Quality of LIFE
SPOKANE

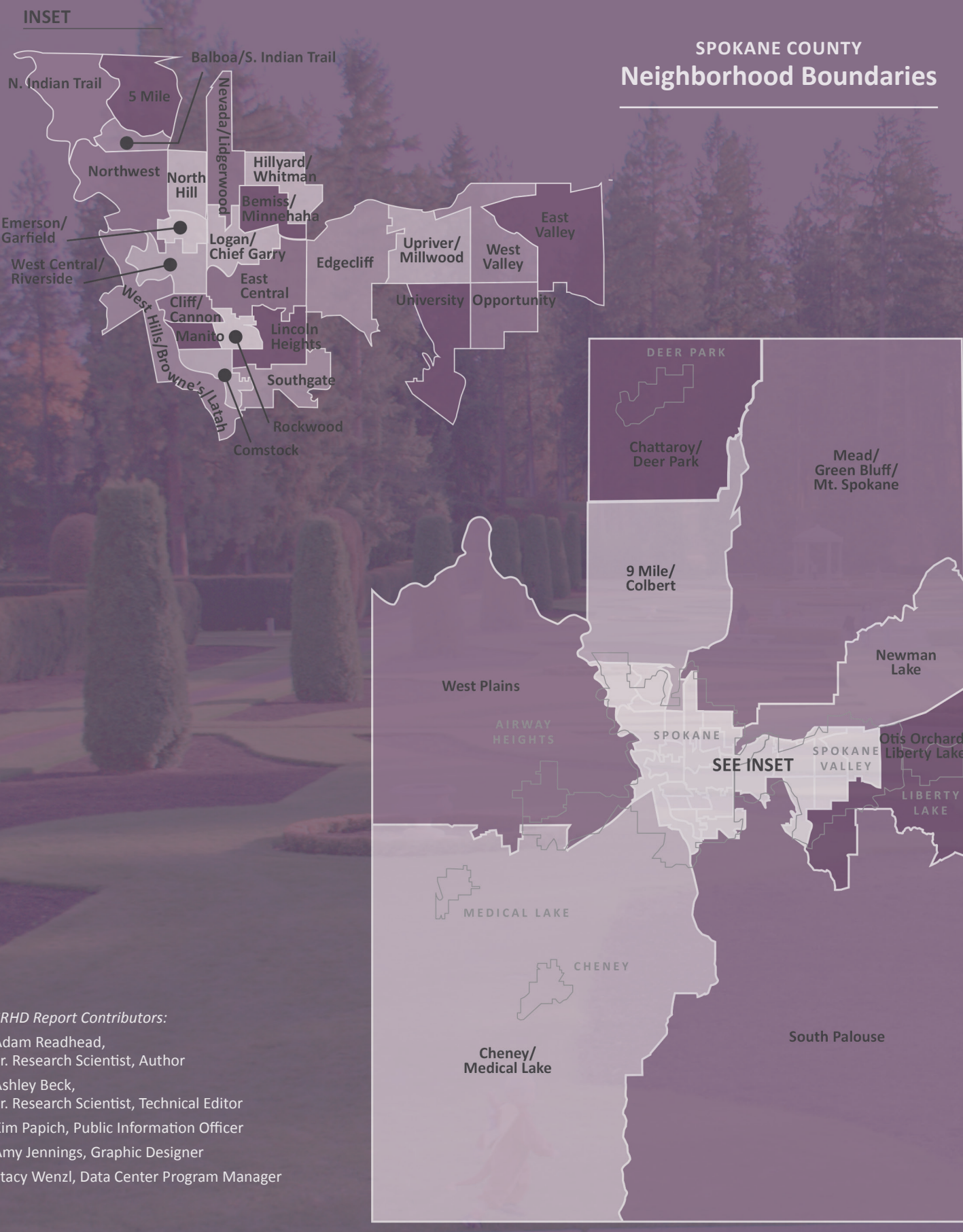
TECHNICAL APPENDIX

SECTION 7

CITY OF SPOKANE
PROVIDENCE Health Care
SPOKANE REGIONAL HEALTH DISTRICT
EMPIRE HEALTH FOUNDATION
Spokane County WASHINGTON

SPOKANE COUNTY

Neighborhood Boundaries



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Nearly seven decades after a global shift in how "health" is accounted for, to include such aspects as mental and social well-being, most communities are still lacking in data specific to the social well-being of its members. Spokane Regional Health District and its partners organized Spokane County's first comprehensive Quality of Life (QOL) survey in 2015 to confirm disparities in quality of life in the county and find areas for improvement. The survey was used to assess a series of domains and data that, together, measure all of the essential conditions that really matter for people's well-being.

