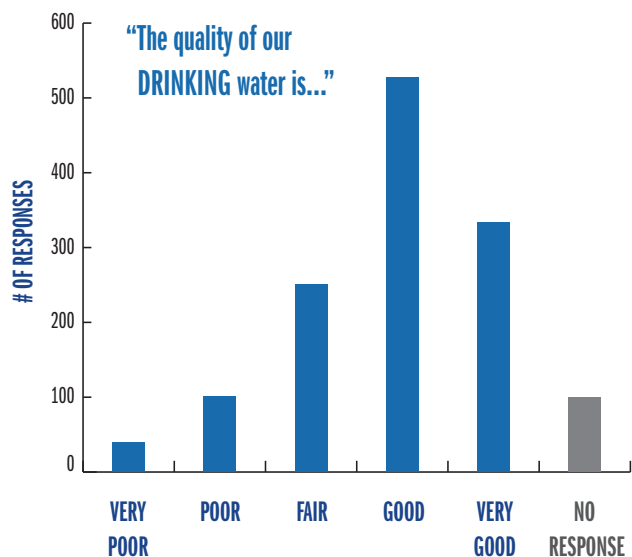
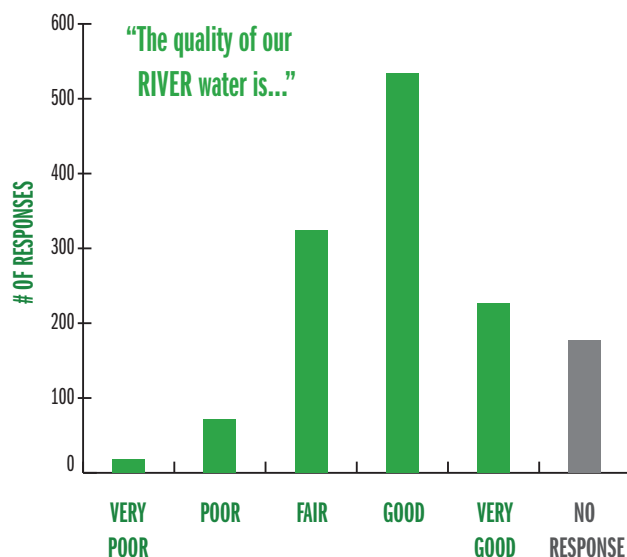
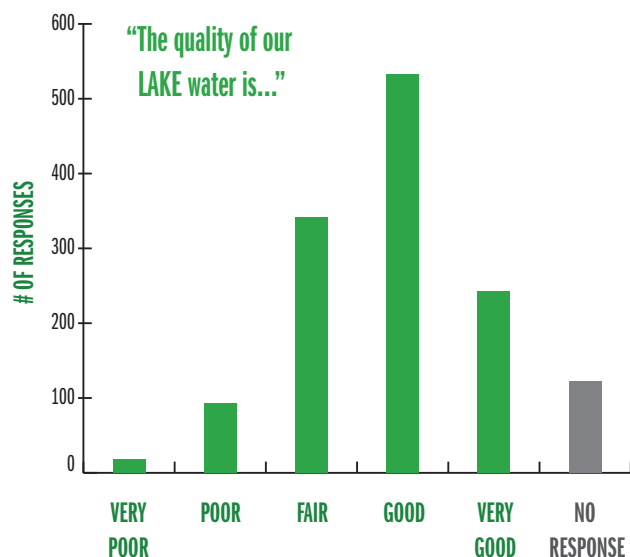


Figure 7. Drinking water quality ratings from Very Poor to Very Good.

The results of the Quality of Life Survey are too extensive to include in this report. We have included the results of the Water Resource Conservation section of the survey as examples.

The survey results indicate that residents are generally happy with the quality of their drinking water (see Figure 7), with the majority of respondents rating their drinking water quality as either good or very good. Further analysis of the data revealed that there was no significant effect of either age ( $F = 1.7$ ,  $p = 0.116$ ) or community ( $F = 1.1$ ,  $p = 0.40$ ) on perceived drinking water quality.



Figures 8 and 9. Ratings of lake water quality and river water quality, from Very Poor to Very Good.



Figure 10. Ratings of water resource protection, from Very Poor to Very Good.

Lake and river water quality was perceived to be somewhat lower than drinking water quality, with most respondents rating lake and river water as fair or good (Figures 8 and 9). Further analysis did not reveal an effect of age or community on perceived lake ( $F = 1.057$ ,  $p = 0.395$ ) and river ( $F = 0.731$ ,  $p = 0.695$ ) water quality. Respondents also rated water resource protection and sustainable management fairly low, with most respondents returning a rating of fair (Figure 10). Once again, neither age nor community showed an effect on the ratings ( $F = 1.184$ ,  $p = 0.299$ ).

These results suggest that the RDNO should consider focusing its efforts on protecting and maintaining natural water resources, thus improving water quality in lakes and rivers. Although further analysis may help explain the source of the higher and lower ratings, these ratings may be consistent across survey respondents.

