

A stylized white leaf logo consisting of three leaves on a stem, positioned to the left of the word 'breathe'.

breathe

EDMONTON'S GREEN NETWORK STRATEGY

Report
Stage 3: Open Space Demand
October 2016

Prepared for
City of Edmonton

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Project Website
www.edmonton.ca/breathe



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1 INTRODUCTION



BREATHE: Edmonton's Green Network Strategy

Parks and open spaces are vital to a community's health. They provide places for people to play, gather, grow, learn, and celebrate.

Because Edmonton Metro is projected to nearly double in population from 1.2 million people to 2.1 million people by 2050, the City has embarked on a process to plan the city's green network to meet the needs of growing communities.

BREATHE is a transformative strategy to make sure that each neighbourhood in Edmonton will be supported by an accessible network of open space as the city grows. The Green Network Strategy builds on the Urban Parks Management Plan and the Natural Connections Strategic Plan, and aligns with the goals identified in the City's strategic planning documents ("The Ways").

The Green Network Strategy will support the City of Edmonton's commitment to:

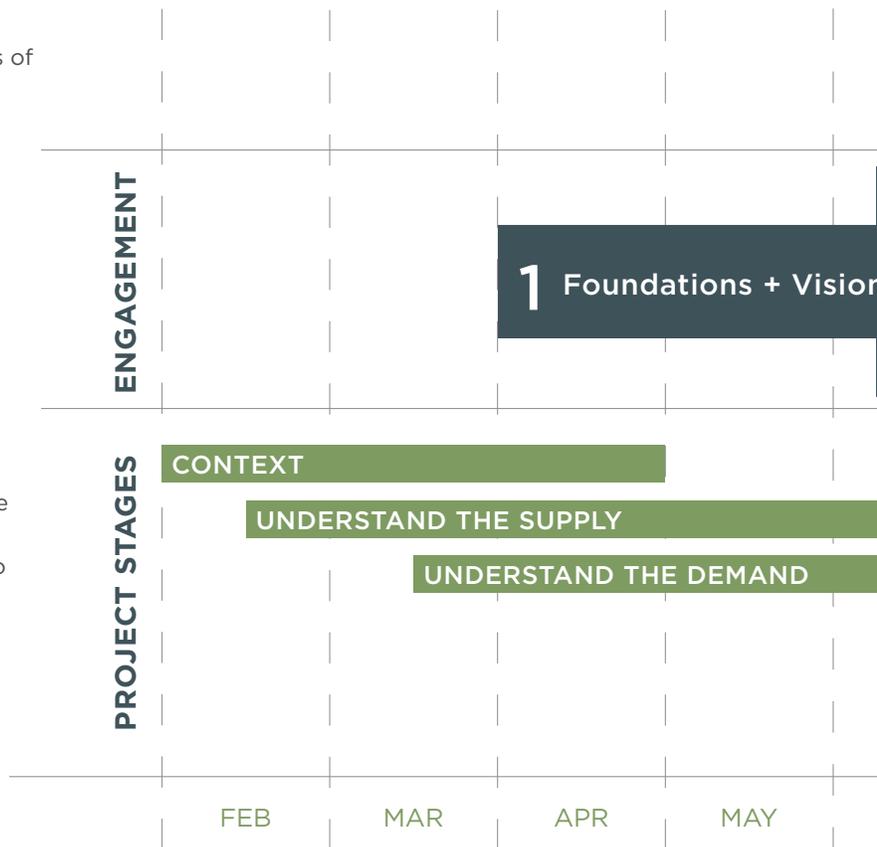
- » Transform Edmonton's urban form;
- » Enhance the use of public transit and active modes of transportation;
- » Improve Edmonton's liveability;
- » Preserve and sustain Edmonton's environment;
- » Ensure Edmonton's financial sustainability; and
- » Diversify Edmonton's economy.

In the same way that organisms function within a natural ecosystem, open spaces function as part of a larger integrated urban ecosystem. Edmonton's Green Network Strategy will examine how open spaces in the City of Edmonton function as an integrated network of public spaces that provide real, measurable value to Edmontonians.

About This Report

The Stage 3 Summary Report reviews the current state of Edmonton's Green Network using a series of analyses that reflect the holistic perspective of the project. The purpose of this report is to engender an understanding of the demand for open spaces in the City of Edmonton. This is accomplished through an exploration of:

- » Current demographics and population groups in the City of Edmonton which are relevant to current and potential future open space planning.
- » A summary of the findings on open space demand in the City of Edmonton from public engagement activities conducted to date. This includes two online surveys (a questionnaire and a spatial survey), as well as public engagement events such as open houses, pop-up events and forums.
- » Projected trends in city demographics and growth, including a discussion of anticipated growth areas.



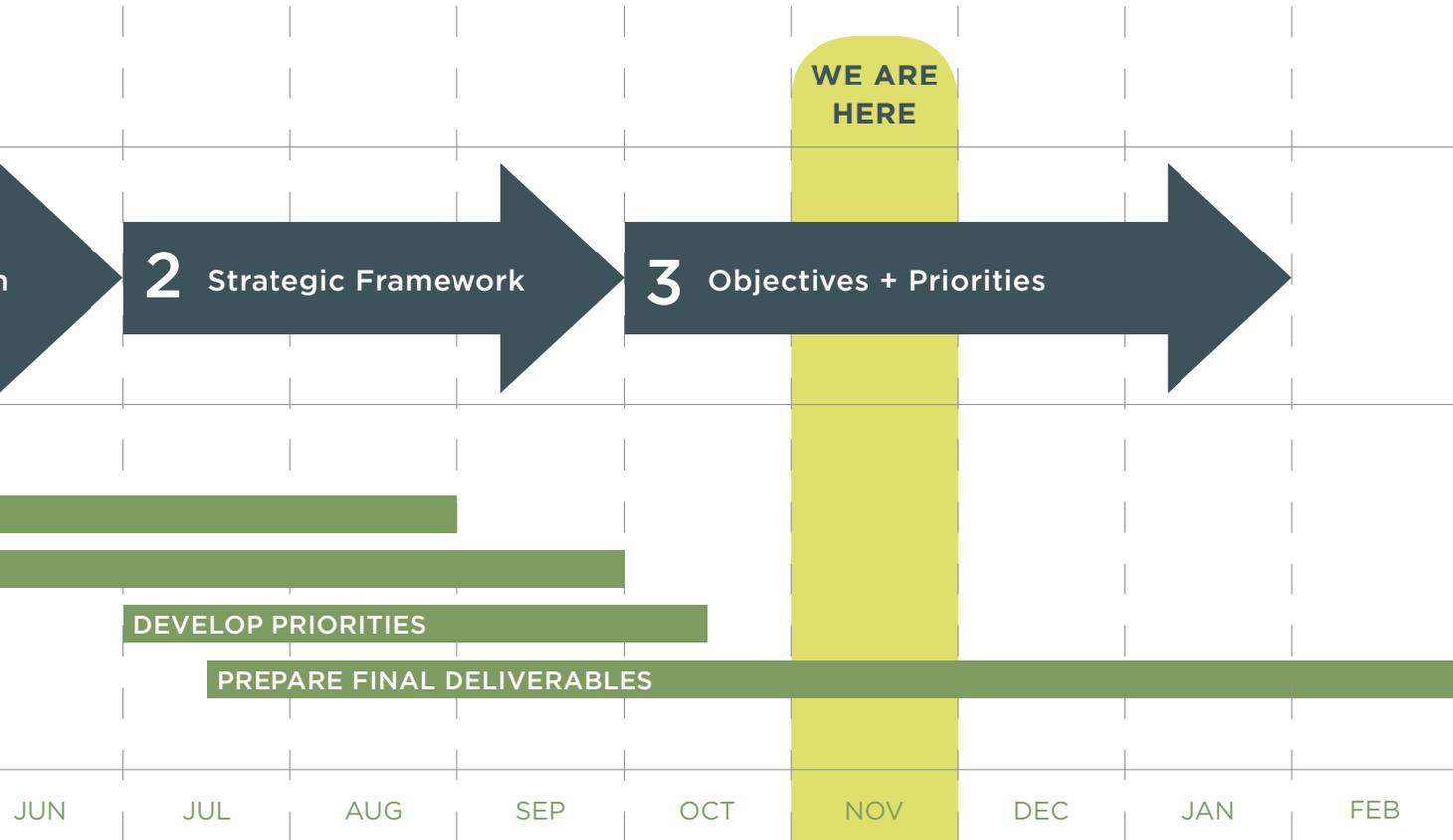
Project Context

In order to plan for the future of open space in Edmonton, the City needs to understand how Edmontonians use the green network today, and recognize opportunities to build upon and improve this network in the future. This means the results from Stage 2 and Stage 3 will be used in tandem to inform Stage 4, when future priorities for open space improvement and development across the City will be identified.

Because this is an intermediate Report, it contains only a summary of the information and results collected to date. Furthermore, it focuses explicitly on human users of the green network, and the planning implications of different demographic groups' usage patterns and growth in the future. In reality, there are more demands placed upon the green network than can be discussed here: the demand from wildlife and environment for ecological services, habitat and connectivity; the demand from City parks operators and community partners for open space policies that are feasible and user friendly; and the demand from City leadership for a green network that supports financial and city building goals.

The intention of this Summary Report is to establish Edmontonians' wants and needs, effectively controlling for certain other aspects of open space demand - effectively to evaluate a "perfect world" green network according to its users. Their demands will be considered in the context of more detailed information about open space conditions, management issues, budget implications and policy priorities during the course of Project Stage 4. More detail about this evaluation of supply and demand will be provided in the final report for BREATHE: Edmonton's Green Network Strategy. The Strategy will be accompanied by a separate technical appendix that fully explains the methodologies and results from the analyses.

Figure 1.1 Illustrates the Green Network Strategy project timeline, including project stages and the public engagement phases.





2 EDMONTON DEMOGRAPHICS

Demographics and Demand

Population demographics are an essential piece of any planning puzzle: they tell us whom we are planning for, and where those people are located. Denser neighbourhoods – those with a greater number of people per unit area – will typically have a higher level of overall demand for open space, and associated programs, facilities, and amenities, than less dense neighbourhoods. In addition to sheer numbers of people, it's important to gather more detailed information about Edmontonians, because different people have different open space needs and demands. Age, language, ethnicity, socio-economic status, and a number of other population characteristics all influence how people use open space, or how they are prevented from using it. For example, families with children may have a greater need for playgrounds in their local community parks, while socially vulnerable people living in inner city neighbourhoods may have difficulty accessing fee-for-service facilities such as zoos, golf courses, and recreation centres. It is important to understand how populations can best be served in terms of open space amenities and services, so that open space planning can be strategic, and ultimately, successful.

Many demographic characteristics influence usage patterns and preferences. The findings presented in this report are based on a selection of those characteristics, which represents the diversity of factors that the final Green Network Strategy must consider:

1. Population
2. Age
3. Income
4. Language
5. Social vulnerability
6. Mode of transportation

Recognizing that this Report cannot summarize all the information examined by the project team during Stage 3, other demographic characteristics are also briefly discussed. As previously mentioned, more details about all the information examined during this stage will be reflected in a Technical Summary Report, which will accompany the Final Strategy.

In the sections that follow, each demographic characteristic is introduced with a discussion of general trends and the implication of those demographic trends on open space demand. The information contained in these discussions is based on publicly available data and research from a variety of sources. A list of these sources

is available at the end of this Report (see Appendix A). Each demographic is also mapped for Edmonton, specifically using data from the 2016 Edmonton Municipal Census, and the summarized and discussed spatial patterns. Where appropriate, patterns are related to the Reporting Units introduced in the Stage 2 Summary Report. A map of the Reporting Units is available in Appendix B.

It should be noted that this Report uses the 2016 Edmonton Municipal Census. Although much more current than the latest federal census (only 2011 results are available at this time), some questions in the Municipal Census suffer from a significant non-response rate. As a result, the demographic findings presented in this part should be treated with caution, and should be compared with the results of the federal 2016 Census of Population as soon as they become available.

Finally, the information and conclusions discussed here are being considered by the project team as only one part in a process of triangulation. Census demographic information alone reveals very little about potential open space demand, so further research is necessary to form conclusions in this regard. In order to address this need, the BREATHE engagement process includes a questionnaire and spatial survey that explicitly asked respondents about their open space needs and preferences; and collected information about their place of residence, locations of open space usage, and demographic characteristics. The BREATHE team also had focused conversations with various organizations and groups representing communities of interest (including seniors, ethno-cultural communities, low-income residents, people with disabilities, youth, and children) to better understand the open space needs unique to these groups.

Thus, the results of engagement can be used to provide detailed demand information for part of the Edmonton population, while the Municipal Census (coupled with supplementary research) can provide general demand information for demographic groups or locations that are not well represented by the engagement. These tools were combined to help form a comprehensive understanding of current open space demand in Edmonton.

Total Population Density

Introduction

Edmonton is a changing city. As the number of residents and households grow, their needs and demands for open space change with them. This demand will therefore shift over time, creating new challenges and opportunities for future open space planning. To be strategic in meeting the needs of current and future populations, the Green Network must be planned with an understanding of the city's population density. Population density shows the number of people who live within a certain unit area – in this case, number of people per square kilometre. It gives a general impression of whether a neighbourhood consists of low density, single family homes on large lots, high density apartment and condominium buildings, or something in between (e.g. a mixture of dwelling types, or intermediate density residential types like townhomes or small lot, single family homes). Not only do higher density neighbourhoods contain a higher concentration of people (and thus, more people whom open space must supply), but the residential form in higher density neighbourhoods is more likely to feature dwelling types with little private open space. As a result, examining population density allows city planners to target areas of the city that require higher quality and quantity of open space because more people are living there.

Census Findings

According to the 2016 Edmonton Municipal Census, there are currently 899,447 people living in Edmonton. The four neighbourhoods with the highest population are Oliver, Summerside, Downtown, and the Hamptons. Together the Settled North, the Settled South-East, and the Settled West, are the most populated Reporting Units, containing 41% of Edmonton's total population.

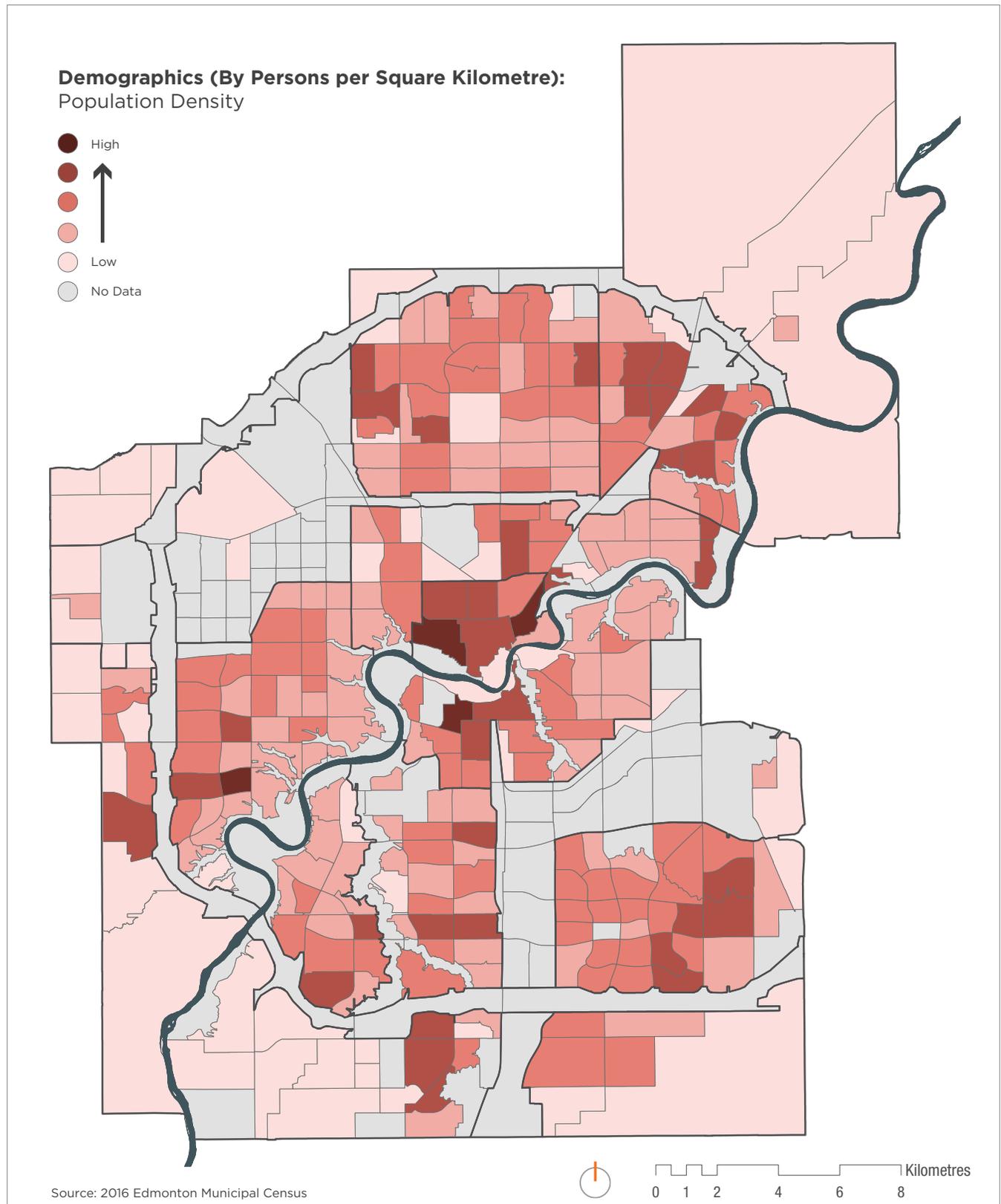
Another useful metric for evaluating population trends and potential demand is population density (see Map 2.1). The Downtown Core, as might be expected, has the highest population density in Edmonton, with 2,848 people per square kilometre. Oliver is the only other neighbourhood that has both a high overall population and a high population density. Other neighbourhoods with the highest population densities include Garneau, Boyle Street, and Callingwood South.

Residents in the Downtown Core and the City Centre, which have a higher multi-residential dwelling density, often have less access to private open spaces usually associated with other types of residential dwellings. As a result, areas like these have a higher potential demand for publicly accessible open space.

Outside of the denser Downtown Core and City Centre South, Callingwood South also has a very high population density. This trend contrasts with other nearby neighbourhoods such as Callingwood North and Ormsby Place, which have intermediate population densities. Callingwood South's higher population density is a result of its numerous multi-residential dwellings. Despite its suburban location, it has a population density similar to more centrally located neighbourhoods in the Downtown Core or City Centre South. This reinforces the importance of considering population requirements and trends at multiple scales.

Neighbourhoods with the lowest population densities are typically in the newly developing communities outside the Anthony Henday, or within communities that have a high proportion of non-residential land uses, such as golf courses, rail corridors, redevelopment sites, or large open spaces.

MAP 2.1 Edmonton Municipal Census Population by Neighbourhood



Age Cohorts

Introduction

The age of a population – whether that population is measured citywide or at the neighbourhood scale – has a large impact on the types of facilities, amenities, and programs demanded across the open space system, with significant implications for open space planning. This Stage 3 Summary Report examines age demographics in four categories with distinct demand patterns: children (less than 9 years old), youth (10 to 19), working age adults (20 to 54), and older adults (aged 55 and up).

CHILDREN

A greater proportion of children within a neighbourhood suggests a localized need for amenities and programs oriented to that age cohort: playgrounds; splash pads; family-friendly winter activities, like tobogganing or skating; and educational and recreational programs, like Green Shack. However, research shows that open space planners must remain vigilant to changing age-specific needs, trends, and opportunities. The 2013 Alberta Recreation Survey indicates that participation in organized sports, for instance, has declined substantially over the past several decades: 12% of households participated in soccer in 2013 (down from an average of 19% from 1981 to 2008), and 13% of households participated in ice hockey (down from an average of 21% from 1981 to 2008). Such trends suggest that assumptions about the provision of amenities like sports fields may need to be reconsidered. Instead, one BREATHE engagement event suggests that children are receptive to more innovative forms of open space programming, like rooftop playgrounds, archery, outdoor movies and a “tube floating” water park, among others. The Child-Friendly Edmonton initiative presents additional opportunities exist to engage children in the design of outdoor open spaces in the future.

In addition to changing preferences, Canadian children are 30% less active than 30 years ago, and childhood obesity has tripled. The Alberta Recreation and Parks Association advises coordinated action among recreation, health, and education providers to foster physical literacy from a young age. Contact with nature and informal opportunities for play are two ARPA recommendations. Both have implications for open space supply and services in neighbourhoods with larger populations of children.

Finally, one must also acknowledge that the geographic distribution of children and the transition of their age cohort to adolescence also influences service provision.

Areas with declining proportions of children (either as those children age in place or as families migrate out of the neighbourhood) suffer from an associated decline in the demand for child-oriented services and amenities, resulting in school closures (with implications for access to school facilities like washrooms or gymnasiums, and the disposition of vacant public land and buildings) and declining registration in children’s programs.

YOUTH

Similar to children, youth have interests and usage patterns that create demands unique from other age cohorts. Unfortunately, this demographic is underrepresented in research about recreational and open space needs; for example, the 2013 Alberta Recreation Survey targets respondents over the age of 18, and questions about household activities do not collect information about the age of the participant. The British Columbia Recreation and Parks Association advise that facilities to support youth participation are needed to combat youth inactivity and overweight/obesity, and the Alberta Recreation and Parks Association identifies an urgent need for afterschool care and outreach programs. A community needs assessment from Richmond suggests that peer communication campaigns may be more effective at raising awareness of such facilities and programs than traditional marketing approaches. Thus, while determining which neighbourhoods support higher proportions of youth can help to identify a need for specialized facilities or communication methods, more research may be required to develop an empirical basis for amenity or activity preferences among this age cohort. This is a particularly salient suggestion for Edmonton, where according to Statistics Canada, the population of Indigenous children and youth (aged 0 to 19) is growing at a much faster rate (22% from 2001 to 2011) than non-Indigenous residents (7% over the same decade).

WORKING AGE ADULTS

Adults of working age form the predominant age cohort in every major Canadian city (the median age in Canada is 40.6 years), and are well represented in research regarding parks, recreational, and community needs and preferences. Working age adults are also well-represented in the online questionnaire and spatial survey conducted as part of the BREATHE engagement process, whose findings about open space needs and preferences will be discussed further in the next section of this Report. However, some general trends are important

to note here. For example, Edmonton has a relatively high proportion (24% of Edmonton Municipal Census respondents) of “echo boom” or “millennial” adults aged 20 to 34, who previously would have been associated with high fecundity, and thereby associated with planning for child- or family-oriented open spaces and amenities, based on the behaviour of the previous Baby Boom generation. In reality, the current generation has much lower fecundity rates than previous generations: 1.61 children per woman according to the 2011 Canadian Census, down from a peak of 3.94 children per woman in 1959. This can be attributed to a general delay in childbearing until later in adulthood, and having fewer children overall. The implication for open space planning is that, with a median age of 36, Edmonton has already surpassed “peak child” bearing years for the current generation (according to Statistics Canada, age 30 is the average childbearing age) and must start planning for adults who have little demand for family-oriented offerings.