Methodology for this project and resulting QOL report series is described here in Section 7. To read the first section, which provides an introduction to quality of life as a whole, as well as several other sections that explore elements affecting quality of life in Spokane County, visit qolspokane.org.

Project Background and Rationale

There is a growing understanding that societal progress cannot be measured solely by economic factors, such as gross domestic product.[1] There are factors in addition to economic security that affect the quality of how people can and do live in society. Multiple communities have taken efforts to measure and monitor over time the lived experience of their residents through implementation of broad-based community surveys. Surveys of this type usually assess a series of domains or topical areas, each represented by a set of data points. Multiple domains and data points together measure all of the essential conditions that really matter for people's well-being. Examples of these domains include: material well-being, environment, health, psychological well-being, time use and balance, sense of community, culture, education and learning, and governance, including satisfaction with government. Taken together, these domains provide a comprehensive reflection of people's lived experience, or overall quality of life.

Additionally, surveys that measure satisfaction with government, and the functions and services provided by government, are becoming standard practice for cities across the United States. Surveys, similar to Spokane County's QOL survey, were conducted in:

- Lewiston, Idaho and Clarkston, Washington (2005, 2007).
- Boise, Idaho (2005, 2007, 2009 & 2010).
- Vancouver, Washington (2012).
- Coeur d'Alene, Idaho (2013).
- Redmond, Washington (2014).

While there was a great deal of information readily available on Spokane County residents across multiple domains, important gaps remained. For example, there was no routine assessment of social capital within Spokane area communities. Likewise, there were no systematic efforts to gauge citizen satisfaction with government services. Comprehensive data on quality of life in Spokane County and people's perceptions of quality of life were not routinely collected.

Spokane County's QOL survey was a cross-sector effort to measure the quality of life of Spokane County residents, including health-related quality of life, satisfaction with local government services, community engagement, social capital and mental health. The survey was first conducted in 2015 and is expected to be a biennial survey contingent on the utility of the first survey and availability of funds.

The survey was designed to:

- Supplement existing datasets, such as Community Indicators Initiative of Spokane, an online community resource offering a centralized location to learn more about Spokane County; and Spokane Counts, an online database that provides information about selected population health indicators that can be impacted by public health and community partners. QOL survey data provides additional information on issues of importance to Spokane County residents.
- Act as a feedback mechanism to inform city and county governments about satisfaction with government services, thereby (1) fostering transparency and accountability of government, (2) identifying opportunities for continuous quality improvement, and (3) increasing resident confidence in government over time.
- Support the development and evaluation of community-based projects and improvement efforts.
- Establish a common and recurring set of measures/ standards for organizations working to improve the lived experience in Spokane County.

Project Planning

Project planning for the current survey began in 2013. Initial stakeholders and funding were committed from 2013 to 2014, and the first workgroup meeting of stakeholder organizations took place in September 2014. In 2014, report authors met with Spokane County commissioners, City of Spokane representatives, and other funders who approved the concept and allocated funding for the project.

Acknowledgments

Funders

The following organizations contributed direct funding for this project:

- Providence Health Care
- Empire Health Foundation
- City of Spokane
- Spokane County
- Spokane Regional Health District (SRHD)

1. Examples include: Canada, Bhutan, and the United Kingdom.

Workgroup

The following individuals served as stakeholders for the project, participating in various project-planning tasks:

- Bob Wrigley, Spokane County
- Rob Crow, City of Spokane
- Colleen Culbertson, Empire Health Foundation
- Sara Clements-Sampson, Providence Health Care
- Dr. Bob Lutz, SRHD Board of Health
- Dr. Patrick Jones, Eastern Washington University
- Adam Readhead, SRHD

Instrument Development and Design

Before drafting the survey instrument, an audit of related surveys in the region was conducted to identify methods and questions.[2] Quality of life frameworks were also identified in the literature and presented to the project planning workgroup and other stakeholders for review. After discussion, the workgroup adopted the Canadian Index of Wellbeing framework because of its demonstrated success in implementation, and the clarity and availability of extensive supporting documentation.