Please see the RGS Monitoring and Evaluation Report for a full discussion of the results of the Quality of Life Survey.

## 2.3 Communicating Monitoring Results

The results of the quantitative monitoring program and the qualitative Quality of Life Survey will be shared with other regions, decision-makers, relevant professionals, and the general public by way of a formal monitoring report and an interactive website.

**Monitoring Report:** The monitoring report is an in-depth analysis of the quantitative indicator data and the results of the Quality of Life Survey. While the report will be accessible to the general public, it will be a technical report that describes and interprets the monitoring results in detail.



**Website:** The website will be an interactive tool that allows users to quickly access monitoring results on individual indicators or issues. The website will provide visual representations of the data that will allow the public to more easily understand monitoring results and how they can be applied to policy decisions in the North Okanagan. The website tool will be designed so that users can query the data and use results for specific needs.





## 3 PROGRAM TOOLS AND INNOVATIONS

The RDNO monitoring and evaluation program took an innovative approach to various aspects of program development, and produced a series of planning tools for monitoring and evaluation programs. These innovations helped create a more robust and community-focused monitoring program, and produced a series of useful tools that may be applied to other programs or program revisions in the future.

### 3.1 Innovations

- The process to develop quantitative indicators began with research on what other regions in BC, Canada, and around the world are doing to monitor their regional growth strategies or similar plans. Thus, rather than simply choosing indicators that the research team thought were important for local planning, the research team developed indicators that are both locally relevant and that relate to other regional monitoring programs, increasing the applicability and utility of the monitoring data gathered. The research team was also able to apply the lessons learned in other regions to improve the quality of our indicators.
- The research team used a structured decision approach supported by decision analysis methods to support indicator selection. Indicators were evaluated and ranked using a matrix of evaluation criteria and how well the indicators satisfied those criteria. This increased the quality of the indicators, ensured that indicators were both effective and efficient, and increased the transparency of the indicator selection process.
- The process to develop the monitoring and evaluation program was participatory and included senior planners representing all communities of the North Okanagan, the diverse membership of the Intergovernmental Advisory Committee and elected officials. The input received assisted in the selection and refinement of the quantitative indicators and the development of the Quality of Life Survey questions. As a result, the indicators and questions that were selected also have applicability to the evaluation of local and other regional planning initiatives.
- The Quality of Life Survey was developed using research on quality of life evaluation programs that operate locally, nationally, and internationally. The programs researched included programs run by world-renowned universities, such as Harvard University and the University of Waterloo, national government programs, including those of the Government of Canada, and regional programs, that reflect the local needs and interests of citizens. Some programs used quantitative indicators, while others were survey-based. This research helped ensure that the quality of life topics and questions were high quality and locally relevant.
- The North Okanagan RGS is one of the first regional growth strategies to include a quality of life survey as part of its monitoring and evaluation program. Linking the Quality of Life Survey to the RGS helps the RDNO gauge the impact of the RGS on citizens' quality of life, and increases resident involvement in the implementation of the RGS. The results of the Quality of Life Survey will help identify specific policy areas that the RGS 5-year review should focus on and highlight policy areas where progress has been made but not communicated adequately.
- The RGS Monitoring and Evaluation Program is unique in that it includes both quantitative indicators and qualitative indicators (in the form of the Quality of Life Survey) that are linked directly to RGS policy objectives. This combination of quantitative and qualitative indicators makes the monitoring and evaluation program more participatory and transparent to North Okanagan residents and provides more robust monitoring data. The quantitative indicators provide objective measures of key aspects of the RGS. The qualitative indicators provide more in-depth information on how the RGS is affecting residents' lives. This combination is important, given that the ultimate purpose of the RGS is to make the North Okanagan a better and more enjoyable place to live.



## 3.2 Tools

The development of the monitoring and evaluation program resulted in the creation of various monitoring and evaluation tools that will not only be helpful as an institutional memory for the RDNO but will be useful to local and regional governments across Canada and internationally:

### Tool 1: Indicator Criteria Indicator evaluation tool

The research team developed a set of criteria with which to evaluate monitoring indicators. These criteria are a tool that can be used to apply structured decision making to indicator selection, resulting in higher-quality indicators and a more transparent selection process.

EVALUATION CRITERIA	MEASURES		
	HIGH	MEDIUM	LOW
Good proxy for a broader trend (or goal) it represents	Direct statistic of identified trend	Indicator is important aspect of trend (though one of many)	Tenuous connection to broader trend
Reliable data exists which may be obtained at reasonable effort and cost	Data available from respected institution free of cost and with little effort	Data is available for some cost and demands/ has limited availability	Data must be collected and analyzed for considerable expense/ does not exist
Actionable (Informs policy or action evaluation and change)	Indicator significantly affected by potential actions of RD and Local Governments	RD and LG actions have some affect on indicator	Indicator affected by forces outside RD and LG jurisdiction or influence
Easy to explain and understand	Self-evident; little explanation required	Some explanation required, but no special expertise needed to understand	Will present a challenge for non-experts to understand
Consistent with or comparable to broader (provincial) or local indicators	A common indicator used in other regions, cities, and the province	The same indicator, or something similar, is used by some areas	Rarely used anywhere else
Change is measureable and meaningful on a reasonable timeframe	Changes over short- to mid-term term (5-10 years) are significant	N/A	Short- to mid-term change has no statistical significance; trends only visible over long periods
Consistent with RGS vision, policy and guiding principles	Directly related or with a strong connection to RGS principles	N/A	Tenuously connected to RGS principles; not clear how it relates