OLDER ADULTS

Like the rest of Canada, Edmonton has a high proportion (27% of Edmonton Municipal Census respondents) of adults aged 55 and older. According to the Alberta Recreation and Parks Association, one in four residents will be considered seniors by 2050. While this demographic shift is associated with an increased demand for less strenuous physical activities and rehabilitation services for seniors, the Baby Boomer generation tends to be more active than previous generations, so open spaces must supply leisure services previously associated with a more middle-aged demographic. One Community Needs Assessment from Richmond, BC finds that older adults prefer programming that is predictable and socially-oriented, but resist the stigma associated with specialized “seniors” programming or facilities. Finally, older age cohorts also experience shifts in their physical mobility and modes of transportation, which have implications for open spaces in terms of accessible design (e.g. adequate curb cuts, appropriate surfacing materials, seating areas for rest breaks) and vehicular accessibility (e.g. parking lots close to amenities, public transit access).

Census Findings

The majority of Edmonton's population is comprised of adults aged 20 to 54 (51%), followed by older adults aged 55+ (27%). Children aged 0 to 9 and youth aged 10 to 19, together make up less than a quarter of the

population (12% and 10%, respectively).

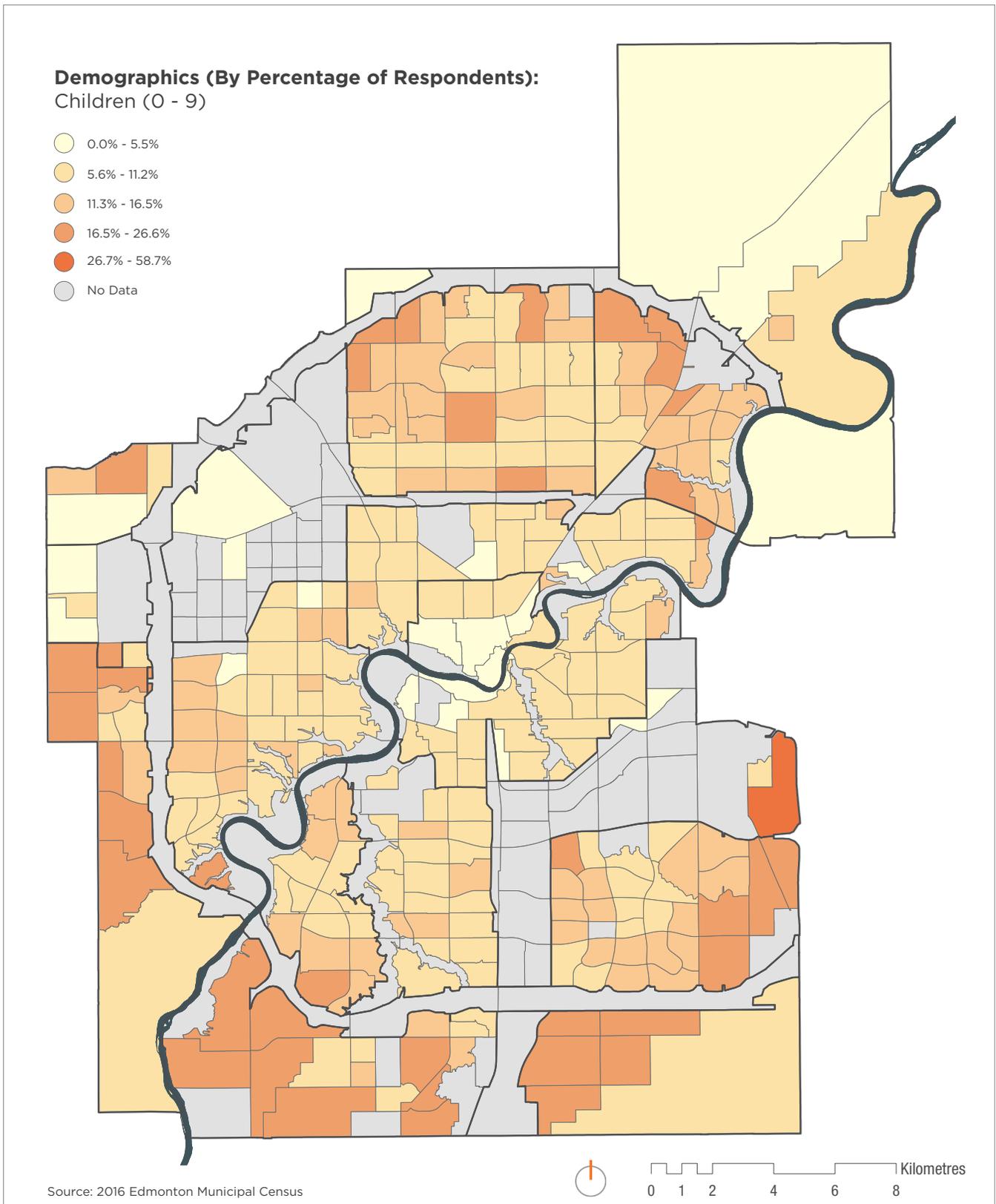
Children aged 0 to 9 represented on average 8% of the population within any given neighbourhood, to a maximum of 59% in the Maple Ridge Industrial neighbourhood. Generally, children are more prevalent within neighbourhoods that are further from the core, reflecting the settlement of young families in Edmonton's newly developing communities. Children form more than 20% of the population by neighbourhood in the southeast, northeast, and southwest corners of the city: Developing Fringe South-East and Settled South-East; Settled North and North-East; and Developing Fringe West and South-West.

Children are least prevalent in neighbourhoods in the Downtown Core and City Centre South, despite these areas having the highest population densities in the city (see MAP 2.1). Youth are located in similar spatial patterns to children: largely in suburban and newly developing neighbourhoods.

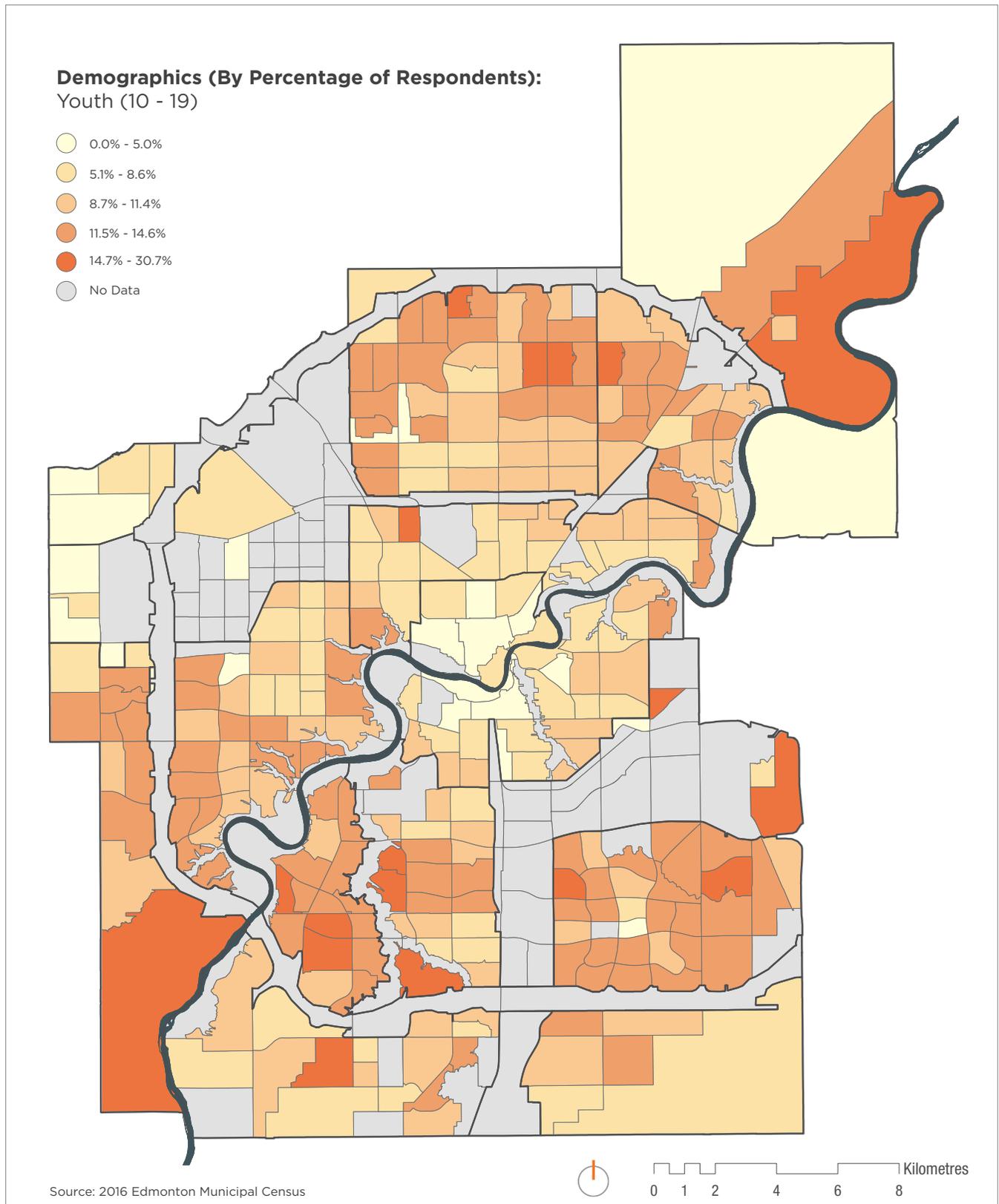
By contrast, adults aged 20 to 54 constitute more than 80% of the population by neighbourhood in CPR Irvine, Armstrong Industrial, Lambton Industrial, and River Valley Walterdale neighbourhoods. This age group represents a higher proportion of the communities in the Downtown Core and the Developing Fringe (South-East and North-East) Reporting Units. Adults are also concentrated in Oliver, Summerside, Downtown, Garneau, and the Hamptons, even if they are not the largest age demographic for the community.

The Settled West Reporting Unit is the area with the largest concentration of older adults in Edmonton. Generally, neighbourhoods with the highest proportion of older adults are not spatially clustered; rather, they are distributed throughout the city. For example, the populations in Rural West Big Lake, Kensington, Terra Rosa, Virginia Park, and Mill Woods Town Centre all contain more than 50% older adults. The majority of older adults reside within the boundaries of Anthony Henday Drive.

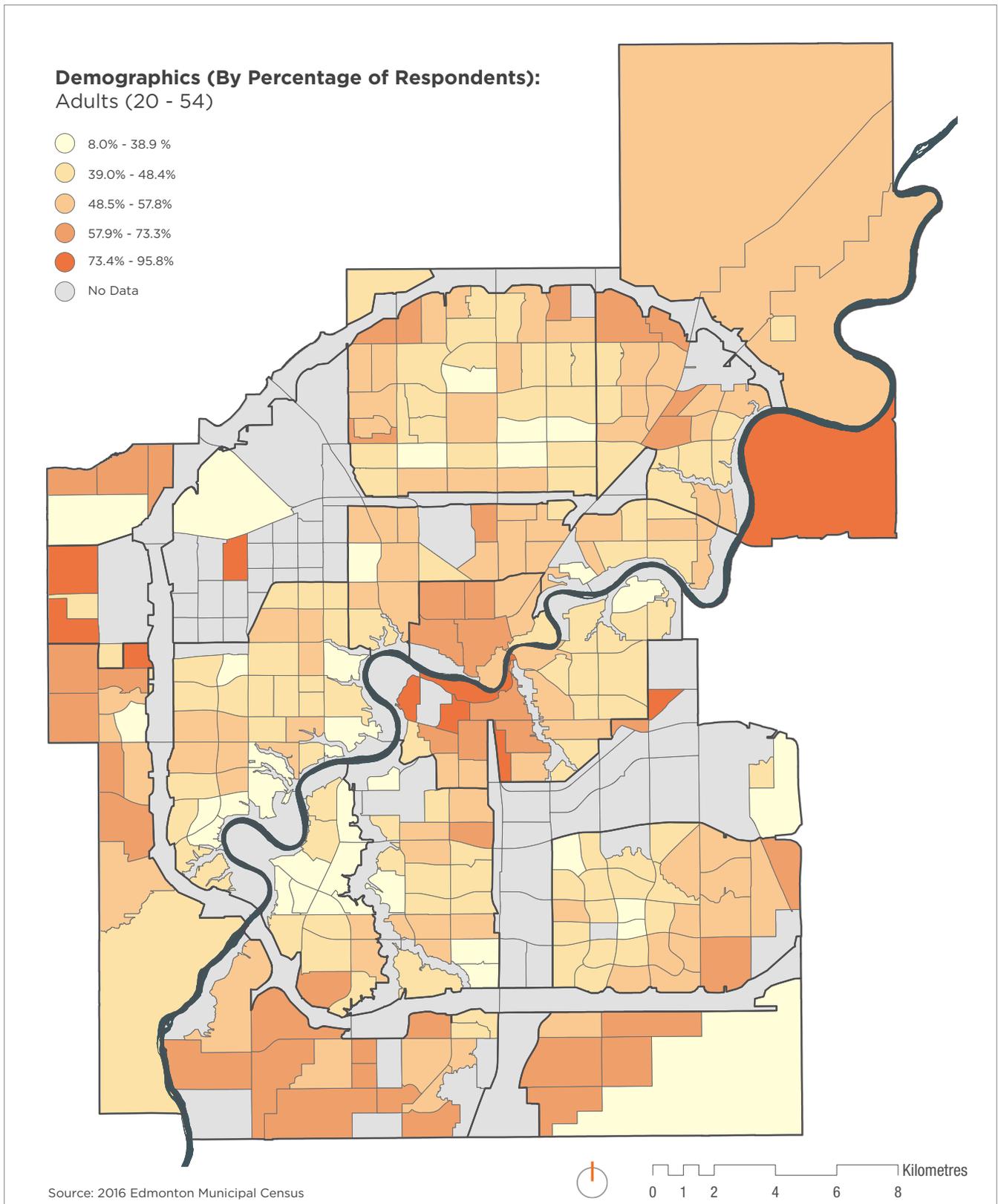
MAP 2.2 Edmonton Municipal Census Age Cohorts - Children Aged 0 to 9



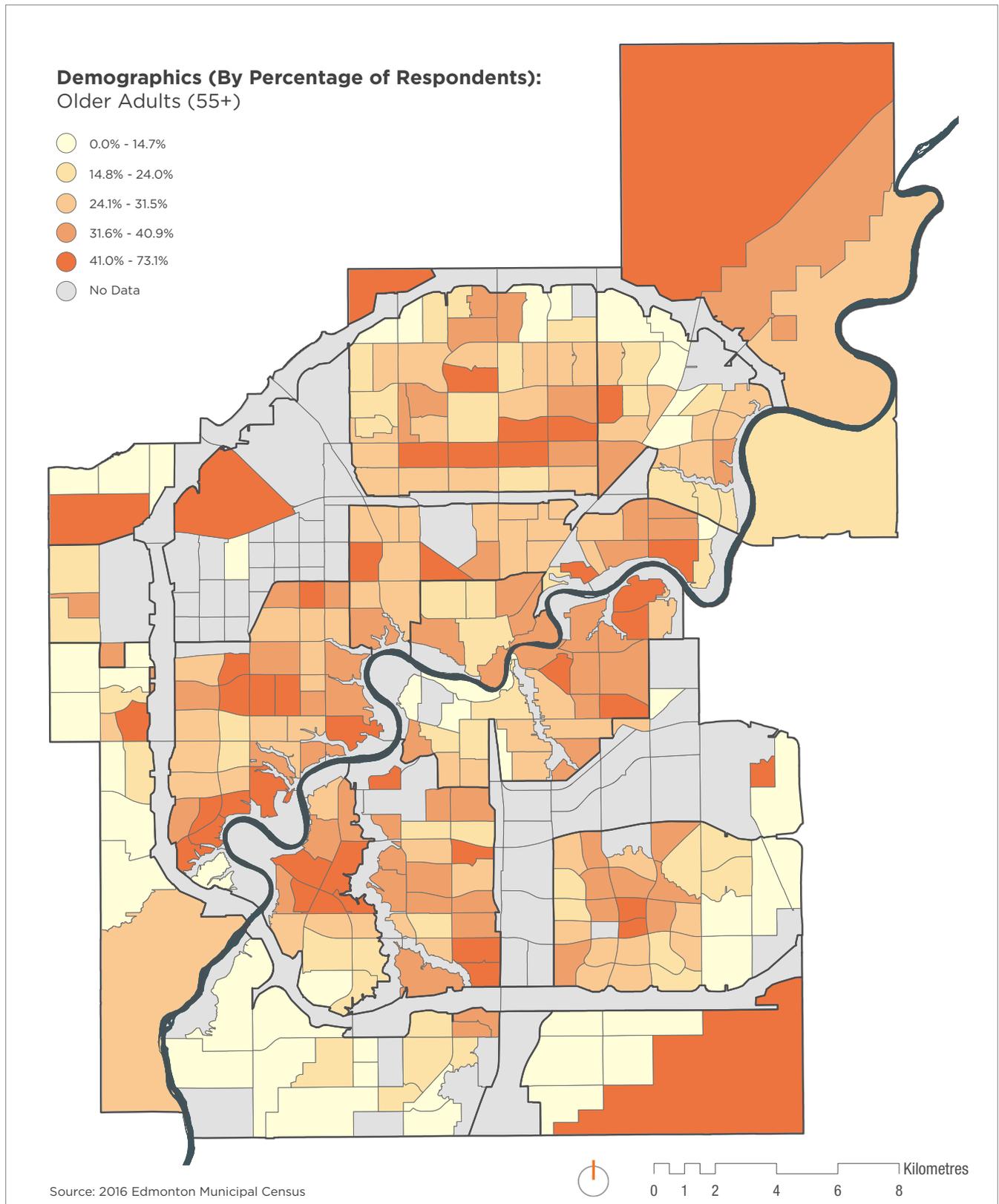
MAP 2.3 Edmonton Municipal Census Age Cohorts - Youth Aged 10 to 19



MAP 2.4 Edmonton Municipal Census Age Cohorts - Adults Aged 20 to 54



MAP 2.5 Edmonton Municipal Census Age Cohorts - Adults Aged 55+



Income

Introduction

The primary influence of household income on open space demand is related to the affordability of an open space or its facilities. Facilities or programs in neighbourhoods with a higher proportion of lower income residents may have poor usage rates if their funding relies on user fees. Fortunately, the City of Edmonton provides the Leisure Access Program, which provides free admission to participating recreational facilities and discounted rates for recreational and leisure programs for qualifying Edmontonians, including those with lower incomes. However, for people who do not qualify for this program, accessing recreational or cultural facilities in open spaces (or accessing special events, activities or festivals in open spaces) may be prohibitively expensive, especially as user fees are increased over time. Indeed, participants in the 2013 Alberta Recreation Survey identify cost – both admission/registration fees, and the cost of equipment or supplies – as one of the most significant barriers to participating in new activities. As a result, open space planners may find a high demand for low-cost or free open space programs and amenities in lower income neighbourhoods, while higher income neighbourhoods may be able to support a wider diversity of activities.

A study based on the 2005 General Social Survey also shows that lower income Canadians are less likely to participate in active leisure (i.e. active recreation) activities. The study suggests that higher income people may be better able to afford recreational equipment or classes, or have better access to fitness facilities at their place of work. Higher-income people may also live in neighbourhoods with easier access (e.g. closer proximity, greater safety) to recreational spaces and facilities. Not only does a higher income enable people to live in neighbourhoods with desirable characteristics – like plenty of good quality open space and recreational amenities – but because communities must help raise funds for open space amenities like playgrounds and lighting, higher income neighbourhoods may be better able to afford enhanced amenities than lower income neighbourhoods, as well.

Census Findings

Most Edmontonians (51%) earn an annual household income of \$30,000 to \$100,000. An additional 30% of residents earn between \$100,000 and \$250,000. A minority of residents earn under \$30,000 (16%), which is slightly less than the low income cut-off for a two person household in Edmonton for 2016 (\$30,625). Only 3% of

residents earn a household income over \$250,000 per year.

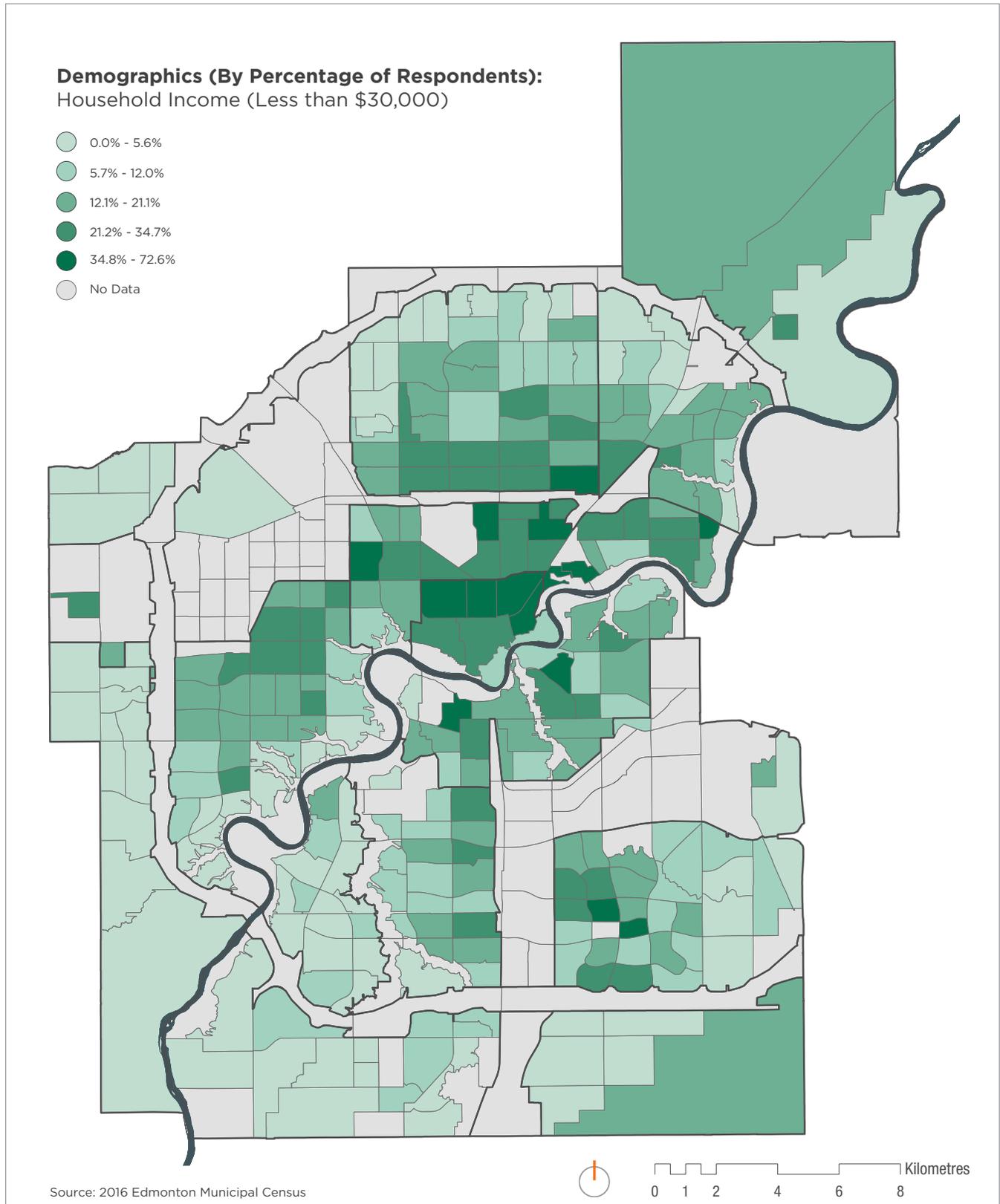
Among Reporting Units citywide, the greatest number of Edmontonians earning under \$30,000 live in the Downtown Core and City Centre North. They also represent the largest income demographic in these areas: an average of 26% of the population in the Downtown Core, and 21% of the population in City Centre North. In the neighbourhoods of Virginia Park and McCauley, this group represents more than 50% of the community. However, it should be noted that the largest number of residents in this income bracket are located in Oliver, Garneau, Downtown, and Boyle Street, even though they comprise a minority of the residents (30%) in these neighbourhoods.