Survey questions were chosen for one or both of the following reasons: fit with adopted framework, and interest to one or more stakeholders or programs. While some questions were derived from previous surveys (General Social Survey, Canadian Index of Wellbeing, Behavioral Risk Factor Surveillance System and earlier local community health surveys), many were adapted and refined by the project workgroup. Final questions were approved by both the workgroup and SRHD internal stakeholders, then piloted with SRHD employees and several members of the public to improve clarity and understandability.

Survey materials, both physical and online, were designed by the SRHD Communications department and branded with the SRHD logo to provide visual appeal. Materials were carefully worded to encourage participation, and were signed by the health officer to increase perceived legitimacy of the survey.

Survey Methodology

Sample

A random sample of addresses within Spokane County was drawn from a mailing house vendor-augmented version of a United States Postal Service's (USPS) computerized sequential delivery file and was used to identify survey participants. This file included recipient names and address details of known active (deliverable) addresses. The vendor enhanced the accuracy of this list by matching it to other data sources.

Incentives

Token cash incentives were piloted with 300 addresses drawn at random from the larger sample. Each addressee received either a $5 bill, a $2 bill, or no money. Response rates from the $5 and $2 bill groups were similar and were notably larger than the group that received no money. Based on these results, $2 incentives were used in the remaining mailings to encourage response.

Administration methodology

Survey administration followed a "push-to-web" model used within Washington state and other states, relying extensively on the principles of Dillman et al.'s tailored design method.[1] Many of the survey administration elements were chosen based on earlier experimental work showing the efficacy of each element. Respondents were encouraged to complete the survey online (pushed to web) before being given the option of completing a hardcopy survey. Offering different modes (in this case, web surveys and paper surveys) in sequence, one after the other, showed to be more effective than offering different modes at the same time.

The survey design consisted of a series of three mailed letters inviting respondents to complete an online survey, followed by a fourth and final mailing that included a paper-copy of the survey, a postage-paid return envelope and a $2 bill.[2] Each mailing was sent approximately 10 days after the previous and only sent to those who did not respond to earlier mailers. To assist with coordinating replacement surveys and answering survey questions, SRHD provided a survey hotline. Some callers requested a paper survey and were informed they would receive a paper survey at the end of the invitation cycle. A portion of callers requested to be removed from subsequent mailings. Surveys and letters that were undeliverable (invalid address, no longer at address, or for other unspecified reasons) were collated into a list. Before every subsequent mailer, the addresses of those who completed surveys and undeliverable addresses were removed from the mailing list. Because of delays in returned mail, some recipients received survey invitations after they had completed the survey or after they asked to be removed from the list.

2. Assessed surveys: Portland citizen satisfaction, Lewiston-Clarkston quality of life, Coeur d'Alene quality of life and Redmond citizen satisfaction.

Response rate

Survey invitations were mailed to the initial random sample of 12,000 addresses within Spokane County. In total, 3,334 records (28%) were valid for analysis.

Of the 12,000 addresses, SRHD received USPS notification that 1,893 (16%) of the addresses could not be delivered to, most commonly because the person was no longer at that address.

The vendor's USPS mailing list was geocoded. Some addresses that were included in the sample were not within Spokane County's boundaries. These records were excluded from analyses.

Data entry

As surveys were primarily completed online by the residents themselves, there was no means to account for the quality of data entry. For paper surveys received, data entry was guided for staff with a simple written protocol. Periodic audits of data entry were conducted for quality control.

Table 1. Spokane County's QOL Survey Response Rates

	N	Percentage of Sample	Percentage of Previous Total
Sample	12,000	-	-
Deliverable addresses	10,107	84%	84%
Responded (including partial response)	3,833	32%	38%
Complete data available for weighting	3,433	29%	92%
Valid for analysis	3,334	28%	97%

Weighting and Imputation

Survey data was weighted to account for the sampling design and differential response rates among subgroups. More than 3,600 people countywide, ages 19 years or older, responded to the survey. The survey was weighted to account for the sampling of people within households, as well as differential response rates among age, race/ethnicity, sex, education, and tenure (home ownership). Weights were calculated using population proportions from the 2009-2013 American Community Survey (five-year estimates). Weights were created using iterative proportional fitting (IPF) or raking.