### Tool 2: Gap Analysis

The research team developed a gap analysis tool to systematically evaluate how well the RGS goals were addressed by the selected indicators, and whether there were RGS goals that the indicator list did not yet address. Where gaps existed, new indicators were developed to fill those gaps. Priority indicators are highlighted in light blue.

POLICY AREA	GOAL	# OF INDICATORS	INDICATOR	INDICATOR DESCRIPTION
WATER STEWARDSHIP	Protection and conservation of water resources	6	Water Use	Total water use per capita and by sector - water supplied by source; Amount (%) of reclaimed water used for irrigation
			Potable Water Safety	# of boil water advisory days (total), by water utility
			Groundwater Quantity	Percentage of Observation Wells that show declining water levels
			Surface Water Quality	Nitrates, Phosphates, Turbidity, Coliform
			Water Metering	% of Households, businesses and agricultural operations with water meters installed
			Source Water Protection	# of source water protection plans implemented

### Tool 3: Monitoring Data Matrix

The research team created a data matrix to organize the monitoring indicators, store monitoring data, identify data sources and responsibility for action on specific indicators, and facilitate the use of the monitoring data in planning decisions. The matrix is designed to provide both a global picture of the data and detailed information on each indicator.

MANAGER OR STAFF RESPONSIBLE:			HISTORICAL DATA				CURRENT DATA	FUTURE DATA				TARGET (OPTIONAL)
POLICY AREA OBJECTIVE	INDICATOR	PERFORMANCE MEASURE	1991	1996	2001	2006	2011	2016	2021	2026	2031	NA
WATER STEWARDSHIP	Groundwater Observation Wells	Percentage of Observation Wells that show declining water levels				9	10					
DATA SOURCE/COLLECTION METHODS (STATS CANADA, RDNO GIS, COMMUNITY SURVEY, ETC.)			Okanagan Basin Water Board, Ministry of Environment									
DATA COLLECTION FREQUENCY AND TIMEFRAME (ANNUAL, EVERY FIVE YEARS, CALENDAR, FISCAL YEAR)			Every 5 Years									
PARTIES INVOLVED AND RESPONSIBILITIES (COLLECTION, MANAGEMENT, EVALUATION)			RGS Coordinator									
DOCUMENTATION FORMAT (METADATA)			External - on Ministry of Environment website or contained within OBWB records									
RESULTS: STORAGE LOCATION, COMMUNICATION PLAN, AND ACCESS			<a href="http://www.env.gov.bc.ca/wsd/data_searches/obsWell/map/obsWells.html">http://www.env.gov.bc.ca/wsd/data_searches/obsWell/map/obsWells.html</a>									
COMMENTS			Will need to confirm with OBWB on 2011 observation well program (1 well was budgeted for in 2011)									

### Tool 4: Quality of Life Survey Development Guide

To create the Quality of Life Survey, the research team developed a tool to identify factors that influence quality of life and issues that should be examined related to these factors. This tool guided the development of specific survey questions and ensured that the survey addressed aspects of regional growth that are relevant to residents' quality of life.

### Tool 5: Quality of Life Survey

The Quality of Life Survey is a tool that the RDNO will be able to use during RGS review periods to better understand how the RGS is influencing the quality of life of residents of the North Okanagan. This measure is important given that quality of life and the effects of the RGS will ultimately be determined by the experiences of local people. The Quality of Life Survey will also inform the development of similar tools and surveys in other regions.



### Tool 6: Website

The project website will help ensure that monitoring data are available to decision-makers, planners, professionals and the general public. This tool can inform local and regional planning, and will help communities understand how the region is growing and changing. Monitoring results will be presented graphically with interpretation and explanation of how results can be applied to better understand our region and how it changes over time. The website is currently under development.



## 4 CONCLUSIONS AND NEXT STEPS

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The RDNO has developed a regional monitoring program to help us understand how the region is growing and guide policy development to improve residents' quality of life. As the RDNO and partners implement the RGS over the coming years, an improved understanding as to the extent the region is achieving the Strategy's goals, and will help in directing effective change as necessary.

The RDNO will continue to gather quantitative monitoring data for all selected indicators, and will soon be able to display this information on our monitoring website. The research team has completed our first Quality of Life Survey. The RDNO plans to conduct the survey again in three years and every five years thereafter, to update our understanding of regional quality of life during RGS reviews. This monitoring program includes several innovations and monitoring tools, helping ensure that the research team is gathering the best available data, and that our region develops sustainably in the coming years.