Similarly, the Downtown Core contains the largest number of residents earning between \$30,000 and \$100,000, but this demographic group represents more than 60% of the population in numerous neighbourhoods at the periphery of the city, such as Maple Ridge Industrial, Rural West Big Lake, Kinokamau Plains Area, and Starling. On average, around 50% of the population in the Settled North-East, Settled North, Settled South-East and Developing Fringe South-East Reporting Units belong to this income bracket.

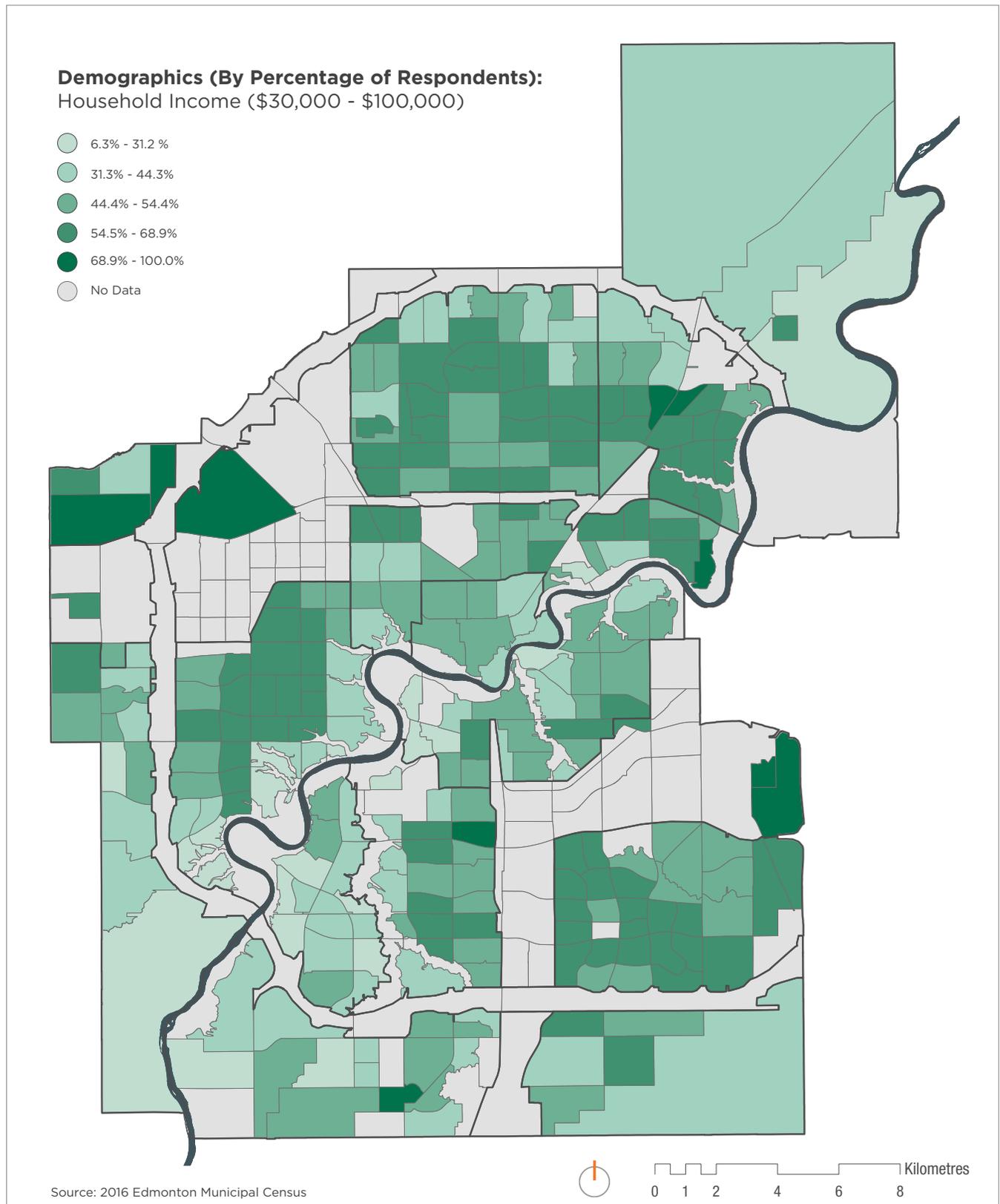
Residents who earn between \$100,000 and \$250,000 are concentrated in neighbourhoods near the periphery (excluding industrial areas) and the southwest part of the River Valley and Ravine System. This includes the Developing Fringe West, Developing Fringe South-East, and the Settled South-West B Reporting Units, where more than 40% of the populations falls within this income bracket, on average. Notably, 50% of the population of Summerside and the Hamptons is comprised of this demographic group, and they also contain the greatest number of residents in this income bracket overall.

Residents who earn more than \$250,000 annually live mostly around the southwestern quadrant of the city, predominantly within neighbourhoods along the river valley and ravines. The Settled South-West B Reporting Unit has the highest representation for this income bracket (12% of the population, on average). In other Reporting Units, this group represents 5% or less of the population. The neighbourhoods of Donsdale, Ogilvie Ridge, Grandview Heights, Westbrook Estates, and Quesnell Heights stand out by having over 25% of their populations represented by this income bracket, whereas Windermere, Magrath Heights, and Summerside have the highest number of residents from this demographic overall.

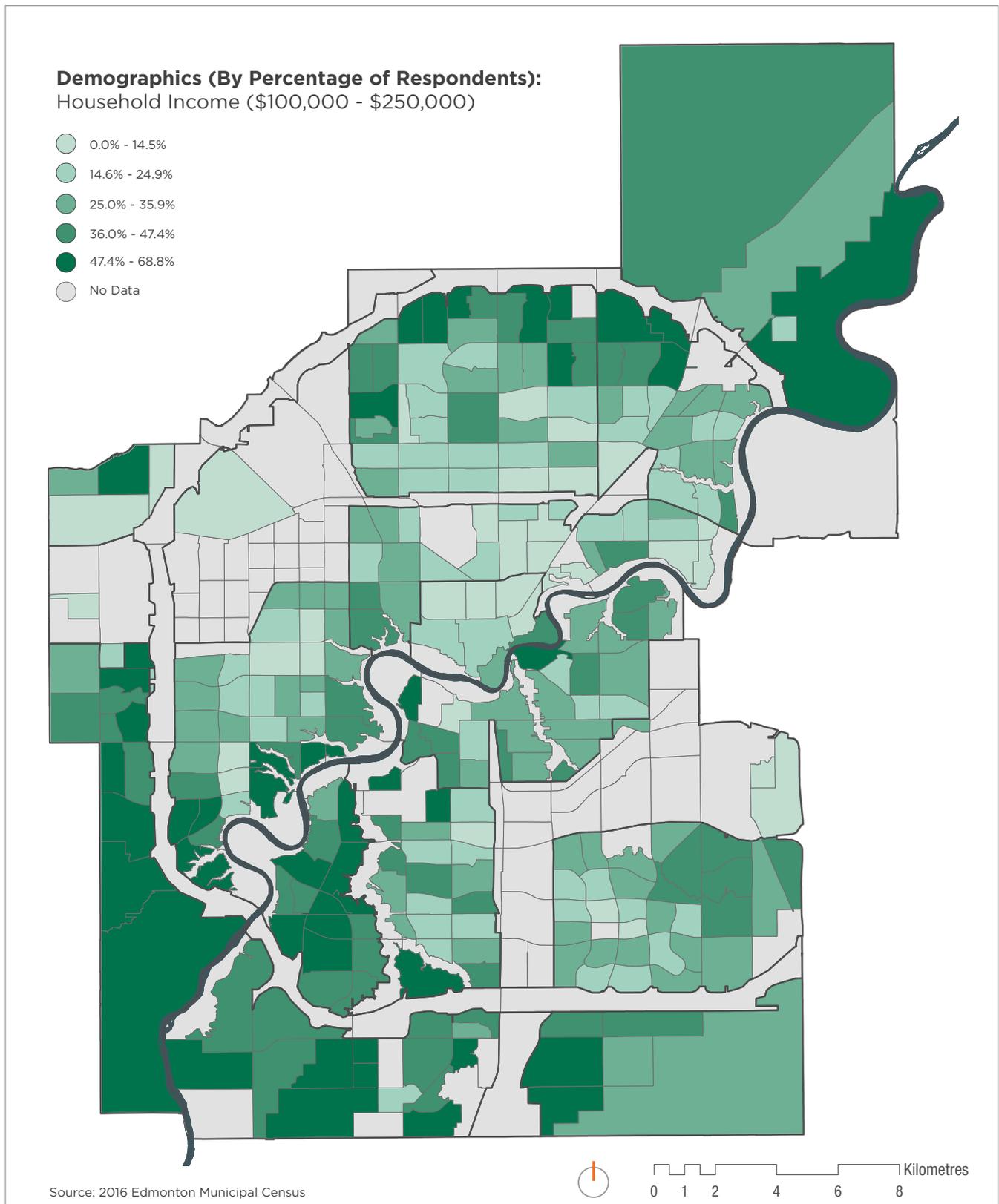
MAP 2.6 Edmonton Municipal Census Household Income - Under \$30K



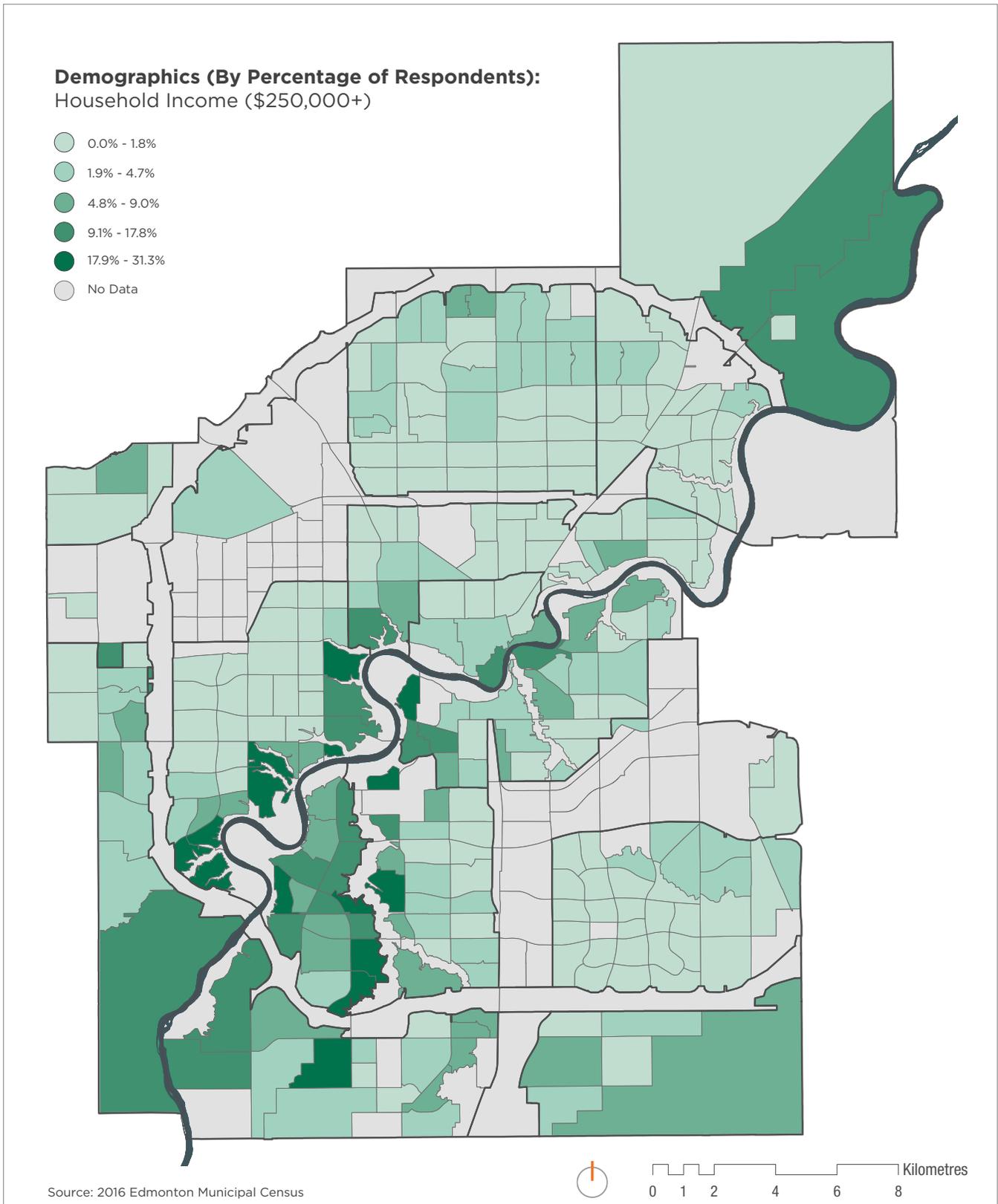
MAP 2.7 Edmonton Municipal Census Household Income - \$30K to \$100K



MAP 2.8 Edmonton Municipal Census Household Income - \$100K to \$250K



MAP 2.9 Edmonton Municipal Census Household Income - Over \$250K



Language

Introduction

Populations whose first language is not English can influence open space demand in two ways. First, non-English speakers may have difficulty understanding outreach material, open space signage, and City employees (e.g. bylaw enforcement, recreation program leaders, Community Recreation Coordinators) who communicate primarily in English. In neighbourhoods with high concentrations of this demographic, there may exist a latent demand for more accessible information about open spaces and programming. To address these language barriers, one Community Needs Assessment from Richmond, BC, recommends greater attention to targeted (language-specific) marketing, advertising staff who speak multiple languages, and partnerships with ethnic or cultural organizations who have direct access to non-English speakers who can assist the City with awareness and communication.

Secondly, concentrations of non-English speakers are usually indicative of a minority ethno-cultural group who may have culturally specific open space demands. For example, some ethno-cultural groups place a premium on large family or community gatherings, with implications for demand on amenities such as picnic shelters and washrooms, and supportive policies/regulations surrounding facility bookings and large gatherings. Other ethno-cultural groups place importance on physical modesty, resulting in greater demand for amenities such as private changing areas, or compromised demand for activities where cultural needs (e.g. specialized attire) conflict with facility rules (e.g. clothing in outdoor swimming pools). In response to such issues, recreation and parks associations recommend greater cultural sensitivity and training among City employees and partners in program delivery; adjusting programming, policies, and services to reflect the diverse interests of ethno-cultural communities; and promoting education, awareness, and celebration of cultural diversity among the general public.

In BREATHE engagement conversation with local newcomer organizations, similar barriers and demands were identified. While some may be consistent to other demographic groups – such as limited public transit access, safety concerns, a desire for community gardening opportunities, and a desire for open space-adjacent commercial amenities – others clearly relate to newcomers' unique demands, such as difficulty in accessing information about open spaces, a desire for open spaces to accommodate community gatherings and diverse sports, and for low-cost winter events to provide opportunities for socialising and new winter activities.

Census Findings

In Edmonton, French is the most prevalent non-English first language (spoken by 9% of the population), followed by Punjabi (6%) and Mandarin (5%).

Punjabi is the dominant non-English first language for the Settled South-East Reporting Unit (40% of the population, on average) and the Developing Fringe South-East (44% of the population). The neighbourhood with the highest proportion of non-English speakers is Laurel (72% of the population), where Punjabi is the primary non-English spoken language.

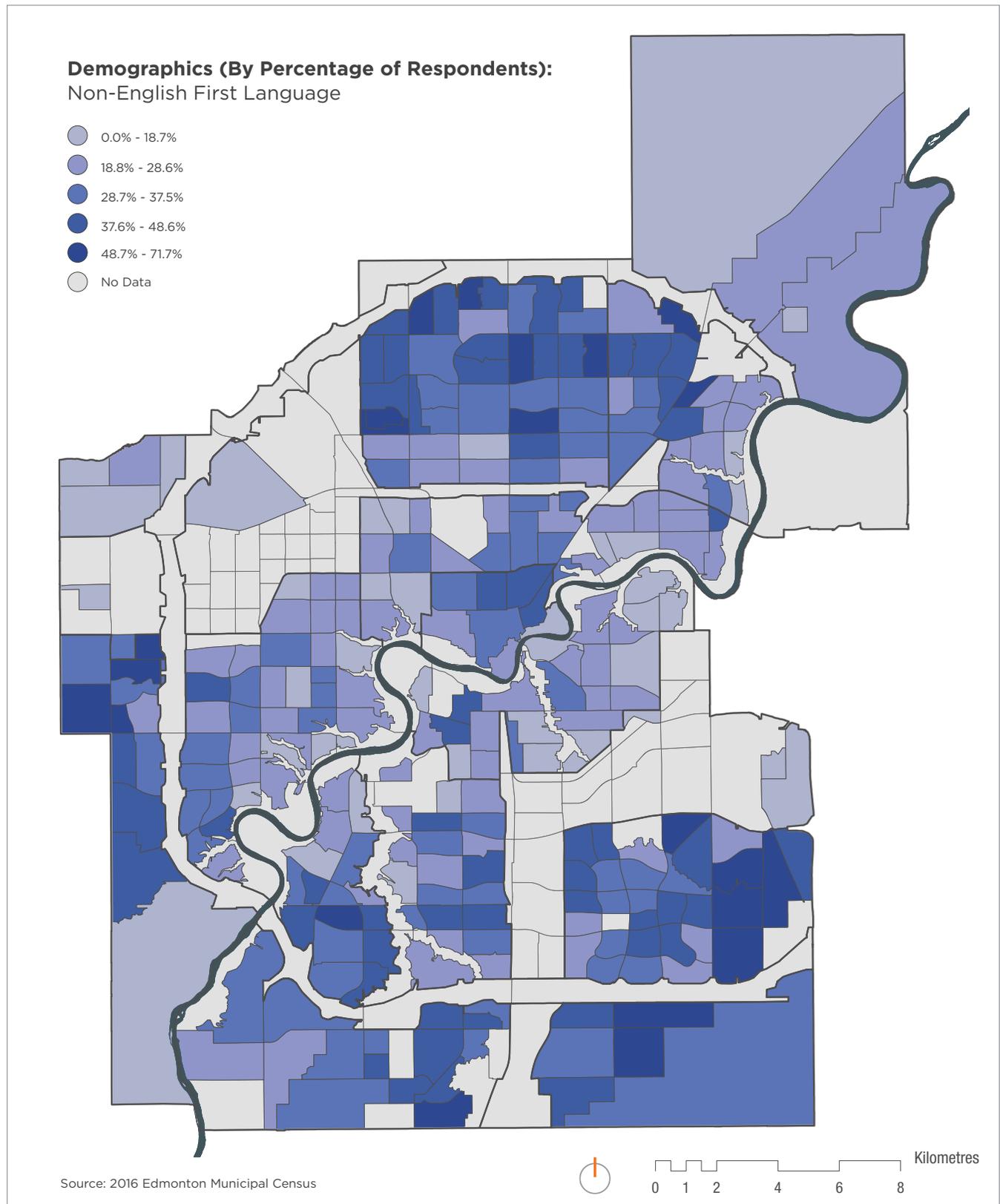
In the Developing Fringe South-West, Mandarin speakers account for 37% of the population. The neighbourhood with the highest proportion of Mandarin speakers is Garneau (42% of the population). The Settled North Reporting Unit also contains a high proportion of non-English speakers (37% of the population), but there is a greater diversity of non-English first languages being spoken, including Arabic, Cantonese and French.

Interestingly, although French is the most prevalent non-English speaking language in the city overall, French speakers are not clustered spatially. As a result, they do not comprise the predominant non-English language in any given Reporting Unit, in contrast with Punjabi and Mandarin speakers. This trend does not apply at the neighbourhood scale, however, as several neighbourhoods have relatively high proportions of French speaking residents, including Oliver (24% of the population), Bonnie Doon (33% of the population), and Downtown (31% of the population).

Together, these trends indicate that there is a potential demand for culturally-specific open space amenities in Reporting Units that have high proportions of Punjabi and Mandarin speakers, and especially in neighbourhoods whose population is more than 50% non-English. There are nineteen of these neighbourhoods in Edmonton, mostly located on the periphery of the city.

Nevertheless, although some parts of the city contain concentrations of non-English speakers, the most densely populated areas – like the Settled West, City Centre South, City Centre North, Settled North-East and Downtown Core – remain predominantly English, resulting in a lower non-English speaking population overall. However, the neighbourhoods of Downtown and Oliver, in the Downtown Core, have the highest number of non-English speakers by neighbourhood in the city, even if this number does not form a high proportion of the community for this area.

MAP 2.10 Edmonton Municipal Census Non-English First Language



Social Vulnerability

Introduction

For this Stage 3 Summary Report, concentrations of socially vulnerable people are identified using the Edmonton Social Vulnerability Index. The Index overlays a set of indicators or factors that impact healthy development, living conditions, and quality of life (e.g. employment, income, education, language, mobility, home ownership, etc.) to identify neighbourhoods of high, medium, or low vulnerability. Neighbourhoods are assigned a score for each indicator (low for the bottom 25% of neighbourhoods, medium for the middle 50%, high for the top 25%), then the scores are aggregated to create a composite measure of social vulnerability. Socially vulnerable individuals and groups are more likely to experience marginalization and exclusion, and are therefore susceptible to difficulty accessing social, political, and economic resources.