IPF is recommended when the full joint distribution of demographic variables is not available or the cell sizes of the full joint distribution are too small to support reliable calculations. In consultation with Washington State Department of Health (DOH), the following margins were recommended for the weighting calculation: age, sex, race/ethnicity, education, marital status and tenure. These were based on the margins used to rake U.S. Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System (BRFSS) survey data. Note that education and income were both not included as raking margins due to notable collinearity between the two measures.

Raking margins were missing at the following proportion, yet suspected to be partially intact at random or not missing at random. Some missing margins were corrected with rule-based imputation for the following variables and at the following frequencies.

- Data from publicly-available parcel tax records were used to impute home ownership.
  - » 105 records were missing from the tenure variable, which authors tried to recover by cross-referencing the respondent's name with publicly-available real estate tax information available from Spokane County's Programming Abstractions for Data Locality (PADAL) portal. Tenure for 84 records was verified this way; 21 records were not verified because a match in PADAL was not found.
- Missing data on sex was imputed based on first name where possible.
- Records that were deemed valid for analysis excluded respondents under 20 years of age or who marked some other race or prefer not to say. There were a handful of records in these categories.

There was notable under-representation of persons ages 20 to 29 (-18%), those with only high school education or GED diploma (-11%), persons who had never been married (-21%) and those who rented their homes (-17%). Among race/ethnicity categories, Hispanic residents were the most under-represented (-4%).

Table 2. Raking Diagnostics

Demo-graphic Variable	Category	Population Proportion	Number of Survey Respon-dents	Unweight-ed Sample Proportion	Difference Between Unweight-ed Sample Proportion & Population Proportion	Weighted Sample Proportion	Difference Between Weighted Sample Proportion & Population Proportion
Age	20-29	21%	85	3%	-18%	25%	4%
	30-39	17%	351	11%	-6%	16%	-1%
	40-49	17%	525	16%	-1%	17%	0%
	50-59	19%	777	23%	5%	18%	-1%
	60-69	15%	832	25%	10%	13%	-2%
	70+	12%	764	23%	11%	12%	-1%
Sex	Female	51%	1660	50%	-1%	52%	1%
	Male	49%	1674	50%	1%	48%	-1%
Race/ ethnicity	American Indian or Alaska Native	2%	56	2%	0%	2%	0%
	Asian	3%	54	2%	-1%	3%	0%
	Black	3%	37	1%	-1%	3%	0%
	White	87%	3131	94%	7%	87%	0%
	Hispanic	5%	56	2%	-4%	5%	0%
Education	Less than 12th grade	7%	88	3%	-5%	8%	1%
	High school graduate or GED	25%	477	14%	-11%	25%	0%
	Some college, no degree	27%	831	25%	-2%	26%	-1%
	2 year college degree	12%	448	13%	2%	12%	0%
	4 year college degree	18%	757	23%	5%	19%	1%
	Graduate or professional degree	10%	733	22%	12%	10%	0%
Marital Status	Married	50%	2030	61%	11%	49%	0%
	Widowed	6%	387	12%	6%	6%	0%
	Never been married	30%	315	9%	-21%	31%	0%
	Divorced or Separated	15%	602	18%	3%	15%	0%
Tenure	Own home	66%	2786	84%	17%	67%	1%
	Rent home	34%	548	16%	-17%	33%	-1%

The final weights among respondents under the age of 25 and minority respondents were very large (>4). Trimming large weights increases the stability of estimates but decreases their representativeness. After consultation within the SRHD Data Center and DOH, authors made the decision not to trim the weights.

As a method of validating QOL survey estimates, authors compared questions that were implemented on the quality of life survey and on the BRFSS. The estimates were in good agreement. From the QOL survey, the proportion of adults reporting smoking was 15.3%. This is slightly lower than the proportion reporting smoking from BRFSS 2013 (18.8%).[3] The proportion reporting tooth loss (six or more teeth) was 10%. This is slightly lower than the proportion reporting tooth loss from BRFSS 2012 (12.7%).[4] Of residents in Spokane County, 92% had some form of health insurance. This is in line with estimates from other recent surveys, namely BRFSS which estimated health insurance coverage in the county to be 88% in 2014.[5]

Minimum Sample Size Geography

Following standard of practice suggested by DOH, and CDC for use with the BRFSS survey, estimates that relied on fewer than 50 respondents were avoided. The notable exception was in analyzing race/ethnicity data (see data analysis section). Table 3 highlights neighborhoods that had fewer than 50 respondents. To provide neighborhood-level estimates that met the 50 respondent threshold, neighborhoods with fewer than 50 respondents were combined with an adjacent neighborhood such that the combined number of respondents of the combined area was more than 50. Neighborhoods were combined based on similarity of the neighborhood with the subjective judgment of SRHD epidemiologists.

Table 3. Number of Survey Respondents by SRHD-Defined Neighborhood

Neighborhood	Number of Respondents
Nine Mile/Colbert	266
Otis Orchards/Liberty Lake	255
Cheney/Medical Lake	212
Mead/Green Bluff/Mt. Spokane	190
Northwest	186
South Palouse	143
Nevada/Lidgerwood	123
University	120
Newman Lake	116
Lincoln Heights	113
Southgate	108
Opportunity	107
North Indian Trail	96
West Plains	94
North Hill	84
Edgecliff	79
Millwood	72
Comstock	67
Cliff/Cannon	65
East Valley	61

Neighborhood	Number of Respondents
West Valley	60
Five Mile	58
East Central	58
Balboa/S. Indian Trail	57
Manito	55
Rockwood	55
Emerson Garfield	53
Chattaroy/Deer Park	52
Logan	49
Bemiss	47
Hillyard	39
West Central	36
West Hills	26
Chief Garry Park	25
Browne's Addition	24
Latah Valley	21
Whitman	20
Riverside	16
Upriver	14
Minnehaha	12

Note: Neighborhoods do not reflect boundary changes introduced by the City of Spokane in 2015.

Table 4. Questions Used to Calculate Quality of Life Score

Domain	Question
Community Vitality	How would you describe your sense of belonging to your neighborhood?
	How often do you provide unpaid help to others apart from your family?
	How safe do you feel walking alone in your area at night?
	How safe do you feel using your local park or green space alone during the day?
	Perception of people openly using drugs in neighborhood
	Perception of people breaking and entering to steal personal property in neighborhood
	Perception of violent physical attacks taking place in neighborhood
	Perception of sexual assault or rape taking place in neighborhood
	How interested are you in politics in general?
	How much do you follow what local government is doing (through newspapers, TV, websites, blogs, etc.)?
Financial Stability	Are you better off financially than you were 12 months ago?
	In the last 12 months, how often have you had trouble paying your bills?
	Which of the following best describes your employment situation?
	How often in the past 12 months did you have to cut meals because there wasn't enough money for food?
	How would you rate your personal financial situation?
	How would you rate your employment situation?
Physical and Mental Health	Would you say your general health is?
	Do you have any kind of health care coverage, including health insurance, HMOs, government plans?
	How many of your permanent teeth have been removed because of tooth decay or gum disease?
	Now thinking about your mental health, which includes stress, depression, and problems with emotions, how many days during the past 30 was your mental health not good?
	Do you now smoke cigarettes every day, some days, or not at all?
	In the last seven days, how many days did you exercise 30 minutes or more?
	Fruit and vegetable intake (combined)
Lived Experience	How would you rate the quality of life in Spokane?
	How satisfied are you with the neighborhood or community you live in?
	Perception of availability of sidewalks and bike paths in neighborhood
	Perception of condition of sidewalks and bike paths in neighborhood
	Perception of condition of roads and streets in neighborhood
	Perception of availability of parks, trails and open space in neighborhood
	Perception of quality of park system, trails and open space in neighborhood
Social Relationships	How many close friends do you have?
	Generally speaking, would you say that people can be trusted?
	In the past 12 months, how often did alcohol use, by you or another member of your household, cause stress, conflict or anxiety for you?
	How often do you volunteer for a community organization?
	How often do you receive support from your family or relatives?
	How often do you attend religious services?
	How would you rate your relationship with your children?
	How would you rate your relationship with your spouse or partner?
Time Use	How many hours per week do you usually work at a paid job?
	How often do you feel rushed?
	How satisfied are you with the quality of park system, trails, and open space in your neighborhood?
	How often do you provide unpaid care to seniors including members of your family?
	Number of children under 18 living in household
	How often do you take time off other than your scheduled days off?