In the context of open space demand, socially vulnerable populations include newcomers to Edmonton who may be unaware of programs and amenities available in their neighbourhood, or may be unable to translate wayfinding or communication materials. Some socially vulnerable people may be precariously housed or homeless, and may use public open spaces for leisure, social gatherings, or shelter when other facilities are unavailable or inaccessible. In Edmonton, Indigenous peoples are disproportionately represented among the socially vulnerable for a variety of reasons, e.g. in 2005, median income for Indigenous households in Edmonton was \$46,100, while the median for Edmonton households as whole was \$57,085.

Open space planners must recognize that socially vulnerable people not only face greater barriers to accessing open spaces and their related programs, facilities, and amenities (due to factors such as language or cost), but also that their voices are often underrepresented in conversations about reducing barriers to access and meeting open space needs. The BREATHE engagement process attempted to rectify this effect by holding conversations with organizations that work with socially vulnerable populations and community members. Participants indicated that the following considerations are important for meeting the open space demands of socially vulnerable populations:

- » Free or low cost access to recreation programs and equipment rental, and for programs oriented to populations other than children/families
- » Sensitivity training and awareness among front-line staff

- » Safe, positive gathering spaces that promote community building and healing
- » Public washrooms and showers to maintain personal hygiene
- » Volunteer opportunities to help people build the skills required for employment, particularly among youth
- » Streamlined process and lower fees for road closures required for small community festivals

Census Findings

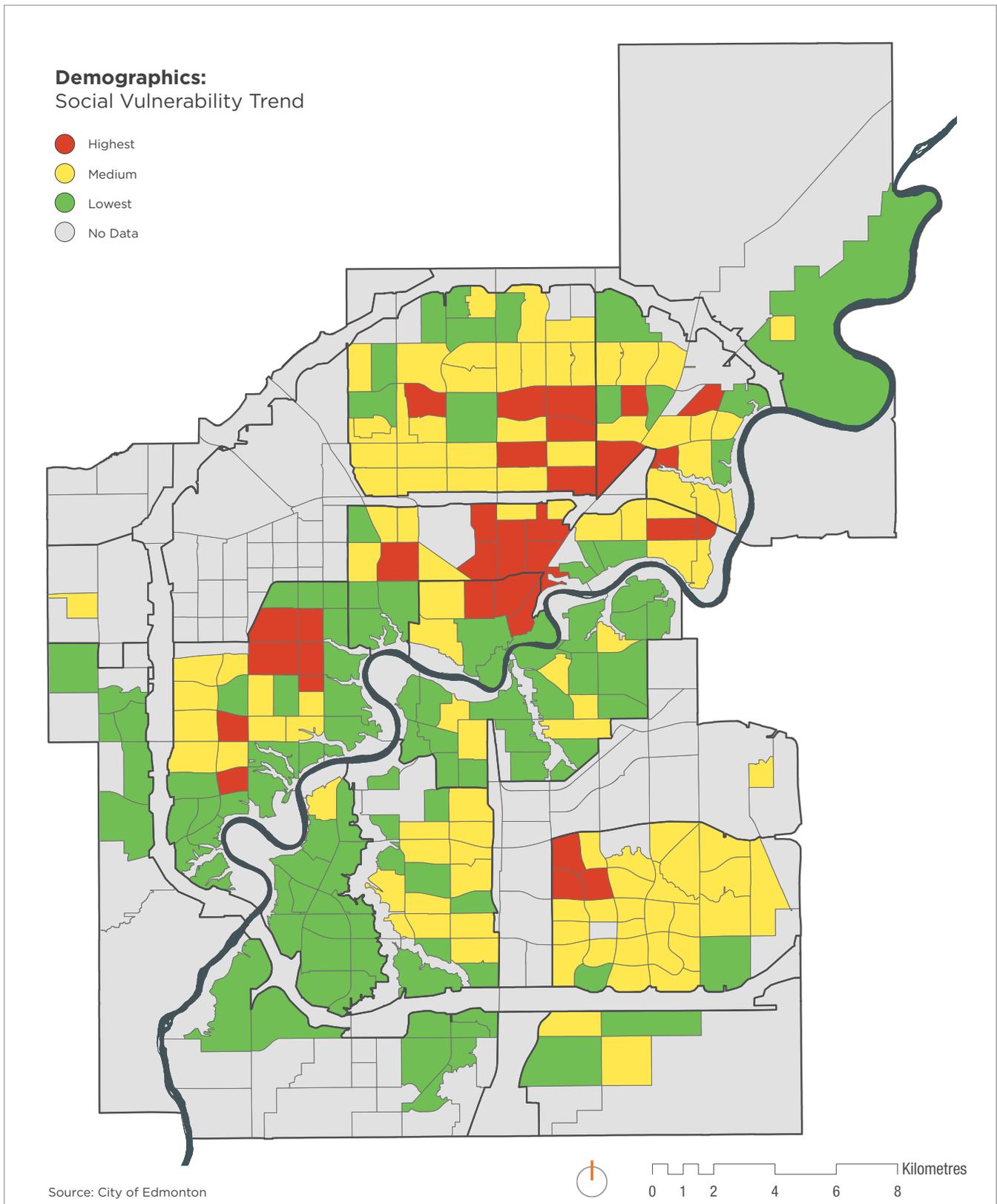
There are several areas within the city that have an aggregation of highly to moderately vulnerable neighbourhoods. In particular, there are four clusters of contiguous highly vulnerable neighbourhoods within the Settled South-East (3 neighbourhoods), Settled West (5 neighbourhoods), Downtown Core and Inner City North (9 neighbourhoods), and the Settled North and North-East (6 neighbourhoods).

The Settled South-East contains the highest proportion of non-English speakers (44% of the population, primarily Punjabi speakers), which might explain its high social vulnerability. The area has an average annual household income, and moderate walkability, bikability, and drivability to open spaces. By contrast, the Downtown Core and Inner City North have the largest clustering of highly vulnerable neighbourhoods, which contain the highest absolute number and the greatest proportion of residents within the lowest household income bracket (under \$30,000). These same residents have high walking, cycling and driving access to open spaces.

In the Settled North and North-East, there is also a high proportion of non-English speakers (37%). Residents speak a diversity of languages, predominantly Arabic, Cantonese, and French. Residents have an average annual household income, and moderate walkability, bikability, and drivability to open spaces. Finally, the Settled West has the highest proportion of older adults, and is mainly comprised of English speakers. 42% of the population in this Reporting Unit has an average household income (\$30,000 to \$100,000), but a cluster of highly vulnerable neighbourhoods in the area have an income of under \$30,000 (30% of the population, on average). Most of these residents have moderate walkability, bikability, and drivability to open spaces.

The least socially vulnerable neighbourhoods are near the River Valley and Ravine System, and have high incomes.

MAP 2.11 Edmonton Municipal Census Neighbourhood Social Vulnerability



Mode of Transportation

Introduction

Examining the primary mode of transportation Edmontonians use to commute (home to work) provides an indication of relative demand for the types of transportation infrastructure and connectivity that are needed to support open space accessibility. For instance, neighbourhoods that have a high concentration of walkers or cyclists may have a better quality of supportive infrastructure and route connectivity than other neighbourhoods, where an absence of quality sidewalks or bike paths may discourage active transportation. Note that results about transportation to work are not equivalent to preferences about transportation mode to open spaces, as most employment opportunities in Edmonton are located in the central core, while open spaces are embedded in neighbourhoods throughout the city. However, in neighbourhoods where commuters find supportive infrastructure and connectivity relevant to their preferred mode of transportation (and exert a demand for that infrastructure through their commuting habits), such infrastructure may support better access to open spaces as well.

indicating that people without personal vehicles (or those who choose not to drive) are more likely to “switch” to public transit than to modes of active transportation. The Downtown Core and the Settled South-West A Reporting Units, in particular, have the highest use of public transit. These areas also encompass the LRT line, and it is likely that LRT accessibility, and not public transit access in general, is exerting a strong influence on residents' travel habits.

Although driving is still the most prevalent form of transportation in the City Centre (North/South) and the Downtown Core, these areas also support transportation by cycling and walking at higher rates than anywhere else in the city. One explanation for this pattern may be that residents in central areas have better access to cycling and pedestrian infrastructure (see Stage 2 Report, Maps 4.1 to 4.4). However, it is also likely that additional factors affect the proportion of people who cycle or walk from any given area, such as mobility and age. For example, both the City Centre and the Downtown Core have the highest proportion of residents between the ages of 20 to 54 – a demographic that generally faces fewer physical mobility barriers than children or the elderly.

Census Findings

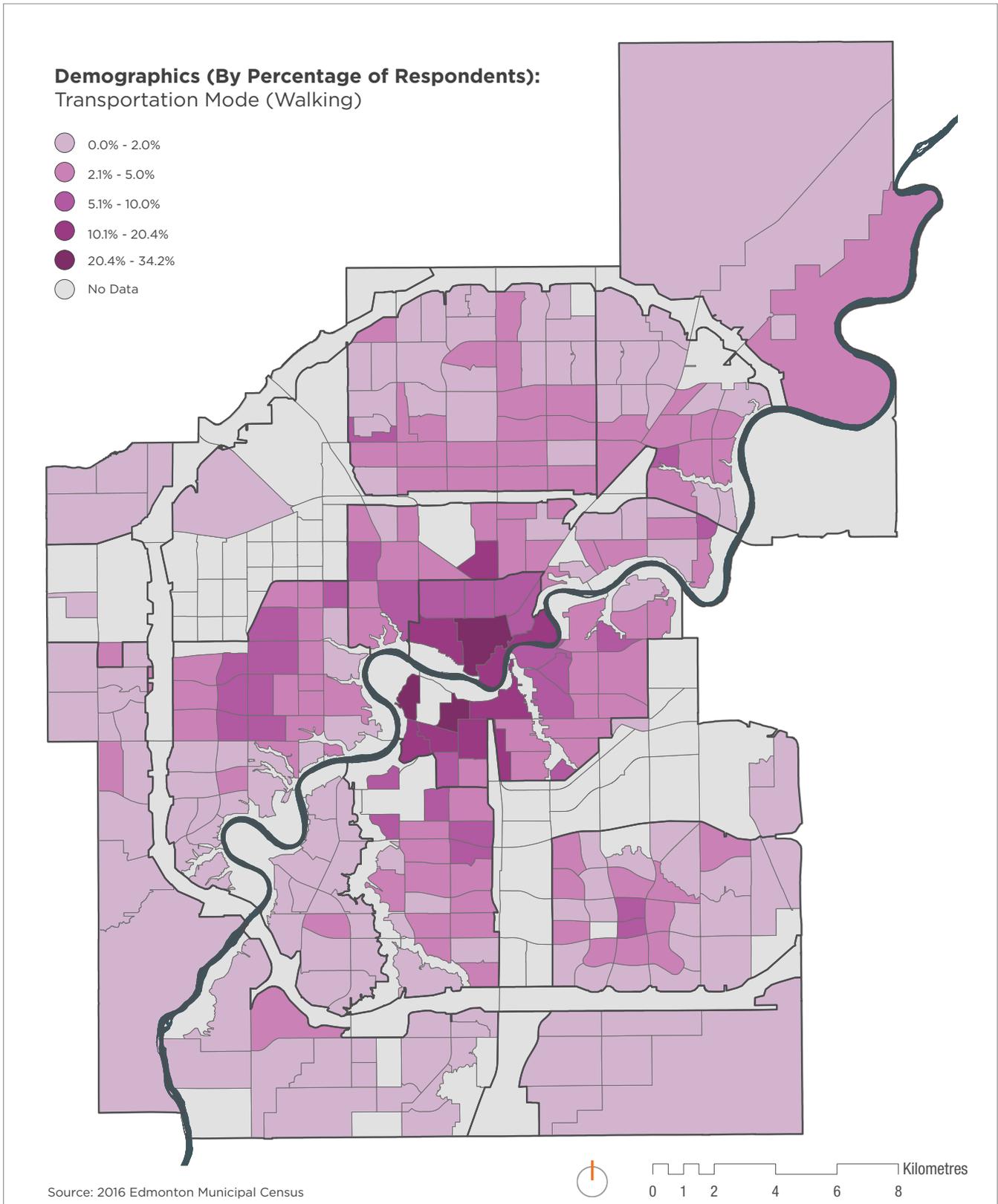
79% of Edmontonians choose their personal vehicle (either as driver or passenger) to travel between home and work, followed by public transit (14%), walking (4%), and cycling (1%).

Generally, the Downtown Core is the Reporting Unit where the highest proportion of walking commuters reside. Approximately 30% of residents from the neighbourhoods of Downtown, Garneau, and Windsor Park walk as their primary mode of transportation for commuting. Residents from the neighbourhoods of Strathcona, Parkallen, Belgravia, and Allendale have the highest use of cycling for commuting, although cycling is preferred by only a minority of the population (5% to 8%), even in these areas.

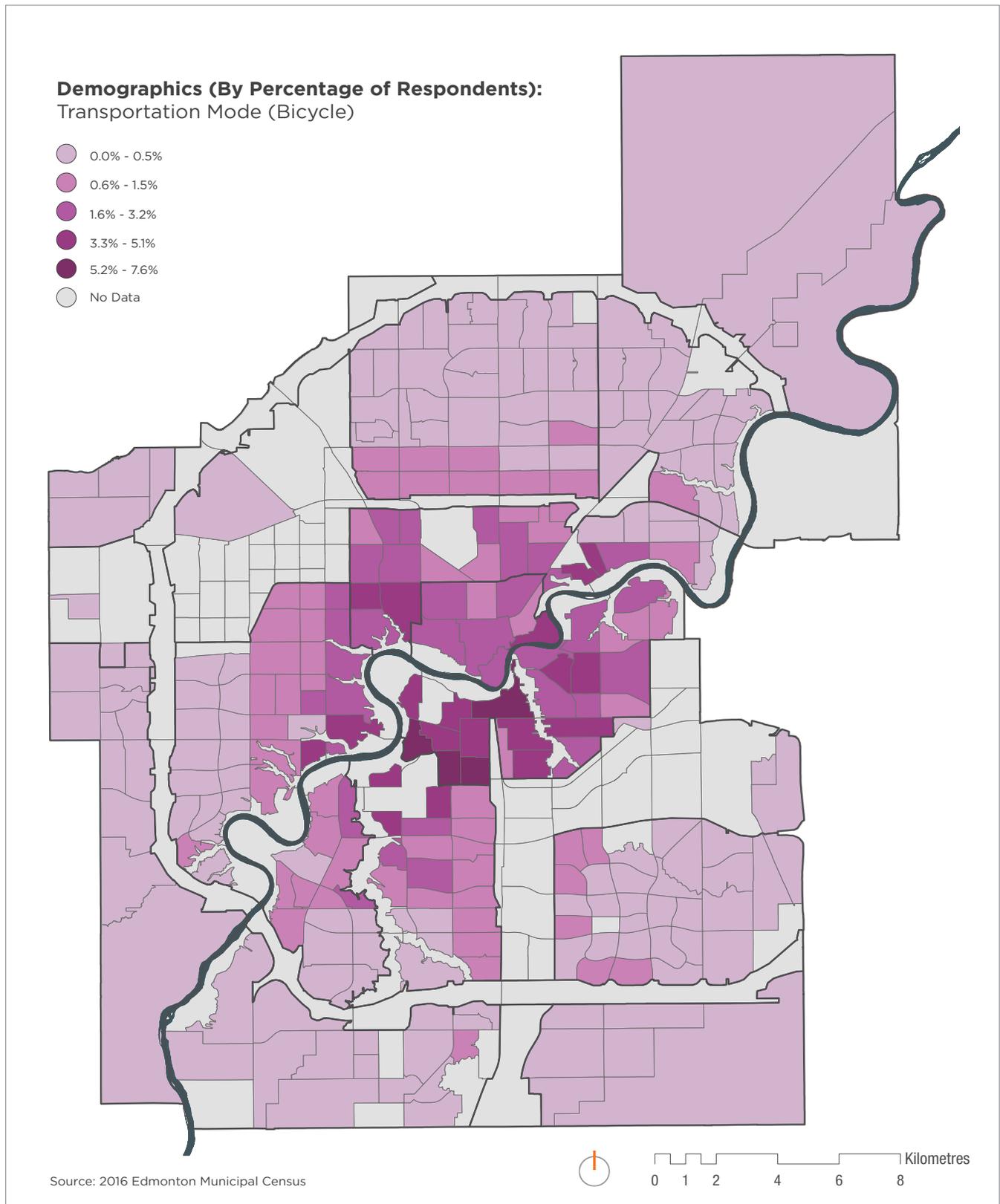
Walking and cycling become less prevalent as a mode of transportation in neighbourhoods located further from the centre of the city and the river valley. Both of which are used very little (by under 5% of the population) outside the Anthony Henday. In these areas, driving is the most prevalent form of transportation (more than 80% drive).

In many areas, where driving is used less as a primary mode of transportation, public transit is used more,

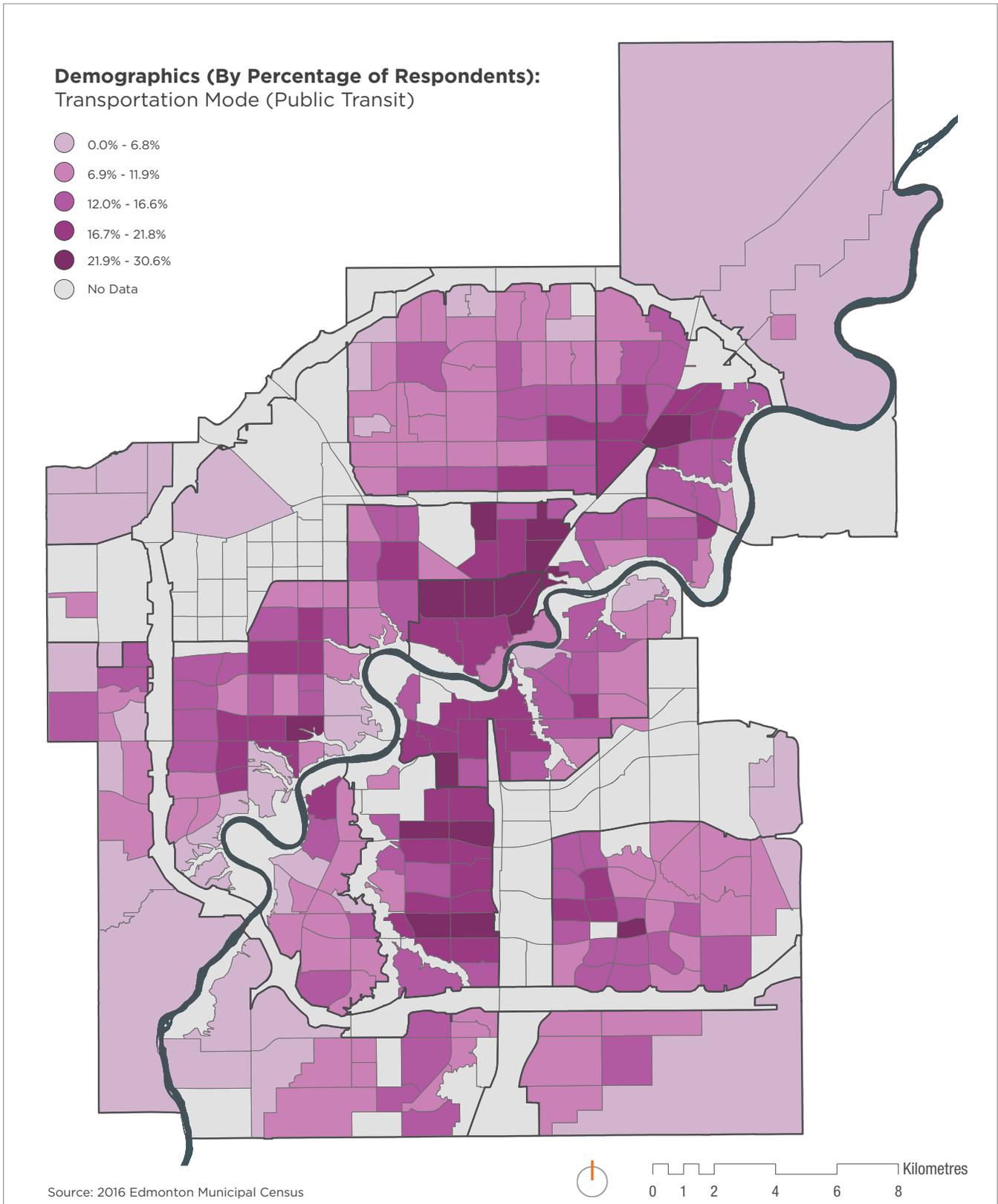
MAP 2.12 Edmonton Municipal Census Mode of Transportation (Home to Work) - Walking



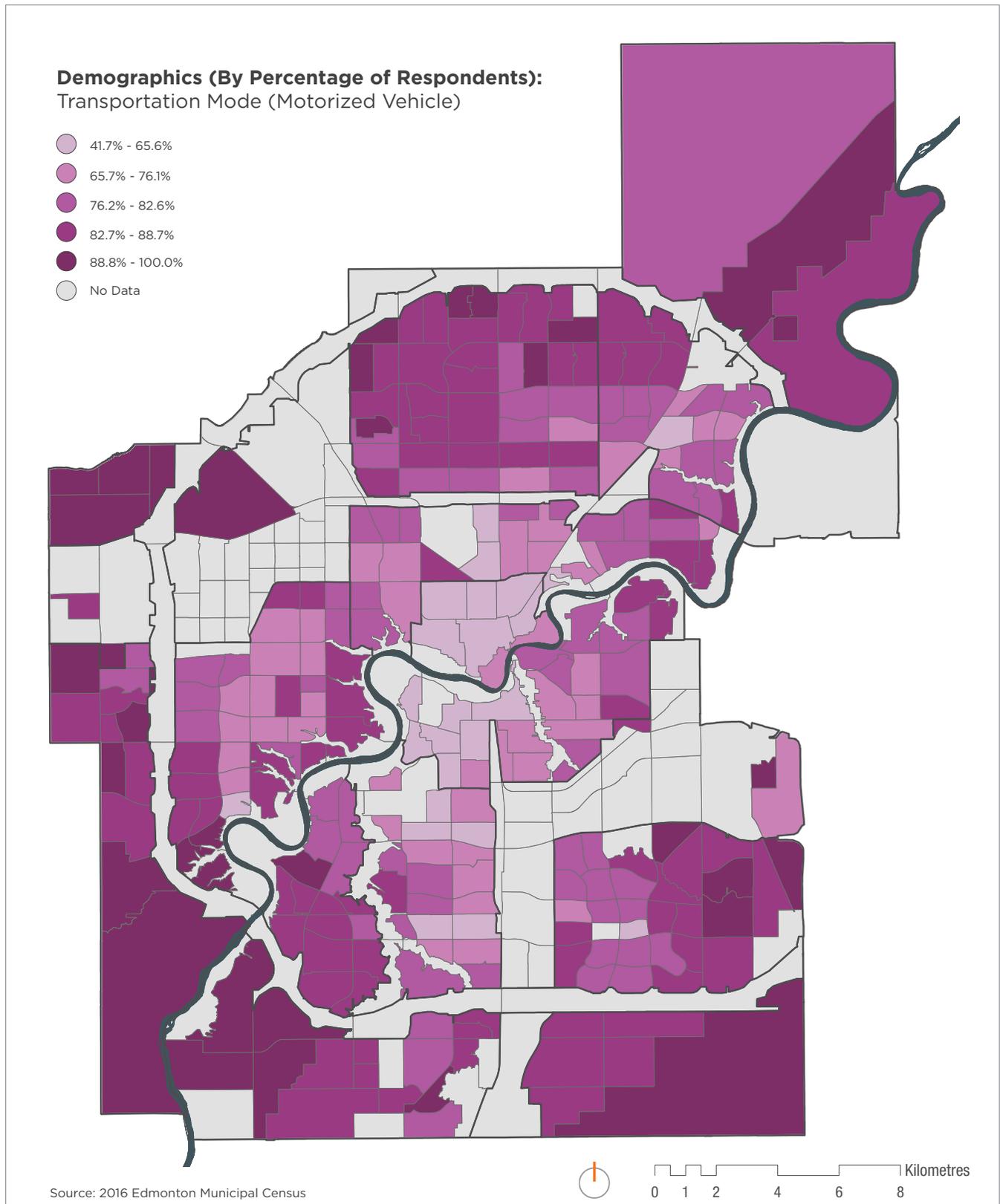
MAP 2.13 Edmonton Municipal Census Mode of Transportation (Home to Work) – Cycling



MAP 2.14 Edmonton Municipal Census Mode of Transportation (Home to Work) – Public Transit



MAP 2.15 Edmonton Municipal Census Mode of Transportation (Home to Work) – Driving



Other Demographic Groups

Because this Report presents only a summary of information, only certain demographic characteristics were selected for concentrated discussion. However, a holistic Green Network Strategy must account for the unique needs of diverse demographic groups. In particular, minority and marginalized populations are often underrepresented both demographically and during open space engagement. Special attention must be given to including a plurality of voices in planning for open spaces. For example, the design of open spaces strongly impacts accessibility for people who have limitations or impairments of sight, hearing or mobility. Design features such as the appropriate positioning and colour contrast of signage and other open space furniture; wheelchair accessible amenities; and parking areas located proximate to open space amenities can improve access and enjoyment for people of all ages and abilities. Likewise, people with developmental disabilities may require adapted or specialized services that accommodate their needs while enabling them to participate in recreational or leisure activities.