Construction of Quality of Life Score

Quality of life score was calculated using 45 questions grouped into six domains adapted from frameworks used by the Canadian Index of Wellbeing and the European Quality of Life survey.[6] The six domains were: lived experience, social relationships, financial stability, physical and mental health, time use and community vitality. Report authors determined that other domains commonly included in quality of life frameworks, like education and environment, were already addressed in local surveys, and, as a result, not included in the Spokane County QOL survey. Other quality of life frameworks included domains for democratic engagement and leisure and culture, but these domains were not investigated in the interest of brevity. The questions in each domain are listed in table 4. Note that some questions included in the quality of life score were also used to calculate the social capital score (see table 5).

To construct the score, each response category of each question was assigned a numeric value scaled to the interval [0,1]. These values were then summed within each domain and scaled to the interval [0,1]. The total quality of life score was a sum of the domain scores; a real number in the interval [0,6] as there were six domains. Calculations were considered valid even for records with missing data. Of the 146,696 question-level calculations, 2,985 (2%) involved missing data, which was deemed acceptable.

Due to a variety of answer categories, there were a number of rule sets for the assignment of the numeric value. Questions were coded in a two main ways. First, some questions were designed such that the response categories with high values were "positive" contributions to the domain. Authors defined this as *high coded* questions. Second, other questions were designed such that response categories with low values were "positive" contributions to the domain. Authors defined these as *low coded* questions.

For high coded questions, the calculation was as follows:

$$q_h = \frac{v - 1}{m}$$

where q_h is the individual question score for a question in the high category, m is the maximum encoded value of the question and v is the value of the question. For example, if a respondent reported a *once a week* frequency of alcohol-related conflict, the answer was encoded as 1, the maximum encoded value of the question was 5, thus the score would be 1-1/5 = 0.

For low coded questions, the calculation was as follows:

$$q_l = \frac{m - v}{m - 1}$$

where q_l is the individual question score for a question in the low category, m is the maximum encoded value of the question and v is the encoded value of the question for a specific respondent. For example, if a respondent reported a *very strong* sense of belonging to neighborhood (question 8), that response category was encoded as 1, the maximum encoded value of the question is 4, thus the score would be 4-1/4-1 = 1.

There was a third category of questions that required special rule sets because of the way they were originally encoded. With the exception of question 19, which used the high coded calculation, these questions used the low coded calculation described above.

Construction of Social Capital Score

A social capital score was constructed using 15 questions which matched, or were reasonable approximations of, questions used in Puntam's Social Capital Community Benchmark.[7] To construct the score, response categories for each question were assigned a numeric value. Score calculation followed the same scheme outlined above for the quality of life score. With the exception of the question regarding close friends, all questions used a low coding scheme as defined in the previous section. The question on friends used a special code set (6+=4, 3-5=3, 1-2=2, 0=1) and the high coding scheme outlined previously. Note that some questions used to calculate the social capital score were also used to calculate the quality of life score.

Table 5. Questions Used to Calculate Social Capital Score

How many close friends do you have, that is, people who are not your relatives, but who you feel at ease with, can talk to about what is on your mind, or call on for help?
Generally speaking, would you say that people can be trusted?
Volunteer for a community organization
Receive support from your family or relatives
Attend religious services
Your relationship with your children
Your relationship with your spouse or partner
How would you describe your sense of belonging to your neighborhood?
Provide unpaid help to others apart from your family
Walking alone in your area at night
Using your local park or green space alone during the day
How interested are you in politics in general?
Follow what local government is doing (through newspapers, TV, websites, blogs, etc.)
How satisfied are you with the neighborhood or community you live in?
How satisfied or dissatisfied are you with Spokane County government?

Data Analysis

Descriptive analysis

Analyses were conducted in SAS analytics software v9.3. Data were analyzed using weighted frequencies and multiple regression techniques. Continuous scores for quality of life and social capital were approximately normally distributed. Given the wide confidence intervals for estimates at the neighborhood-level, authors decided to report estimates at this level using ranked quartiles, as opposed to point estimate and confidence intervals, to minimize confusion to readers.