Different socio-cultural groups may also have unique needs and preferences with regards to open spaces. Some examples have already been discussed in the context of non-English speaking populations, but many people speak English as a first language while expressing behaviours and preferences connected with their cultural backgrounds. An especially important example in Edmonton is Indigenous peoples (First Nations, Métis and Inuit communities), who account for 5% of the total population and who maintain strong historical and spiritual connections with their traditional lands. This connection may manifest in an increased demand for amenities and spaces where Indigenous peoples can gather to practice and celebrate traditional activities, sports, spiritual ceremonies and other cultural observances. In Edmonton, a number of open space projects reflect Indigenous peoples' interest in recognizing and celebrating their heritage, such as the Métis-designed sculptural gateway to Beaver Hills House (Amiskwacîw Wâskâyhkan Ihâtwin) Park, and ongoing development of Kihciy Askiy at Whitemud Park. At the same time, many Indigenous people struggle with below-average incomes, above-average rates of Type 2 diabetes and other health issues, and an extremely young average age. These factors demonstrate the need for open spaces to support additional affordable and culturally appropriate wellness initiatives and facilities.

Finally, gender and sexual orientation influence the perception, access and experience of open spaces. Planning for an inclusive open space system should consider the needs of everyone, regardless of their gender or sexual orientation. Personal safety; harassment from other open space users or program personnel; regulations that compromise expressions of gender or orientation (e.g. breast feeding in public places); and facilities that are inequitably accessible based on gender or orientation (e.g. gendered washrooms and changing rooms that create barriers for the transgender community), must all be addressed in open space planning.



3 PUBLIC ENGAGEMENT



Public Engagement and Demand

One of the primary ways the project team measured open space demand was by asking Edmontonians themselves what they want and need from their open spaces – at workshops, open houses, pop-up events, through 2 online surveys (questionnaire and spatial survey), and through other means of engagement since April 2016. Some of the richest data were gathered through the online questionnaire and the online spatial survey, both of which accepted responses from the Edmonton Insight community and the general public from mid-May to the end of August. Over 2,200 completed questionnaires provide detailed information about residents' demands: what type of activities they enjoy, which amenities they value most, and what aspects of the open space system need work in order to satisfy their needs. Likewise, the spatial survey invited participants to provide feedback by dropping pins at specific locations on a map of Edmonton, and identified their likes and wishes for that location using an attached comment box. (A similar mapping exercise was available to participants at pop-up engagement events and Let's Talk Parks open houses, so these results have been aggregated with those from the online spatial survey). 288 unique open spaces were targeted for comment, the majority of which addressed municipal parks. Together, these two engagement methods have helped to answer the following questions:

- » Which activities and amenities do people demand the most?
- » Which activities and amenities provoke the most dissatisfaction or require the most improvement, reflecting a latent or unsatisfied demand?
- » How is open space demand distributed across the landscape? Are some parts of the green network in higher demand than others?
- » Where do respondents reside? What can this information reveal about patterns of accessibility and travel to open spaces?

Respondent Demographics

Because different people have different open space wants and needs, the project team recognizes the importance of understanding the demographic makeup of the respondents. For example, young children and the elderly are more likely to have mobility issues than working-age adults, so they might express a greater demand for certain open space amenities, such as seating. So while engagement feedback can be used to

help determine open space demand, that demand must be associated with the specific demographic expressing it, and efforts must be made to uncover other, explicit patterns of demand among demographic groups who are underrepresented among respondents.

FIGURE 3.1 Demographics of questionnaire respondents

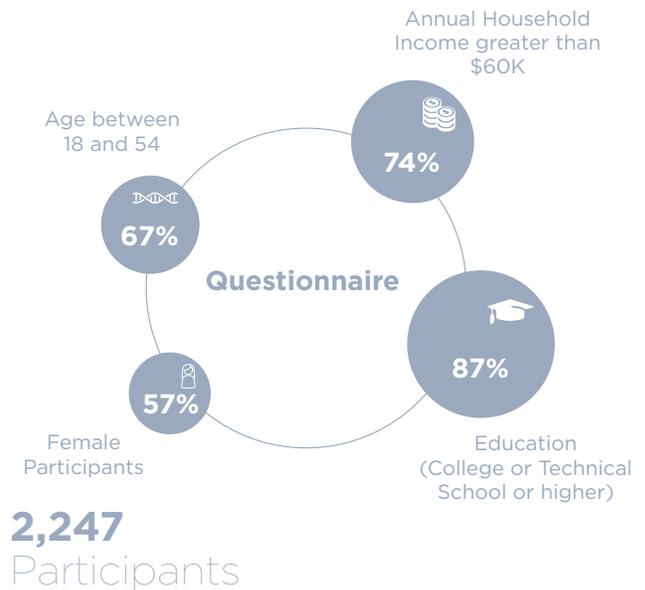


FIGURE 3.2 Demographics of spatial survey respondents (excluding in-person events)

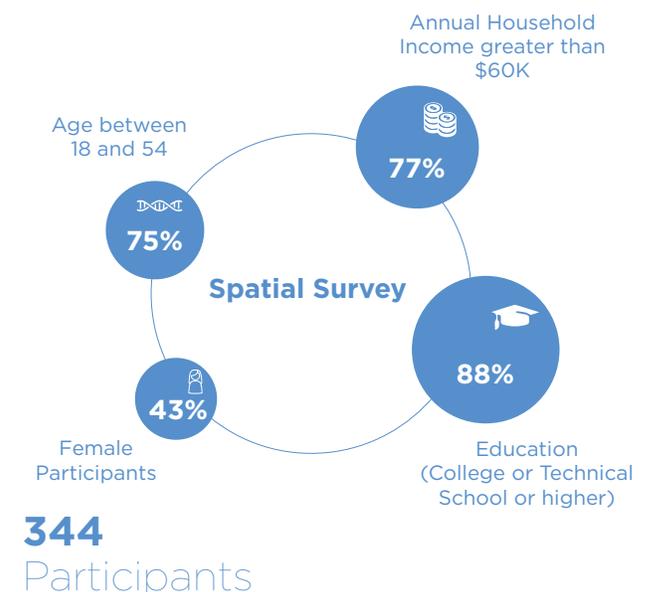


FIGURE 3.3 Proportion of respondents who use open spaces for activities of each Theme



Considered together, the questionnaire and spatial survey capture a proportion of male and female respondents that accurately reflects the real population in Edmonton, which the 2016 Municipal Census indicates is fairly equally divided between females (52%) and males (48%) (see Figure 3.1 and Figure 3.2). Unfortunately, the surveys do not accurately reflect Edmontonians' demographic makeup in a number of ways. Although low response rates reduce the reliability of the 2016 Municipal Census data, a comparison indicates that questionnaire and spatial survey respondents are wealthier and more highly educated than the general population (only 59% of whom earn greater than \$60K, and 62% of whom have a college or technical school education or higher). The surveys also substantially underrepresent age cohorts both under 18 years old and over 55 years old, which together account for approximately 49% of the Edmonton population. Other engagement methods – including targeted conversations with youth, older adults, Indigenous communities, and organizations that represent the interests of newcomers and socially vulnerable people – were designed to capture such underrepresented voices, and help to bridge the gaps in demographic representation found in the surveys.

Finally, this Report is intended to present a summary of open space demand. Only the most significant and relevant findings are discussed here. However, all information collected from the questionnaire and survey, together with supplementary information about current and future planning and demographics, will be further considered in subsequent project stages.

Open Space Use and Satisfaction

The vast majority of Edmontonians use open spaces during their daily or occasional routines – people watching on Whyte Avenue, nature appreciation in the River Valley, participating in a recreational league at one of the many community parks throughout the city. Only 3% of questionnaire respondents indicated that they do not use open spaces, because they already spend time in their own private yard, because their lives are too busy to visit open spaces, or simply because they are ambivalent about the value of open spaces.

Not only do the majority of Edmontonians use open spaces, but the majority also use them for multiple purposes, reflecting the multiple amenities and values they provide (see Figure 3.3). Nine out of ten respondents indicated that open spaces enable them to enjoy nature, reflecting the ecological resources and services that open spaces provide. Many also use open spaces to support their health and wellness, from recreational opportunities to space for relaxation and contemplation. Finally, over two-thirds of respondents attend the many outdoor events, festivals, and ceremonies that help the city celebrate its arts and culture.

Activities

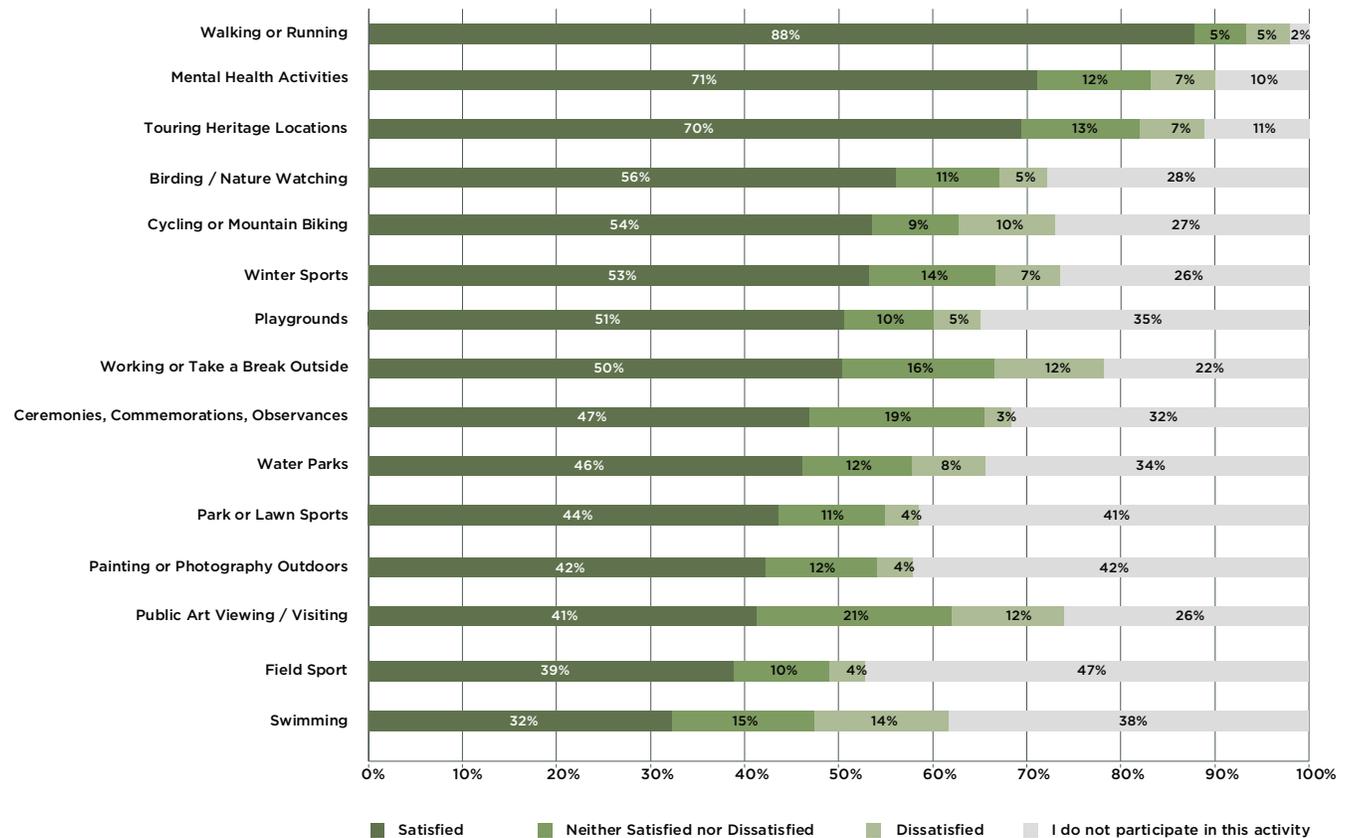
Walking or running, mental health activities (e.g. picnicking, relaxation, reading a book), and touring heritage locations are the activities that are most popular among questionnaire respondents, disregarding participation frequency (see Figure 3.4). This result suggests a high level of demand for pedestrian infrastructure (e.g. sidewalks, trails, drinking fountains), spaces with amenities to help people unwind or socialize, and programming or interpretive information to highlight Edmonton's rich heritage. Other popular activities include cycling or mountain biking, winter sports (Nordic skiing, skating, etc.), nature appreciation, and working/ taking a break outdoors. Respondents also helped identify activities that were not explicitly identified in the questionnaire, most notably dog walking (6% of respondents).

While open spaces support a broad range of activities, the ability of users to enjoy these activities is not uniformly satisfactory. Fortunately, among people who participate in walking or running, 90% are very

or somewhat satisfied with their ability to enjoy that activity in Edmonton's open spaces; in other words, considerations like accessibility, quality, or availability of amenities are encouraging participants to engage in walking or running.

The ability to enjoy mental health activities and tour heritage locations elicited a somewhat lower satisfaction rate, at just under 80% satisfaction with each activity. The activities with which participants are most dissatisfied include outdoor swimming (23% somewhat or very dissatisfied), community gardening (30%), and boating or water sports (33%). Based on long-form comments about these activities, some sources of dissatisfaction include a lack of infrastructure and amenities to support water-based recreation on the North Saskatchewan River, and insufficient outdoor swimming and community gardening opportunities (such that existing pools have become overcrowded, and existing gardens have long wait lists). These comments reveal a latent demand for amenities, facilities, and/or programs that may be currently undersupplied.

FIGURE 3.4 Proportion of questionnaire respondents satisfied with top 15 most popular activities



In general, there is a much stronger focus from the spatial survey respondents on Wellness based activities, which can be seen clearly in Map 3.1. Responses were related to recreational activities (68%) and enjoying the natural setting (22%), followed by attending events (10%).

Wellness activities had twice as many Likes than Ecology activities among spatial survey respondents, but Wellness based activities were also responsible for just as many Wishes for improvements. Specifically, most of the comments in the spatial survey were related to walking (22%), cycling (20%), winter sports (7%), dog walking (11%), and running (6%).

Spatial survey respondents indicated that there were more places that they Liked for walking, running, and dog walking than places that they required improvements. Similar to questionnaire respondents, spatial respondents were also equally likely to be satisfied as dissatisfied about their ability to enjoy winter sports, but unlike questionnaire respondents, they were more dissatisfied with the ability of parks to support cycling.

Comparing open spaces citywide, Terwillegar Park, Whitemud Ravine Park North, and Hawrelak Park received the most input about Wellness based activities. Both Terwillegar Park and Hawrelak Park were identified as multipurpose activity parks - open spaces that support a diversity of Wellness, Ecology and Celebration activities - based on the mix of activities specified by respondents for those locations.

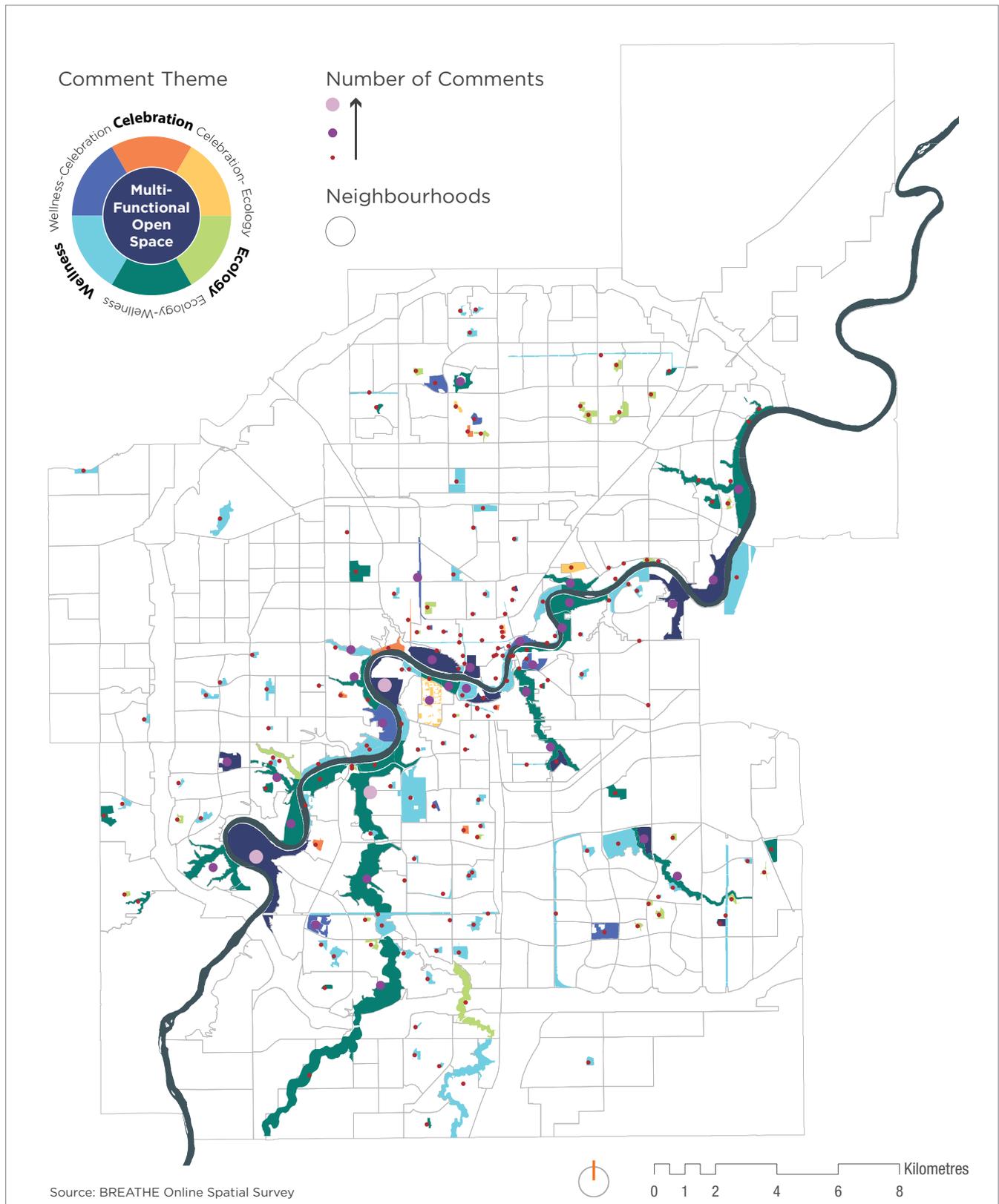
Specifically, Terwillegar Park was the most Liked open space among spatial survey respondents, largely for the dog walking opportunities enabled by its fantastic dog off-leash area. Other users enjoyed the park because it has a great trail system for mountain biking and walking. Whitemud Ravine Park North was mostly Liked for providing relaxing and calming walking opportunities. Both these parks also had the highest proportion of users who used these spaces to escape the city and enjoy nature (Ecology) based activities.

The River Valley and Ravine System, in general, had the highest number of comments about Ecology and Wellness activities, although some individuals did indicate that they use district and community parks for these purposes, as well. Linear parks (e.g. Hazeldean Greenway) were used primarily for Wellness based activities.

Hawrelak Park (see Map 3.1) and Churchill Square are the most popular Celebration spaces in Edmonton, where people enjoy attending events such as Heritage Days, Shakespeare in the Park, and Taste of Edmonton. Notably, both are centrally located within the city and host very large events that draw in thousands of Edmontonians.

Although other parks received much less input, they too support Celebration activities, especially community parks and pocket parks. These parks are much more peripherally located within the green network, and are often embedded within local neighbourhoods. The emphasis on these smaller parks was on attending or hosting community events (e.g. community league barbecues) that provide gathering spaces for families, children, and pets to congregate for fun community building events. Respondents often identified such smaller parks as “community gems”.

MAP 3.1 Spatial survey respondents' preferred activities, by BREATHE Theme



Amenities

The amenities that respondents identify as most important to their use of open spaces (see Figure 3.5) reflect the purposes for which they use those spaces: trees and trails help people appreciate nature, reflect and contemplate, and engage in activities like walking or running.