Inferential analysis

Linear, logistic and cumulative logistic multiple regressions were conducted using survey weights, and specifications that data were not missing at random. Due to missing data, complete case analysis was used for regression. This method has been shown to be less biased than other options. Factor analyses were also conducted.

Given the target audience of the report as being non-technical, results of multiple regressions were presented in simple and reductive language. Technical readers should be aware that references throughout the report to phrases like “accounting for other factors” are indications that results are those from multiple regression analyses.

Qualitative analysis

There were three open-ended questions in the survey (see table 6). Open-ended questions were coded using a multiple pass technique. Open-ended questions were separated from the rest of the survey and were identified only with a code to ensure that other survey responses would not influence the coding process. In the first pass of coding, major themes were identified and responses were categorized into codes. In the second, codes were refined and more codes were added as necessary. A third pass was completed to check consistency of code usage. Finally, to ensure quality, another analyst reviewed codes.

Table 6. Open-Ended Questions Assessed in Quality of Life Survey 2015

Question Number	Question
4	What is the most important issue facing the Spokane area today?
9	What is the most important issue facing your area, neighborhood or community today?
38	In the last 12 months, what has been the biggest source of stress in your life?

Table 7. Question 4 Coding Rubric: Issues Facing Spokane Area

Code	Description
Activities	Any response related to a lack of activities to do in the city/county.
Blight	Any response mentioning blight, run-down homes or property, general degradation of neighborhoods, etc.
Community	Any response related to a lack of, or problems with the community. For example, lack of sense of community.
Corruption	Any response directly mentioning corruption.
Cost of Living	Any response related to cost of living including utilities, rent, food, etc.
Crime	Any response related to general or unspecified crime.
Diversity	Any response related to diversity, or lack of diversity.
Economy	Any response mentioning the economy or similar general economic concerns not included in other categories.
Education	Any response related to schools or education.
Emergency Services	Any response related to a lack of or concern about fire, police, EMS services and availability.
Environment	Any response mentioning the environment, water, air quality, or pollution.
Food Security	Any response related to concerns about adequate food or availability of food.
Gangs	Any response directly mentioning gangs.
Government	Any response criticizing or mentioning government and government organizations as an issue.
Growth	Any response related to city/county growth as sprawl, poorly planned growth or expansion.
Health Care	Any response related to poor or inadequate health care, access to health care, or cost of health care.
Homelessness	Any response directly mentioning homeless people or similar terms.
Housing	Any response related to lack of housing, poor, or quality housing.
Illegal Drugs	Any response related to illegal drugs (not including marijuana).
Immigration	Any response related to immigration or immigrants.
Inequality	Any response related to financial, social, gender, or racial inequality.
Infrastructure	Any response related to non-road infrastructure.

Code	Description
Jobs	Any response related to a lack of jobs, poor quality jobs, or poor employment opportunities.
Marijuana	Any response directly mentioning marijuana as a concern.
Mental Health	Any response related to mental health care or concerns.
NA	Any missing response or "I don't know" type answers.
NS Freeway	Any response directly mentioning the north-south freeway.
Oil Trains	Any response directly mentioning oil trains.
Other	Any response that is purely unique and unrelated to all other subjects.
People	Any response directly criticizing individuals or groups of people not directly related to other categories.
Planning	Any response related to government, economic, or general planning in the city or county. This includes any concerns about future direction or city/county goals.
Police	Any response related to police, both positive and negative views, and police activities.
Politics	Any response related to politicians, political parties, or political stances (liberal, conservative, Democrat, Republican, etc.).
Poverty	Any response related to poverty in the community or economic depression.
Property Crime	Any response related to theft, vandalism or other property crime. Does not include violent crime or crime as a general answer.
Racism	Any response directly mentioning racism.
Roads	Any response related to road or street conditions.
Safety	Any response directly mentioning safety or security.
Social Services	Any response related to social services including charity, social security or public assistance.
Suicide	Any response directly mentioning suicide.
Taxes	Any response mentioning taxes.
Traffic	Any response related to traffic, sidewalks, crosswalks.
Transportation	Any response related to public or mass transportation.
Wages	Any response related to low wages or wages in general. Often attached to jobs.

Table 8. Question 9 Coding Rubric: Issues Facing Your Neighborhood or Community

Code	Description
Activities	Any response related to a lack of activities to do in the city/county (includes stores, restaurants).
Animals	Any response related to domestic or wild animals (dogs, cats, deer, etc.).
Blight	Any response mentioning blight, run-down homes or property, general degradation of neighborhoods, etc.
Community	Any response related to a lack of, or problems with the community. For example, lack of sense of community.
Construction	Any response related to construction of roads, buildings, etc. and noise/inconvenience associated.
Cost of Living	Any response related to cost of living including utilities, rent, food, etc.
Crime	Any response related to general or unspecified crime.
Diversity	Any response related to diversity, or lack of diversity.
Drugs	Any response related to legal and illegal drugs (including marijuana).
Economy	Any response mentioning the economy or similar general economic concerns not included in other categories.
Environment	Any response mentioning the environment, water, air quality, or pollution (includes wildfire).
Food	Any response to lack of adequate/satisfactory food options (restaurants, grocery stores, etc.).
Gangs	Any response directly mentioning gangs.
Government	Any response criticizing or mentioning government and government organizations as an issue.
Growth	Any response related to city/county growth as sprawl, poorly planned growth or expansion.
Home Values	Any response related to declining property/home values.
Homelessness	Any response directly mentioning homeless people or similar terms.
Infrastructure	Any response related to non-road infrastructure.
Jobs	Any response related to a lack of jobs, poor quality jobs, or poor employment opportunities.
Mental Health	Any response related to mental health care or concerns.
NA	Any missing response or "I don't know" type answers.
Neighbors	Any response related to neighbors or individuals in the community.
Parks	Any response related to availability, maintenance, or construction of parks.
Planning	Any response related to government, economic, or general planning in the city or county. This includes any concerns about future direction or city/county goals.
Police	Any response related to police, both positive and negative views, and police activities.
Poverty	Any response related to poverty in the community or economic depression.
Property Crime	Any response related to theft, vandalism or other property crime. Does not include violent crime or crime as a general answer.
Rental Properties	Any response related to rental homes, apartments, or non-permanent residents.
Roads	Any response related to road or street conditions.
Safety	Any response directly mentioning safety or security.
Schools	Any response related to schools or education.
Services	Any response related to utilities (water, sewer, electric, roads) and city/county services (plowing, garbage pickup, etc.).

Code	Description
Sidewalks	Any response directly mentioning sidewalks or crosswalks.
Social Services	Any response related to social services including charity, social security, or public assistance.
Taxes	Any response mentioning taxes.
Traffic	Any response related to motor vehicle traffic, speeding, and other traffic laws.
Transportation	Any response related to public or mass transportation.

Table 9. Question 38 Coding Themes: Biggest Sources of Stress

Code	Group
Crime, property crime, gangs, illegal drugs, safety and marijuana	Crime/Safety/Drugs
Jobs, wages, cost of living, economy, food security	Jobs/Economy
Taxes, government, corruption, politics	Taxes/Government
Social services, police, emergency services	Government Services
Roads, traffic, transportation	Roads/Transport

Limitations

As with any survey and analyses, this project had a number of strengths and weaknesses. The major strength of this survey was its large, population-based sample (N=12,000) and good response rate (n=3,833, 32%). The number of records valid for analysis was 3,334. Furthermore, responses were geocoded to the point-level such that survey estimates could be produced for any geography with sufficient sample. The sample weights were created by iterative proportion fitting, or raking, which produced better weights than more simplistic weighting methods. Finally, the survey instrument included over 100 items (grouped in 54 questions) which provided a range of data on quality of life.

The main weakness of the survey was that it was a mailed survey and therefore constrained by the quality and inclusiveness of the vendor-enhanced mailing list. Authors expect that renters, low-income individuals and those with limited interaction with other consumer databases (which were used by the vendor to confirm addresses) were under-represented. In addition, authors noted earlier that those people who were 20 years to 29 years old have lower household income, were less educated, or were less likely to respond to the survey. Questions on physical, dental and mental health were taken from BRFSS and were therefore validated, but other questions were appropriated from local surveys, including the Lewiston-Clarkston Quality of Life survey, the Redmond Citizen Satisfaction survey, and the Portland Citizen survey, and may or may not have been validated by those organizations. Questions taken from the Canadian Wellbeing Index and the General Social Survey were validated. A number of original questions were written for the survey and were piloted with employees of SRHD, but they were not validated.

Endnotes

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