Similar to the questionnaire, trees and trails (which are important amenities to 86% and 85% of questionnaire respondents, respectively) also received the most focus from spatial survey respondents. One notable difference is that trees were responsible for only 9% of spatial survey feedback, whereas trails were responsible for 35%. Off-leash areas (6%), signage (6%), and community gardens/edible forests (5%) were also leading topics of feedback regarding amenities.

Other important amenities identified by questionnaire respondents, such as washrooms and seating, can support a variety of popular activities, from recreation and relaxation to social gatherings, by enabling people to rest when necessary, find a comfortable space to spend time, and lengthen their stay. Shade, lighting and drinking fountains are amenities which similarly increase the safety and comfort of open spaces, thereby reducing barriers to usage. Less important amenities reflect more specialized concerns, like the availability of food vendors (most important to 23% of questionnaire respondents) and WiFi (19%), or concerns that are very important but affect only a minority of the population, like wheelchair access (24%).

Among the long-form questionnaire comments, many respondents expressed:

- » A demand for more trees, reflecting the value they place on vegetation and natural areas more generally, and their potential to provide shaded areas for resting or playing
- » A demand for more washrooms (and longer hours/seasons of operation), particularly in community parks, to enable usage by people who require such facilities more frequently: children, the elderly, and people engaged in active recreation
- » Positive feedback about the trails and pathways, especially in the River Valley and Ravine System, but also a desire for greater connectivity, more wayfinding signage, improved construction and maintenance (especially in relation to erosion), and adjustments to trail design (e.g. surface materials, separation among

different users)

- » Both positive and negative feedback regarding the development of commercial amenities (e.g. food service vendors, equipment rentals) in open spaces, with around two-thirds of these comments suggesting that more amenities would promote open spaces as gathering points and destinations increasing their usage potential; and the last third expressed concern about the commercialization of public lands and development on valuable green space

The comments in the spatial survey are another helpful tool for evaluating satisfaction with open space amenities, by adding a location specific perspective to open space demand (see Map 3.2). When broken down by park class, responses indicate that open space users are equally as likely to be satisfied as dissatisfied with amenities in community parks, district parks, and linear parks. They were also more dissatisfied than satisfied with city parks and road greens.

In every case, comments reflect the amenities specific to each open space type – in other words, the amenities that are designed to service each type. For example, the amenities of greatest concern in city parks are walking/cycling trails (in particular, single track trails used by mountain bikers), followed by signage, off-leash areas, washrooms, and stairs. These amenities are common in city parks, and reflect the general size, topography, and vegetative cover of regional parks, and the need to support access into and throughout the river valley.

Similarly, spatial survey respondents commented most on walking/cycling trails, trees, sports courts/fields, and parking in district parks. In community parks respondents expressed a desire for development of and improvements to walking/biking trails and trees, followed by signage, community gardens, sports courts/fields, and washrooms in community parks.

By contrast, respondents were dissatisfied with road greens because they represent an unfulfilled opportunity for potential open space use. Suggested uses included community gardens; cycling and walking (multi-use) corridors that improve access and connectivity; dog off-leash areas; linear parks with plaques and sculptures; and improved landscaping (trees, bushes, native plants) to enhance their aesthetic appeal. Other people were more concerned that there should be improved maintenance (dog cleanup and weed control), and improved or new crossings between road greens at major intersections.

FIGURE 3.5 Top 10 most important open space features/amenities, by proportion of questionnaire respondents

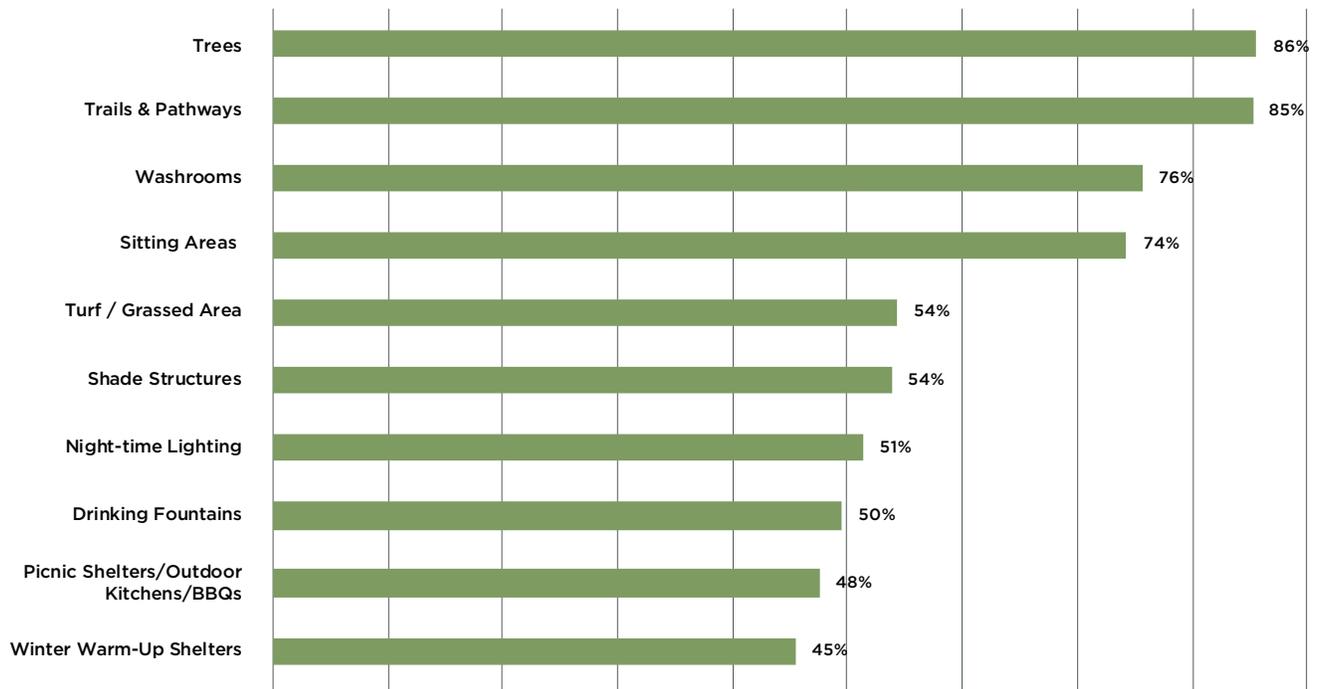
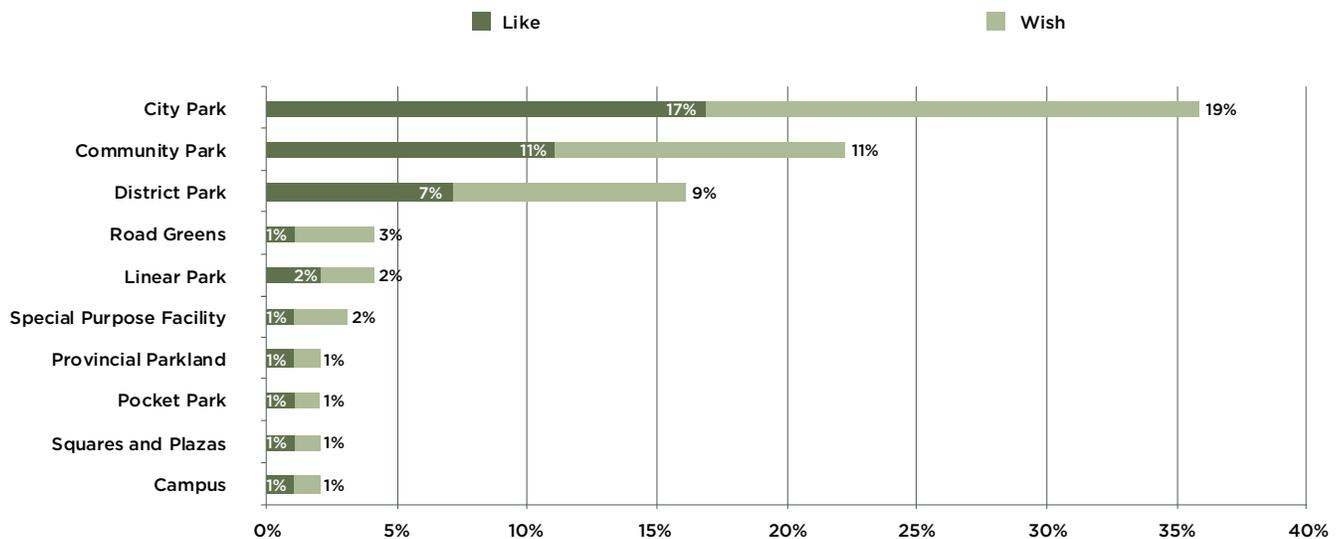
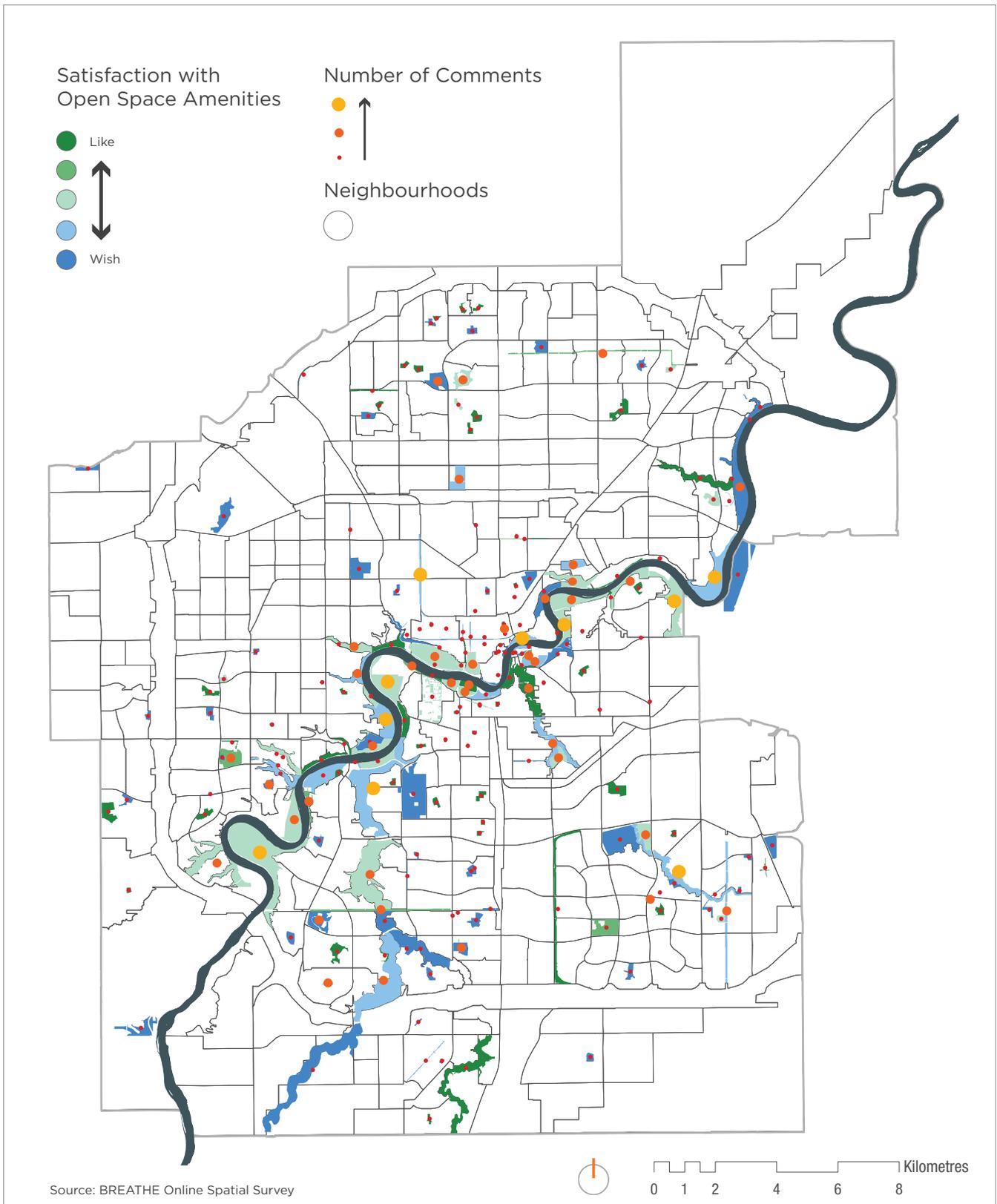


FIGURE 3.6 Proportion of spatial survey responses related to each type of open space, by comment type



MAP 3.2 Spatial survey respondents' satisfaction with open space amenities



Access and Accessibility

In Stage 2, the project team examined supply not only in terms of the quantity and location of open spaces in Edmonton, but also their accessibility – how easy or difficult they are to reach using different modes of transportation. The Stage 3 Summary Report complements this question by asking which modes of transportation Edmontonians use to reach open spaces, and how far they travel to their favourite open spaces. Measuring preferred modes of transportation can help open space planners determine the demand for different types of infrastructure that support open space accessibility, such as roadways or bike paths, and for open space amenities like parking or bicycle storage. Measuring the distance between the home and the destination of open space users can reveal the importance of proximity to open spaces through usage habits, or an absence of desirable open spaces in areas where residents indicate a preference for traveling to distant open spaces.

Preferred Mode of Transportation

When asking about which mode of transportation respondents use for the majority of trips, findings from the questionnaire indicate that their travel habits are roughly similar in accessing open spaces for purposes related to Ecology – e.g. nature appreciation or nature-based activities – and Wellness – e.g. recreation (see Figure 3.7). In both cases, the private vehicle is the dominant mode of transportation, accounting for approximately 55% of participants in those types of activities. Walking or running is the second most popular mode of transportation for both Ecology and Wellness activities, accounting for 21% and 28% of participants, respectively. Most of the remaining responses indicate that cycling is the transportation mode participants use most frequently. Travel habits for purposes related to Celebration (e.g. events and festivals) also indicate that the private vehicle is used more frequently than other transportation modes (43% of participants), but that public transit is preferred far more than for either other theme based activities (39% of participants).

The questionnaire also attempts to measure the many other ways that Edmontonians choose to travel to open spaces – those modes of transportation that respondents use only occasionally or for a minority of their trips to open spaces. The findings indicate that the majority of participants (55% to 60%) use a private vehicle for at least some trips. However, many Edmontonians who normally would drive also travel to open spaces using active transportation: around one third of participants sometimes cycle, and around 45% sometimes walk

or run, to reach open spaces for Ecology or Wellness activities. Somewhat fewer respondents choose active transportation for Celebration activities, but only because they use public transit to a much greater extent (54% of participants) than they do for other activities.

These findings suggest that the personal vehicle remains the mode of choice for many Edmontonians, but that many others use other modes of transportation – particularly active transportation – for some or most of their trips to open spaces. Additionally, public transit rivals the private vehicle in providing access to Celebration activities, and is used by many participants for occasional access to open space for other types of activities as well. It is important to note that in considering transportation mode and the other demand metrics studied in this questionnaire, current patterns of usage are contingent on the infrastructure and amenities available to support that use. For example, some respondents commented that they would prefer to use modes of transportation, other than their private vehicle, but that factors such as proximity to open spaces, absence of appropriate amenities, safety of cycling routes, and challenges in route connectivity or terrain discourage active or public transit modes of transportation. Thus, the demand measured by current usage patterns may underestimate the potential demand that would be expressed through usage if infrastructure, location, and amenity needs were fully satisfied.

Distance from Home to Open Space

When analyzing the distance between the home (i.e. postal code) and destination (i.e. open space identified for comment) of spatial survey respondents, the results can be statistically separated into 3 groups: people whose comments fall 3 km from their home, on average; people whose comments fall 5 km from their home, on average; and people whose comments fall 9 km from their home, on average. The results show that most respondents (91%) live within 3 or 5 km of the open spaces they commented on, and tend to comment on city and community parks, followed by district parks. A much lower proportion (9%) reside within 9 km of the open spaces they commented on, and remark mostly on community parks, followed by city and district parks.

Respondents living at an intermediate (5 km) or close (3 km) distance from the open spaces they were commenting on generally live closer to the River Valley and Ravine System (see Map 3.3). This pattern reinforces the strong, centralizing influence that the river valley and

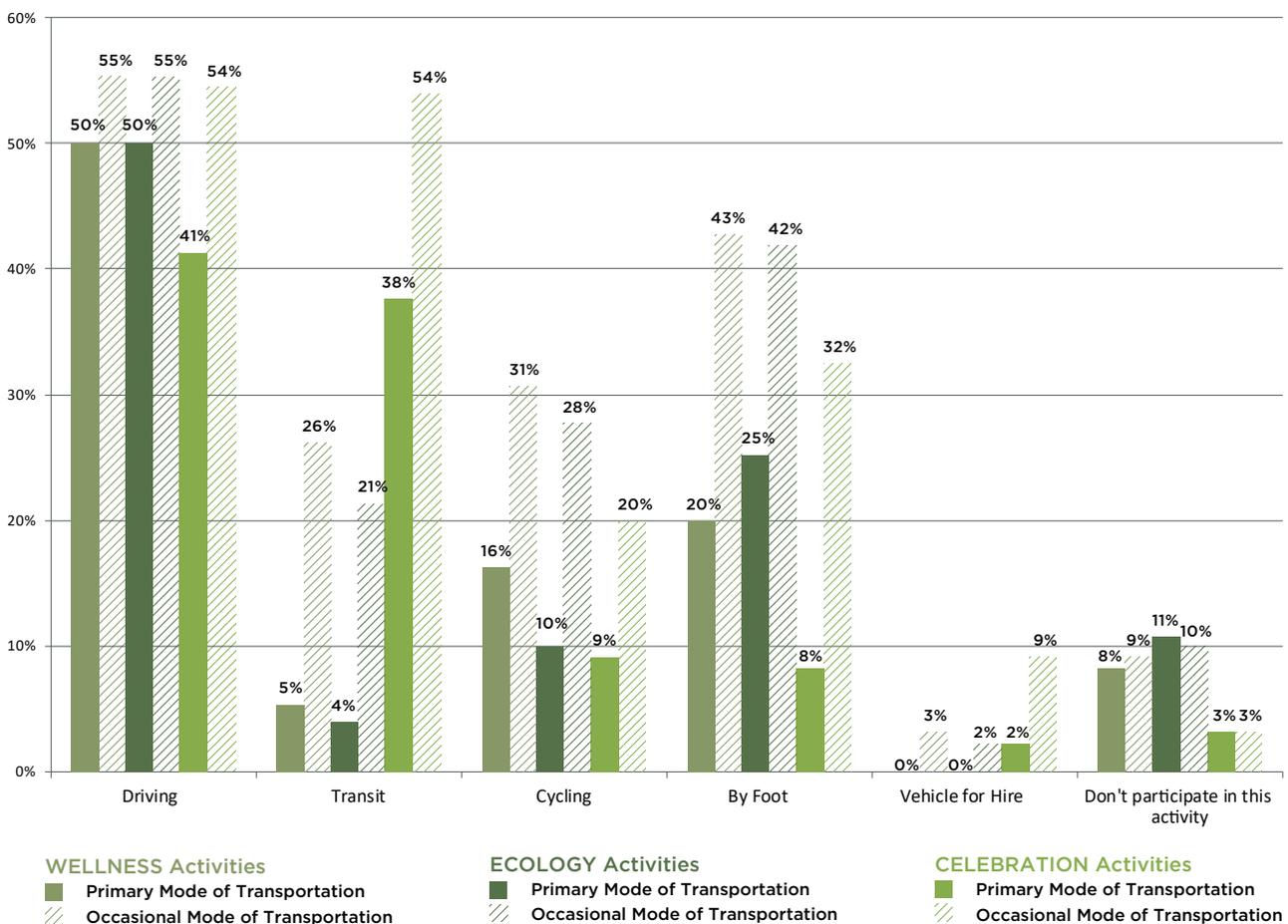
ravines have on open space users in Edmonton. Thus, respondents living closer to the river valley and ravines travel less to access open spaces because they already have good access to the regional and community parks that the River Valley and Ravine System affords.

Among the respondents who live close to the open spaces they commented on, only two groups in the northwest are not located near the River Valley and Ravine System. Interestingly, the comments from these groups focused exclusively on playgrounds, trail improvements and connectivity, and landscaping of the nearby community and district parks. Respondents who lived the furthest from open spaces they were commenting on were also the furthest from the river valley, and mostly commented on community parks. This

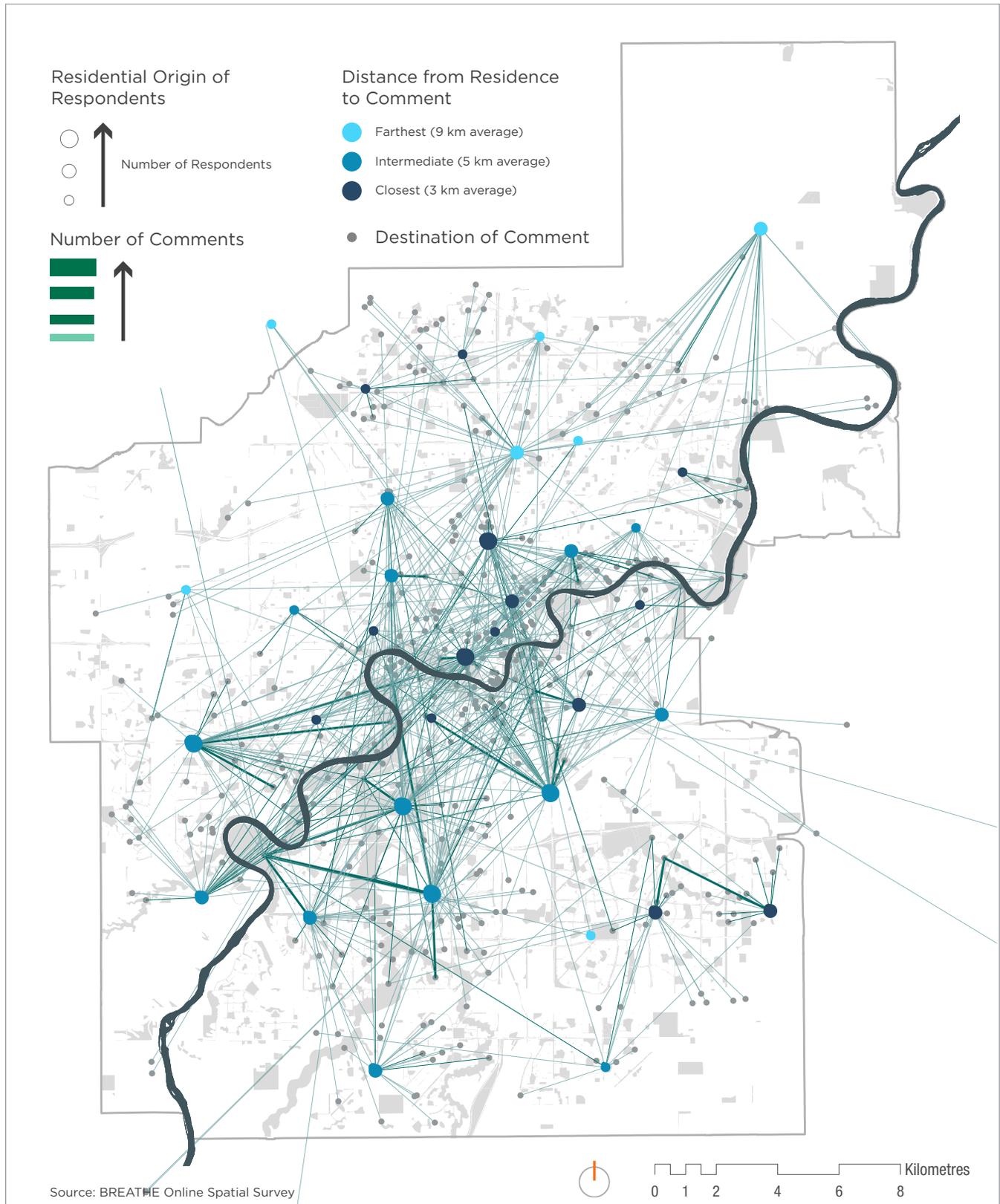
might indicate that these respondents are more reliant on community parks for their open space needs, since they might find city parks (mostly located in the river valley) and district parks less accessible or only occasionally “worth the trip”.

It should be noted here that spatial survey results about distance between home and destination only represent respondents who provided their postal codes. Therefore, this analysis excludes respondents who participated in pop-up engagements or other events, where postal code information was not collected.

FIGURE 3.7 Mode of transportation used by questionnaire respondents, by trip frequency and activity type



MAP 3.3 Comparison of spatial survey respondents' area of residence and location of comments





4 FUTURE GROWTH

Growth and Demand

A Changing City

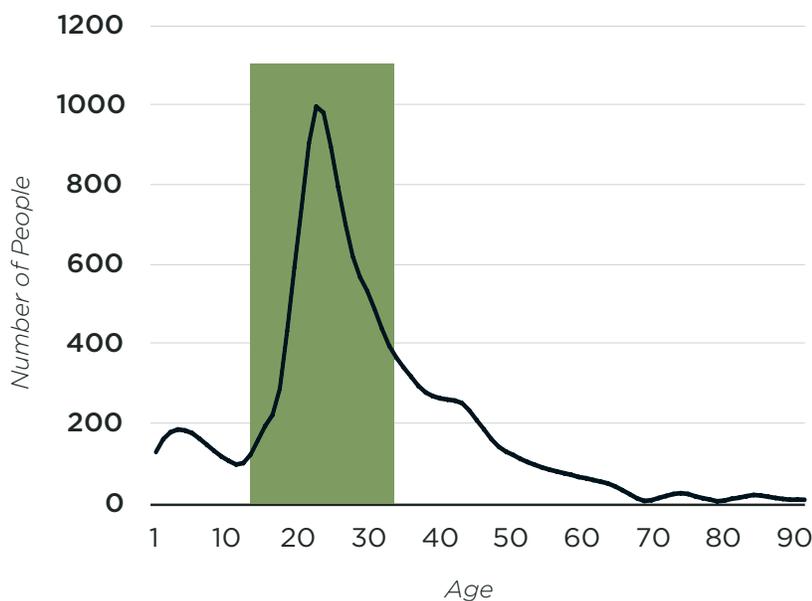
According to the 2016 Annual Growth Monitoring Report, the City of Edmonton is projected to grow from its current population of 899,447 to an estimated 1.2 million people by 2040. Evidence of this growth has already been documented, with an increase of 165,535 people living in the city from 2004 to 2014. The City will require 150,000 new housing units over the next 25 years, resulting in growing pressure for new housing developments and infill projects; new infrastructure and transit services; increases in housing starts year after year; and an overall expansion of the Edmonton Metropolitan Area into new growth areas.

Some of Edmonton's population growth has been attributed to a net migration of working age young adults into the city, resulting in the youngest age profile of Canada's major Census Metropolitan Areas (Figure 4.1). This migration is reflective of Edmonton's employment growth rate, which is one of the highest in Canada compared to other large urban municipalities, such as Calgary, Vancouver, Toronto, and Winnipeg. Most of this influx is from international and interprovincial migration, with a smaller intraprovincial component, predominantly from rural areas of Alberta (Figure 4.2).

The "millennial bulge" in Edmonton's age distribution is a recognized phenomenon, with the 25-39 age cohort being both the largest and the fastest growing in the city (Figure 4.3). If the current growth trends continue, open space amenities and activities targeted to this age cohort should be focused on areas of the city where young adults are most expected to settle.

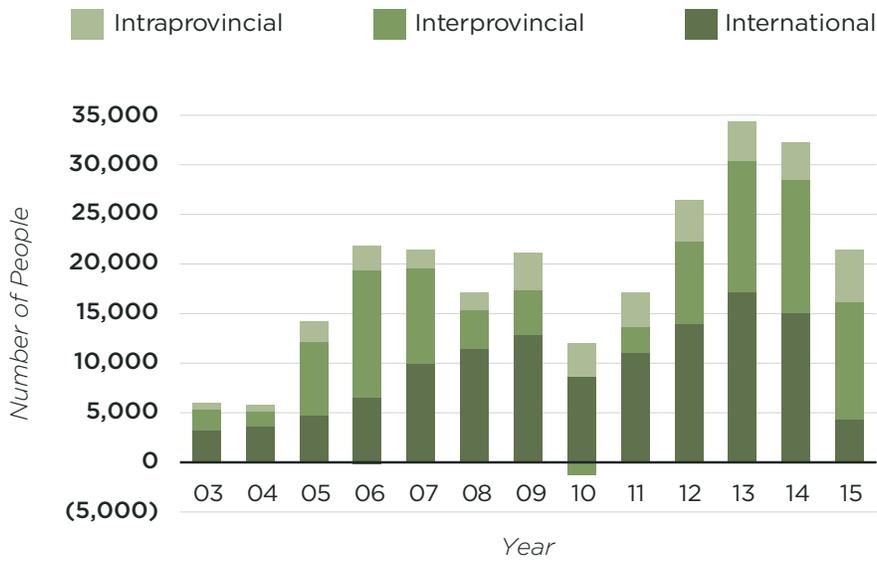
The strong international component of migration into Edmonton has introduced 46,075 immigrants to the city from 2006 to 2011. 65% of these immigrants are from Asian and Pacific countries; 15% from Africa and the Middle East; 9% from Europe and the United Kingdom; 8% from South and Central Americas; and 3% from the United States. In this context, cultural and language barriers to access and use of open spaces in Edmonton may be an important factor in determining the long term priorities and objectives for a successful Green Network Strategy.

FIGURE 4.1 Interprovincial and intraprovincial net migration by age, Edmonton CMA



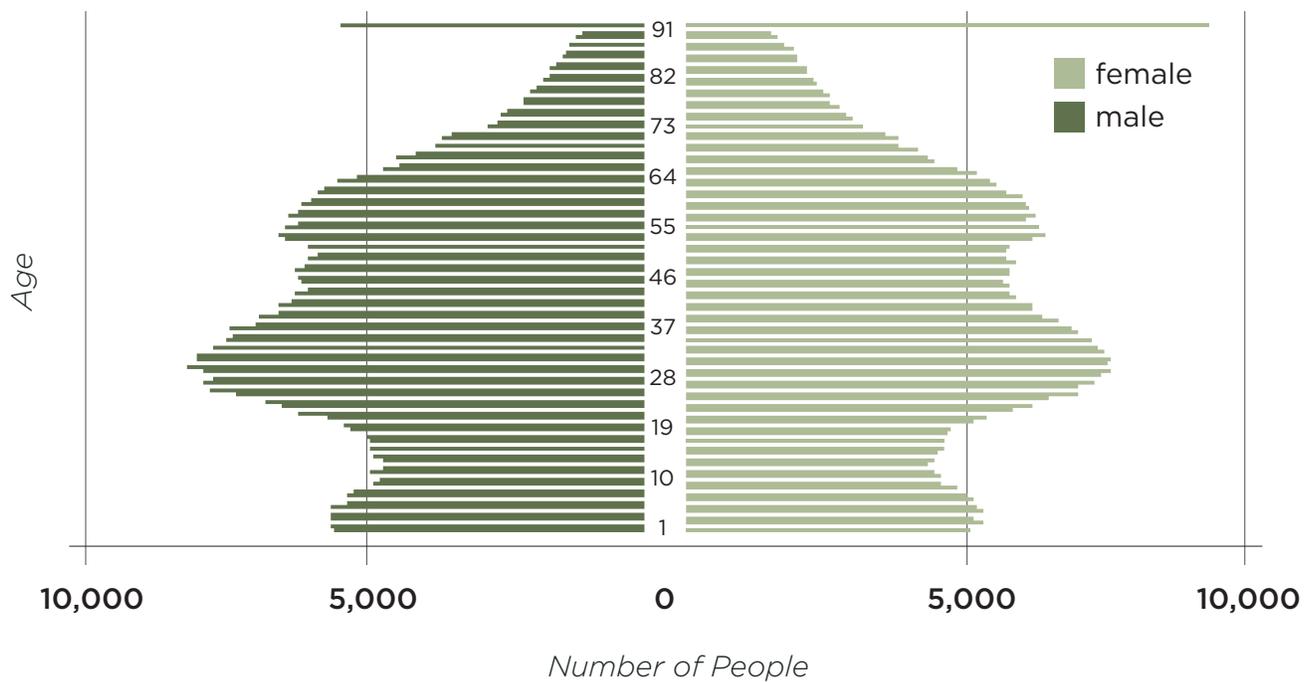
Source: "Our Growing City" 2015 Annual Growth Monitoring Report

FIGURE 4.2 Net migration by origin, Edmonton CMA



Source: "Our Growing City" 2015 Annual Growth Monitoring Report

FIGURE 4.3 City of Edmonton population by age and gender, 2014



Source: "Our Growing City" 2015 Annual Growth Monitoring Report

Where is growth occurring?

Our Growing City, the 2016 Annual Growth Monitoring Report, projects that most of the growth in Edmonton will occur in developing neighborhoods. From 2014 to 2015 there was a net population loss of 445 people in the city's established neighbourhoods, while the population in developing neighbourhoods increased by 25,875. There was also a moderate population increase of 2,226 people in the downtown core and surrounding mature neighbourhoods, consistent with City policy to increase residential development in these areas (see the Capital City Downtown Plan and The Way We Grow). This growth continues the trend over the previous 5 years (2009 to 2014), during which time mature neighbourhoods increased by 6,662 people and downtown core neighbourhoods increased by 5,909 people.

Many among the large 25-39 year age cohort are part of family groups with small children. Over the next 5 to 10 years, their children will require schooling and other educational programming and play spaces, with significant implications for open space planning. As shown in the 2016 Municipal Census data, most young families with children are located in developing or established neighbourhoods, especially those located north of the city centre and near the south-west and south-east periphery of the city (Map 2.2).

Simultaneously, older adults (55+) are currently living in neighbourhoods dispersed throughout Edmonton. As they continue into retirement and beyond, they will require different services and open space amenities, potentially decreasing overall use of open spaces in neighbourhoods where their age cohort is concentrated.

In terms of overall population growth, the fastest growing neighbourhoods from 2010 to 2014 were all located in the southern half of Edmonton, particularly in newly developing communities on the periphery such as Summerside, The Hamptons, Windermere, Walker, Laurel and others. Neighbourhoods with the largest net loss in population were all older, established or mature neighbourhoods, and included Dunluce, Spruce Avenue, Twin Brooks, Ormsby Place, Westview Village, Hillview, and Greenfield.

Edmonton 2040

With an anticipated population of over 1.2 million by 2040, Edmonton can expect big changes in demographics and urban form. Figure 4.4 shows the population change from the baseline year (2016, column

one) to 2040, while Figure 4.5 shows the total population from 2016 to 2040. In both tables, darker green cells represent a larger population (or population change), while the lighter white (or in the case of population change, yellow) cells represent a smaller population (or smaller population change or decrease). In many cases, cells with similar colours descend diagonally through the tables, showing how demographic "bulges" progress over time.

The most overall growth is expected to occur in the 40 to 59 age cohort, followed closely by the 10 to 24 age cohort. This trend reflects the current population bulge of "Echo Boomers" or "Millennials" (adults 25-34) who will mature into the 50+ age cohort over the next 20 or so years, simultaneously with an anticipated continued net migration of youth and young adults over the same time period. As a result, by 2040 the largest cohorts are anticipated to be the 25-29, 30-34, and 50-54 age groups (compare Figure 4.6 and Figure 4.7).

In terms of distribution, it is difficult to predict exactly where people will live in 30+ years. However, based on current residential areas and demographic trends, most growth is projected to occur in developing neighbourhoods. These neighbourhoods have accounted for over 80% of net new residential units in Edmonton for the past three Growth Monitoring Report years (2013 to 2015), as core, mature and established neighbourhoods have limited land available for large-scale new development. According to the Way We Grow, only 25% of housing unit growth will be accommodated in Downtown (core) and mature neighbourhoods, so it follows that the balance will be achieved in the established and developing areas at the periphery. The scale and pace of this growth will be determined as Area Structure Plans and Neighbourhood Structure Plans, as approved by Council.

Among already developed neighbourhoods, a recent traffic study projects that most growth will occur in the Bonnie Doon, Southgate, Riverbend/Terwillegar, and Jasper Place areas (based on traffic district boundaries) (Map 4.1). A large part of this growth will be concentrated in the Downtown Core. In contrast, a moderate decline in overall population is expected to occur in the North Central, Londonderry, Clareview, Beverly, and Capilano areas of the city, with a smaller decline in West Jasper Place, Kaskitayo, and Mill Woods. The Calder traffic district area is expected to remain at about the same population, or may decline slightly.

Note that some of the traffic districts, like North Central or Clareview, contain neighbourhoods which are undeveloped or only partially developed, like Blatchford or Ebbers. For these districts, the cohort survival model (i.e. using natural rates of birth and death) was used to calculate the future population of completed neighbourhoods, and the projected population capacity of the undeveloped neighbourhoods was subsequently applied to the total. Because land assembly plans were unavailable at the time of the traffic study, projections for the Downtown Fringe do not include possible population increases from redevelopment of The Quarters. Similarly, future LRT development – and associated Transit Oriented Development of residential, commercial and institutional land uses – have the potential to significantly alter population projections. In particular, some mature and established neighbourhoods, whose populations would otherwise remain stable or decline, are likely to experience concentrated growth due to projects like Mill Woods Station and the proposed Northlands redevelopment.

Future Population and Open Space Demand

How the shifting demographic profile will impact future anticipated open space demand will depend on a number of factors in addition to overall growth. How different age, language, ethnic, and other demographic groups are distributed spatially will greatly influence where and what types of future open spaces should be developed. The recreational and leisure preferences of future generations will also influence the types of open space amenities required – whether participation in organized sport continues to decline, for example, or whether interest in community gardening continues to grow. As a result, the City will need to continue monitoring demographic trends over time, as open space planning moves into the future.

FIGURE 4.4 Population projections for the City of Edmonton by population change (number of people)

Age	2016	2024	2034	2040
0 to 4	58,350	5,893	6,009	11,424
5 to 9	55,299	11,274	13,045	14,291
10 to 14	46,579	17,883	26,593	25,927
15 to 19	47,987	11,761	28,222	30,563
20 to 24	60,525	420	20,844	28,003
25 to 29	79,566	(8,113)	3,429	14,808
30 to 34	80,268	(210)	(3,008)	9,942
35 to 39	69,531	18,154	10,631	13,049
40 to 44	60,753	21,820	26,558	22,584
45 to 49	56,657	11,195	34,438	29,143
50 to 54	59,136	(1,239)	22,459	31,087
55 to 59	58,722	(4,611)	6,308	23,244
60 to 64	49,027	7,807	4,931	15,600
65 to 69	36,327	14,185	11,638	14,658
70 to 74	23,876	12,910	23,479	18,878
75 to 79	18,781	6,481	20,473	21,830
80 to 84	14,958	1,132	10,898	17,217
85+	16,540	1,737	6,373	13,158

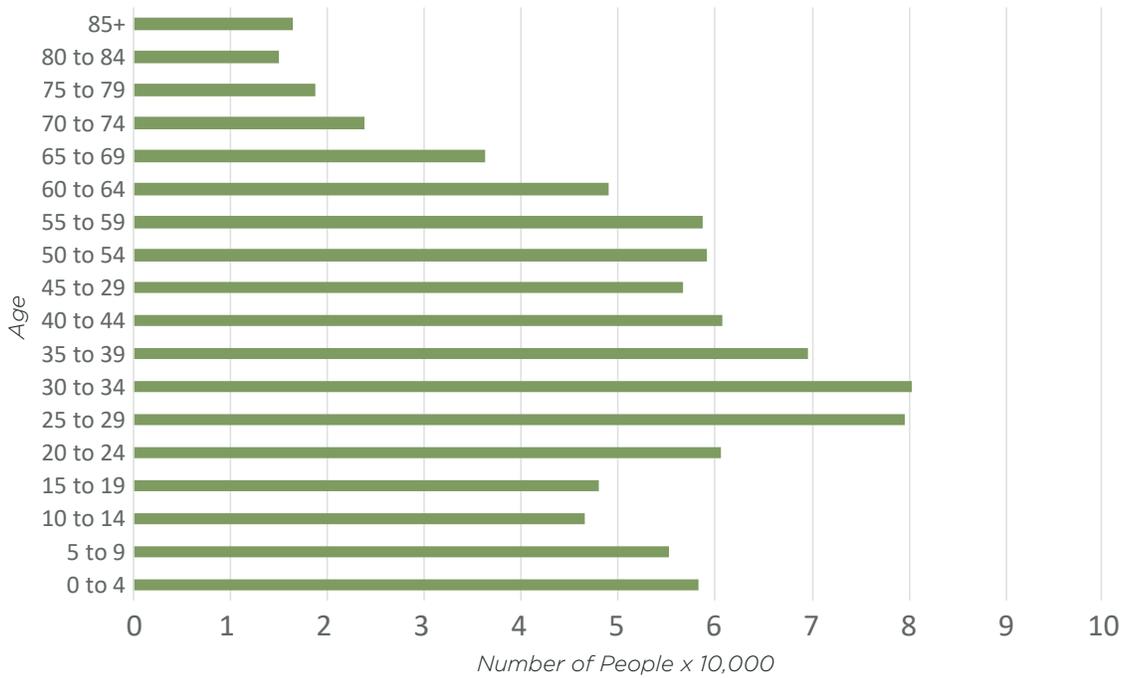
Source: City of Edmonton, Sustainable Development

FIGURE 4.5 Population projections for the City of Edmonton by total population (number of people)

Age	2016	2024	2034	2040
0 to 4	58,350	64,243	64,360	69,774
5 to 9	55,299	66,573	68,344	69,590
10 to 14	46,579	64,462	73,172	72,506
15 to 19	47,987	59,748	76,210	78,550
20 to 24	60,525	60,945	81,369	88,528
25 to 29	79,566	71,453	82,995	94,374
30 to 34	80,268	80,058	77,260	90,210
35 to 39	69,531	87,685	80,163	82,580
40 to 44	60,753	82,573	87,311	83,338
45 to 49	56,657	67,853	91,095	85,801
50 to 54	59,136	57,897	81,595	90,223
55 to 59	58,722	54,112	65,031	81,966
60 to 64	49,027	56,834	53,958	64,627
65 to 69	36,327	50,512	47,965	50,985
70 to 74	23,876	36,786	47,355	42,754
75 to 79	18,781	25,261	39,254	40,611
80 to 84	14,958	16,089	25,855	32,175
85+	16,540	18,277	22,913	29,698

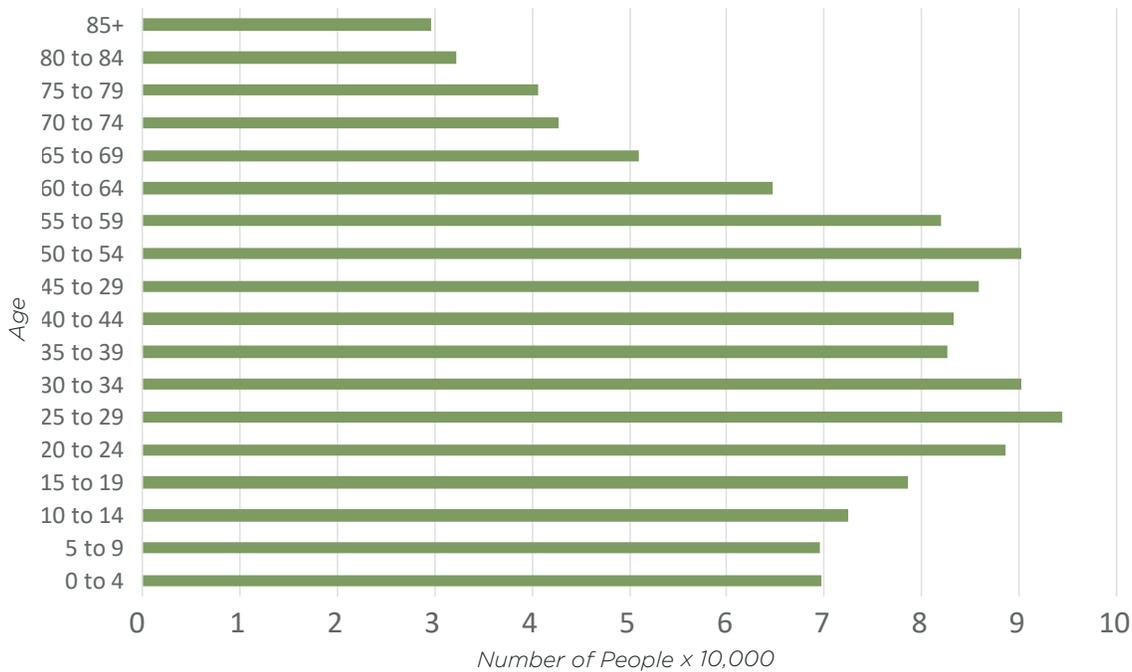
Source: City of Edmonton, Sustainable Development

FIGURE 4.6 Current population demographics by age cohort (2016)



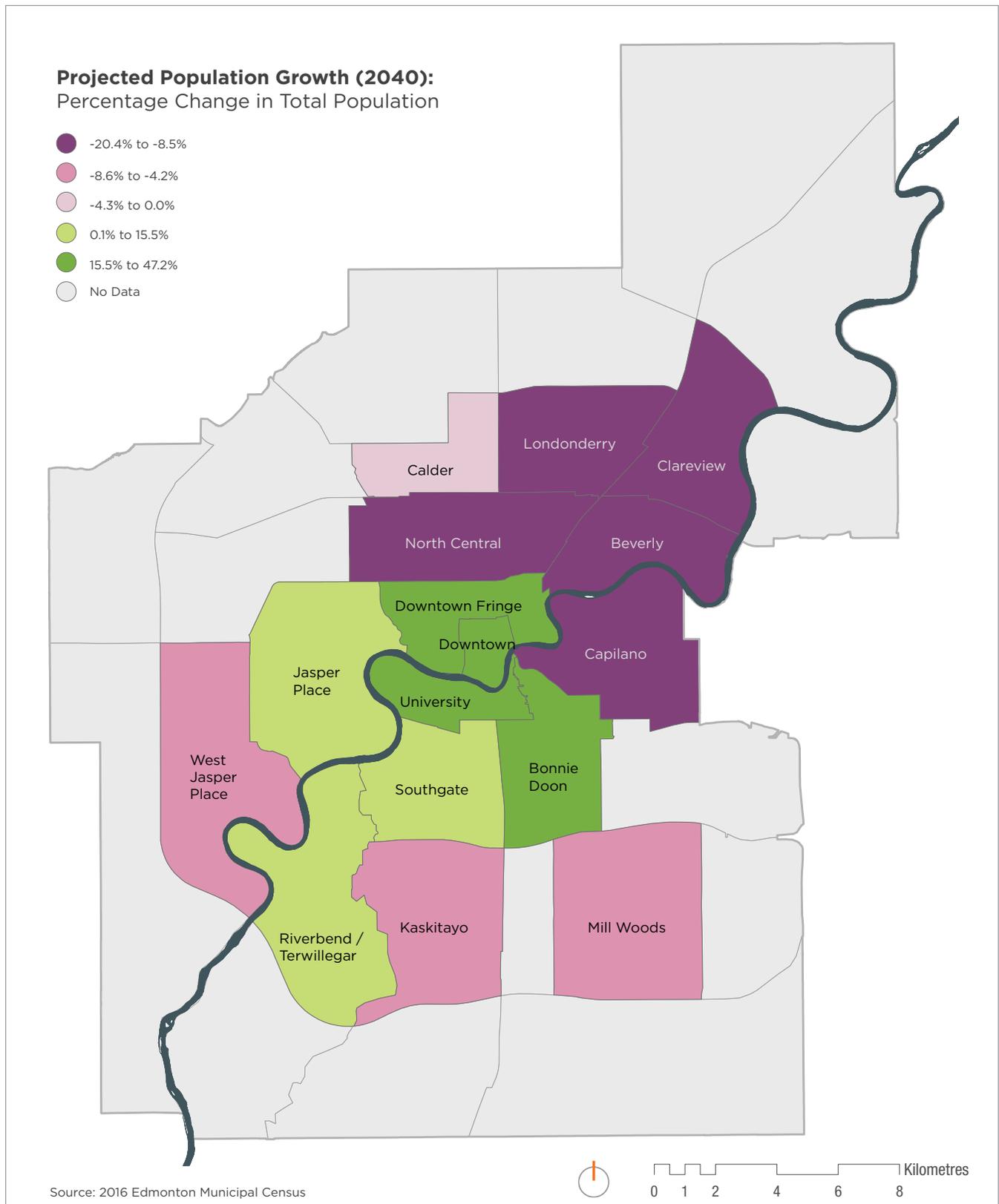
Source: City of Edmonton, Sustainable Development

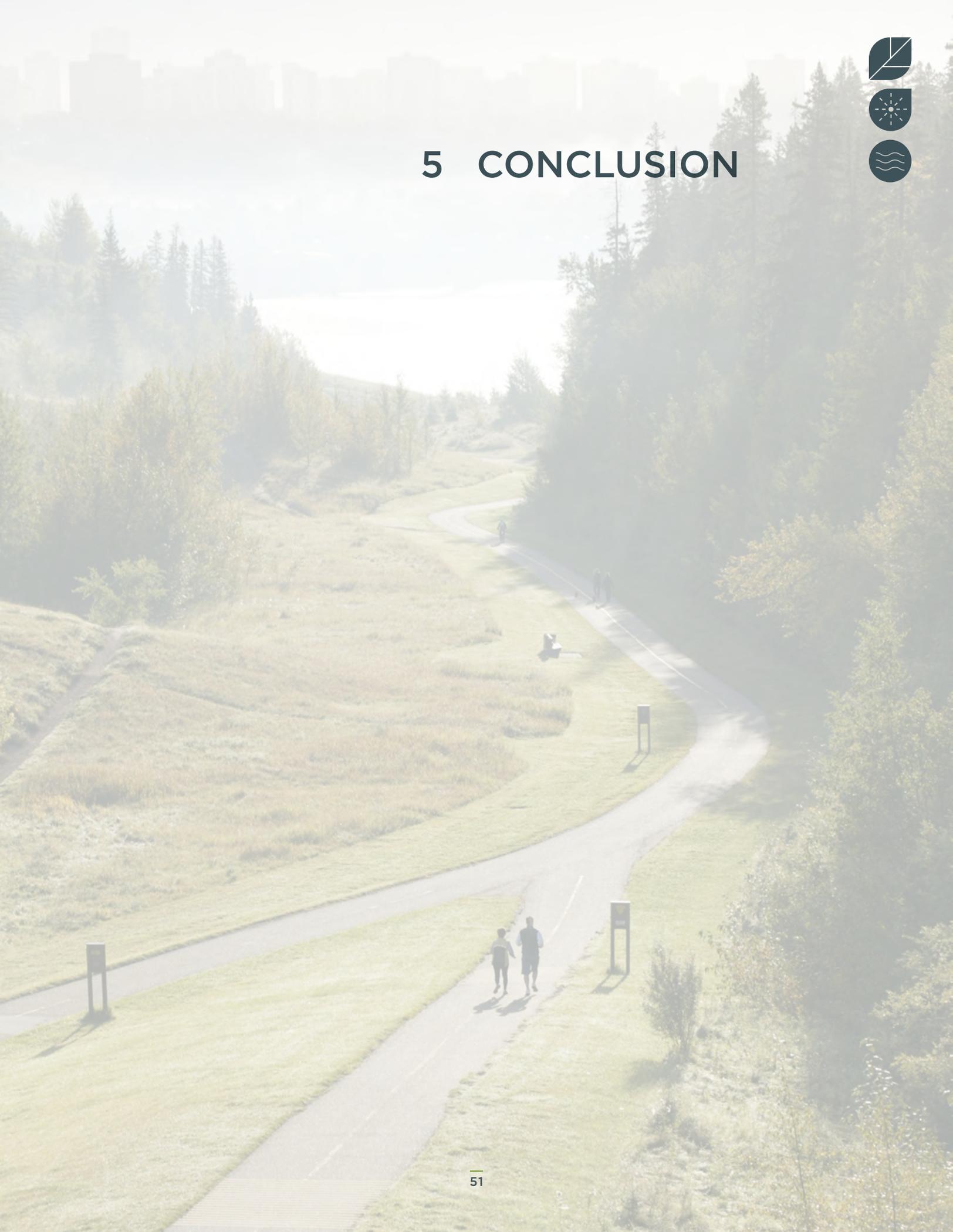
FIGURE 4.7 Projected population demographics by age cohort (2040)



Source: City of Edmonton, Sustainable Development

MAP 4.1 Projected population change from 2014 to 2040, by traffic district





5 CONCLUSION

Key Findings

Three key overall trends were identified in this report:

1. Edmontonians prefer amenities and open spaces that support Wellness and Ecology based activities.
2. Current open space demands (including the specialized demands of vulnerable populations) require balancing with future growth in the Downtown Core.
3. Open space planning in the developing south must address ethno-cultural and age specific demands.

These findings are summarized in greater detail below. The final report for BREATHE: Edmonton's Green Network Strategy will address and integrate these demands with the gaps identified in open space supply from Project Stage 2.

CURRENT OPEN SPACE DEMAND

The importance of Wellness based activities for Edmontonians is pervasive in both the questionnaire and the spatial survey.

The types of open space activities that are highly popular reflect a preference for self-directed, independent physical activities: walking or running, mental health activities, touring heritage locations, cycling or mountain biking, winter sports, dog walking, and working/ taking a break outdoors. These activities suggest a high level of demand for pedestrian infrastructure (e.g. trails, washrooms and trees), spaces with amenities to help people unwind or socialize, and programming or interpretive information to highlight Edmonton's rich heritage. Likewise, such amenities were suggested by survey respondents themselves.

For the majority of Edmontonians, the River Valley and Ravine System is the preferred location for Ecology and Wellness activities, regardless of the location of their residence, although some individuals indicated that they use district and community parks for these purposes as well. The lower usage of district and community parks (which are the primary locations for sports fields and courts); the weak demand for sports fields expressed in the surveys; and the countervailing strong demand for amenities like pathways reflect the decline in organized sport participation (according to the 2013 Alberta Recreation Survey) and the increasing preference for more self-directed, independent activities and supporting amenities in open spaces.

Although Celebration activities were the least popular type, this lower demand does not necessarily indicate that festivals or community events are less important

to Edmontonians. Rather, some comments on this topic indicated that physical activity and nature enjoyment are more amenable to "day to day living" than Celebration events, which need to fit into busy schedules in advance and can be too costly. Hawrelak Park and Churchill Square, in particular, are the most popular Celebration spaces, and enable people to enjoy multiple events such as Heritage days, Taste of Edmonton, and Shakespeare in the Park.

DOWNTOWN CORE

Presently, the Downtown Core has the highest population density, social vulnerability, and proportion of residents within the lowest income bracket. However, it also has the highest accessibility to open spaces, by all forms of transportation, out of any area in the city.

The opportunity exists to leverage such open spaces to improve socio-economic outcomes among Downtown residents - for instance, by introducing programming that help low-income Edmontonians learn valuable life skills (like urban farming or healthy food preparation), or redesigning parks to encourage community gatherings (important to combat social isolation among newcomers, the elderly, and other socially vulnerable people).

Despite having moderate representation of adults aged 20 to 54 - including residents within their peak childbearing years - the Downtown Core contains relatively few children. Trends in declining or delayed fertility among the Millennial generation may partially explain this finding. However, as Downtown grows, there is also an opportunity for young adults to locate and remain there as they build their families. Open spaces and programs designed for family-friendly use are important amenities for supporting family living Downtown, and are essential to creating the inclusive, welcoming environments promoted by the Child Friendly Edmonton Initiative.

Although City policy encourages substantial population growth in the Downtown Core and surrounding neighbourhoods, there remains a limited land base to accommodate new open spaces in this area. According to a City presentation delivered in June 2016, the growth in population (coupled with a limited supply of new open space) is projected to cause a 30% decrease in available City owned open space per capita by 2035. The Green Network Strategy will be challenged to match increased demands with appropriate open space supply, quality, access, and connectivity.

DEVELOPING AREAS

While the Downtown Core and mature neighbourhoods are anticipated to become targets for densification,

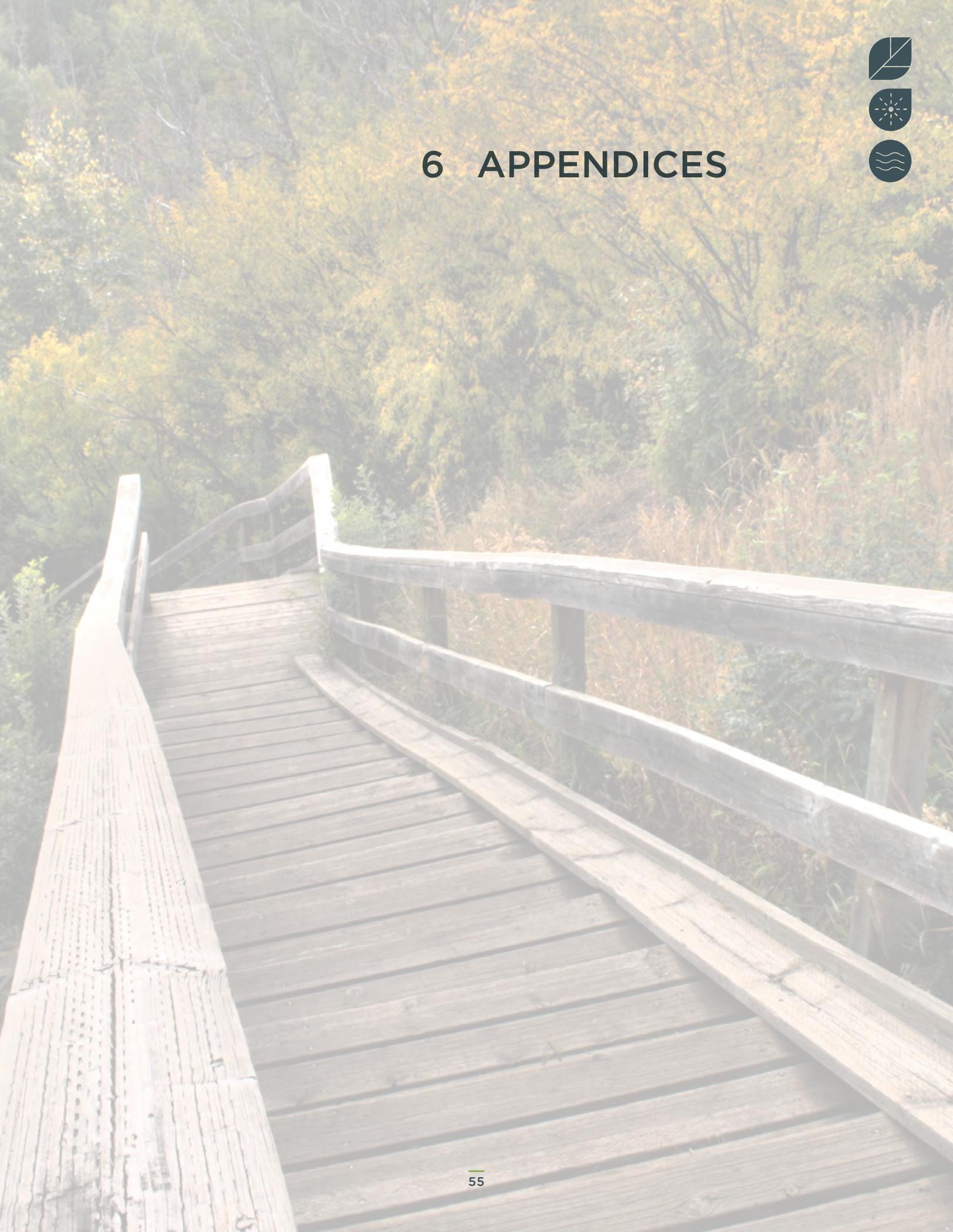
it is the established and developing neighbourhoods closer to the city's periphery that will accommodate the majority of population growth over the next several decades. Children and youth form a higher proportion of communities in these areas, particularly in the southwestern and southeastern Developing Fringe Reporting Units. These demographic patterns create localized needs for age specific amenities and programs, such as playgrounds, splash pads, and educational and recreational programs.

Not only do developing areas (e.g. the Settled and Developing Fringe South-East, the Developing Fringe South-West) have a high proportion of small family groups, but also a high proportion of Asian ethno-cultural communities who speak Mandarin or Punjabi as first languages. In turn, these concentrations of ethno-cultural groups may express culturally specific open space demands. In order to best service these demands, amenities, programming, policies and services should reflect the interests of diverse communities, including such considerations as large family or community gathering spaces, and facility rules that support and reflect the cultural needs of the community.

Although the developing communities of Edmonton's south are currently the fastest growing areas in the city, they also have a high potential to support changing open space demands, as new neighbourhoods are approved and new open spaces are developed.

Moving Forward

Understanding the different demands that Edmontonians exert on their open spaces, where those demands are expressed in the landscape, and how those demands might change in the future is fundamental to planning for a successful green network. It reveals which activities are popular now, and which ones are likely to become more popular in the future as demographics shift, revealing which types of amenities and facilities are needed to support those activities. It also shows where demands are not being met for a variety of reasons, allowing the City to direct resources efficiently and effectively to areas of the highest need. In concert with the supply analyses from Stage 2, the research and findings from this Stage 3 Report will be used to identify gaps between the current supply of open spaces and the demands being made on them; identify specialized or minority open space needs that require targeted policy attention; and determine which methods of acquiring and developing open spaces best align with projected increases in population and demand. This type of reconciliation will be undertaken in Project Stage 4, which is designed to use evidence collected during the project to date in order to form priorities and objectives for planning Edmonton's open spaces over the next 30 years. In this way, evaluating demand provides part of the foundation for ensuring a greener network in the future.

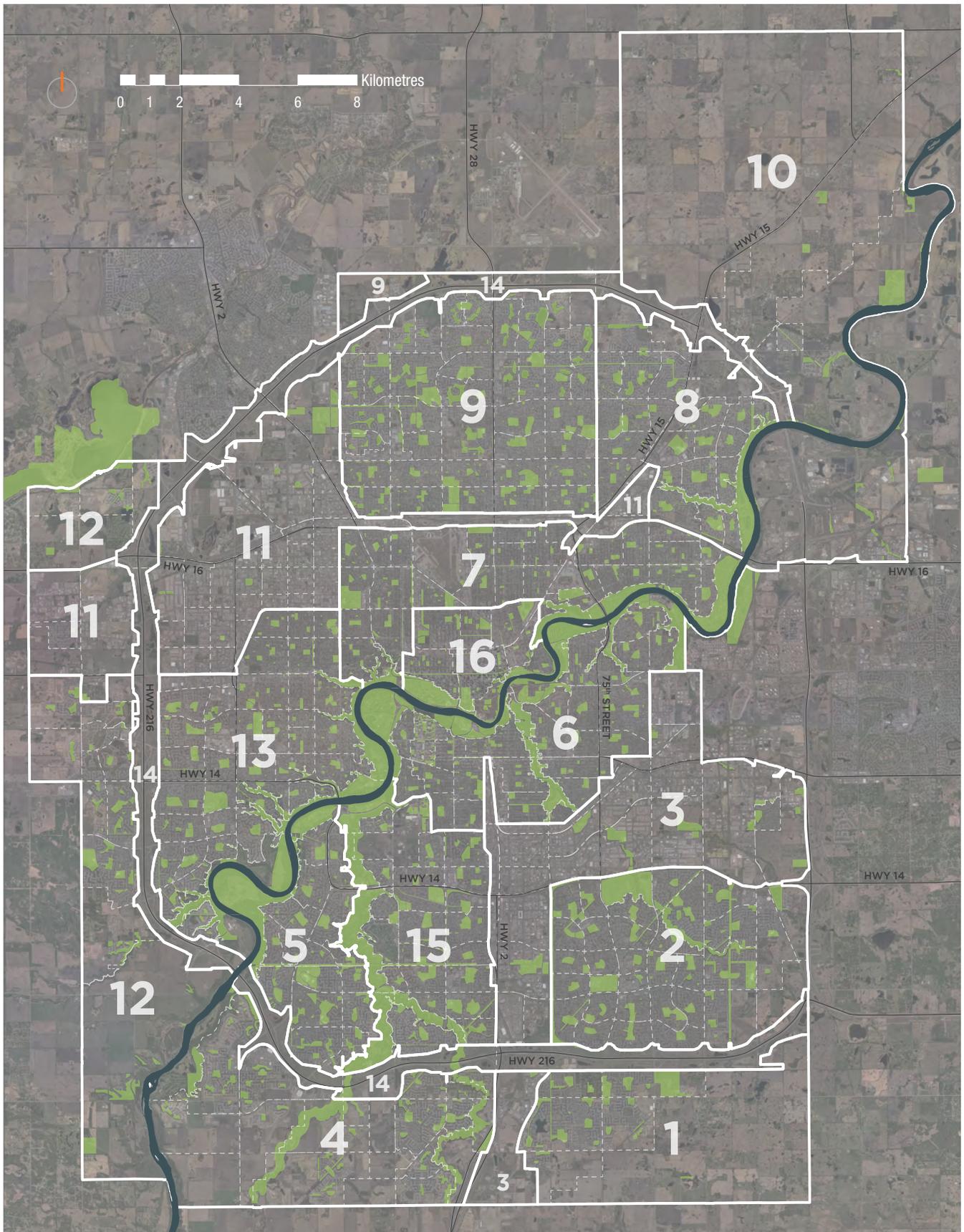


6 APPENDICES

Appendix A: References

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Appendix B: Reporting Units



1. Developing Fringe South-East

This area contains rural and newly developing communities, and important new open spaces like the Ivor Dent Sports Park.

2. Settled South-East

This area contains both established neighbourhoods, like Mill Woods, and newer and developing neighbourhoods, like Silver Berry. In addition to the Mill Creek Ravine, open spaces here include the Jackie Parker Recreation Area, and Mill Woods Park.

3. Industrial South

With the exception of the Maple Ridge neighbourhood, this area is mostly industrial, although it does contain the John Fry Sports Park.

4. Developing Fringe South-West

One of the newer parts of Edmonton, this area south of the Anthony Henday contains rural lands and new residential communities like Heritage Valley. Blackmud Creek runs through the area.

5. Settled South-West B

Just to the west of Reporting Unit #15, this area contains established and newly developing neighbourhoods served by open spaces like Terwillegar and Terwillegar Heights Parks.

6. City Centre South

This area south of the River contains the denser neighbourhoods around Strathcona and the University of Alberta, along with other mature inner city neighbourhoods north of the industrial area. Key open spaces include the Mill Creek Ravine, Gold Bar Park, and Rollie Miles Athletic Park.

7. City Centre North

This is the area north of Downtown comprised of mature, inner city neighbourhoods, along with the redeveloping Blatchford site. Coronation Park and Borden Park are the most prominent open spaces in the area.

8. Settled North-East

Although most of this area is currently developing, there are also established and mature residential neighbourhoods that contain open spaces like Matt Berry Park.

9. Settled North

This area contains a mixture of newly developing, established, and mature neighbourhoods. Key open spaces include Castle Downs Park and Grand Trunk Park.

10. New Growth Area North-East

Most of this area is currently rural, but is planned to accommodate industrial and residential development in the future.

11. Industrial North

With the exception of Westview Village, this area is exclusively industrial and contains few open space amenities.

12. Developing Fringe West

This area contains the newly developing residential neighbourhoods west of the Anthony Henday. Although many open spaces have not yet been constructed, important new parks like The Grange are being developed to service the increasing population. This area has access to Big Lake, and Wedgewood Ravine.

13. Settled West

Nestled between the central core and the Anthony Henday, this area contains established and mature neighbourhoods, and open spaces like the Edmonton Valley Zoo, Buena Vista Park, Callingwood and Sir Wilfred Laurier Parks.

14. Transportation Utility Corridor

15. Settled South-West A

The area includes the mature and established neighbourhoods between Whitemud Creek and the industrial area to the east. Key open spaces include Confederation and Twin Brooks Parks.

16. Downtown Core

Located to the north of the North Saskatchewan River, this area contains a concentration of commercial uses, with important civic spaces like City Hall Plaza and Sir Winston Churchill Square.



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