

# PLAN NORTH WEST

A journal for professional planners of Alberta, Manitoba, Northwest Territories, Nunavut, and Saskatchewan

Fall 2020, Issue 7



## Connecting with the Paskwâw-mostos

An environmental and spiritual journey Pg 11

## Innovation and Engagement, A Recipe for Success

Traditional wisdom leads to a modern solution Pg 14

## Urban Renewal and Health Outcomes

Can Community Engagement Prevent Gentrification? Pg 35

# In this issue...

8 Volunteer Recognition

11 Connecting with the  
Paskwâw-mostos

SUBMITTED BY Glinis Buffalo RPP, MCIP

14 Innovation and Engagement,  
A Recipe for Success

SUBMITTED BY Gerson S. Neiva P.ENG.



19 Edmonton's Bus  
Network Redesign

Lessons for Planners

SUBMITTED BY Craig Walker RPP, MCIP

*PLAN North West* offers opportunity for publication of original works that are both community-based and research oriented, and relevant to Alberta, Manitoba, Saskatchewan, Nunavut and the Northwest Territories. Types of submissions include case studies, analysis of events and/or trends, profiles of notable planners, projects, or programs, overviews of best practices and guidelines, book reviews or excerpts, and opinion pieces.

*PLAN North West* is the official publication of APPI, MPPI and SPPI. All rights reserved. Reproduction in whole or in part without the expressed permission of APPI is strictly forbidden.

## Journal Submissions

We are always looking for articles for future issues of *PLAN North West*. Submit an article or idea at any time and a member of the Editorial Board will help you through the process of getting it published. Potential subject areas we are interested in receiving article submissions on include:

- sustainability initiatives
- member accomplishments
- member research
- community development projects
- urban design
- student experiences
- innovative ideas
- planning successes

For more information, please contact the *PLAN North West* Editorial Board at [plannorthwest@gmail.com](mailto:plannorthwest@gmail.com) or 780-435-8716.

23



## 23 Plan Today, Thrive Tomorrow

How the City of Medicine Hat's New Growth Management Strategy is working to promote sustainable urban growth

SUBMITTED BY Nik Kinzel-Cadrin, Robert Sissons MSC, RPP, MCIP and Alan Wallace RPP, MCIP, LEED-GA

## 29 The Relationship Between Property Taxes and Built Form Mapping the City of Winnipeg

SUBMITTED BY Felipe Mogollon

## 35 Urban Renewal and Health Outcomes Can Community Engagement Prevent Gentrification?

SUBMITTED BY Mara Steiner



### Advertising Opportunity

*PLAN North West* provides businesses the opportunity to advertise. *PLAN North West* offers advertisers:

- Direct access to industry professionals working in a variety of settings.
- A circulation of 1000+ including universities, libraries, and other CIP affiliates across Canada.
- Reasonable rates and volume discounts for 3-issue commitments.

If you are interested in advertising in *PLAN North West* please contact us at [plannorthwest@gmail.com](mailto:plannorthwest@gmail.com) or 780 435 8716.

### Feedback

The *PLAN North West* Editorial Board welcomes your feedback. Please submit any comments you may have about this issue to [plannorthwest@gmail.com](mailto:plannorthwest@gmail.com). Your comments, suggestions and feedback are critical for *PLAN North West's* continued improvement and for us to provide the best possible publication that meets the expectations of our readers.

### Cover Photo

SOURCES: *iStock*

### Design & Layout

Plumbheavy Design Co. [www.plumbheavy.ca](http://www.plumbheavy.ca)

# MESSAGE FROM THE EDITORIAL BOARD

## ***PLAN North West* Editorial Board**

Laurie Kimber RPP, MCIP  
Miles Dibble RPP, MCIP  
Kyle Whitfield PhD, RPP, MCIP  
Brittany Shewchuck RPP, MCIP  
Lenore Swystun RPP, MCIP  
Samantha Mark RPP, MCIP  
Rylan Graham PhD, RPP, MCIP

Despite COVID-19, the *PLAN North West* Editorial Board and our contributors continued to work together assembling another interesting issue for our readers across Western Canada. Our communities have shown their resilience in the face of a serious health challenge by working together. COVID-19 reminds us that planners also play a key role in facilitating a community's response important challenges, such as solving water quality issues in Northern Canada or redesigning a bus network in a major city. Planners are often the generalists that bring people together to solve complex problems.

While reading this issue, think about submitting an article yourself for the next issue. The Editorial Board welcomes articles about projects, research, practice advice or even travel reviews and respectful opinions. Perhaps an article on how you or your organization responded to COVID-19 and continued with the important work of planning, developing and conserving Western Canada's communities?

Planning is a wide and varied profession, as the articles in this issue attest. The articles take you from the reintroduction of the bison in Banff National Park to ideas about how community engagement can help manage the impacts of redevelopment. We have also brought you profiles on planners from MPPI, SPPI and APPI who have made volunteering part of their careers. These volunteers share their insights on the planning profession, as well as explaining how volunteering has helped develop their careers and build their skills. Perhaps this might inspire some of our readers to also consider volunteering?

# MESSAGES FROM THE PRESIDENTS

## Alberta Professional Planners Institute

Ahhh, 2020...

2020, 2020, 2020 – however will this year be remembered? Perhaps we are on the cusp of a paradigm shift; a collective motivation that will bring sweeping changes to self-defeating systems and destructive environments. Is a new way of thinking emerging? Can we pivot our varied social, economic, political and environmental contexts with the speed and, more importantly, the coordination needed? Incremental change seems a luxury, and planners' roles have never been more essential.

Our roles. They are vast and varied, yet all rooted in “bringing together” and “bringing change” – the who, what, where, when and why of it all. Planners occupy a unique space in the enterprises that shape our world. Never working from a blank canvas and always working within constraints, planners must leverage our opportunities and our vision. We must bring clarity of thought and intention through to actualization.

At a global scale, we have shared in fear, courage, loss, hope, uncertainty, generosity, anger and distrust. This is part of our canvas. At times, 2020 has felt dizzying and surreal. The planning profession,

however, is anchored by values of diversity, inclusion, fairness and integrity. Moving forward, planners are particularly well positioned to help create more equitable, just, resilient and constructive systems and environments.

It's an exciting time to be a planner. How will 2020 shape what you do?

If anything, 2020 is an undeniable reminder to be open, to be curious, to ask questions and to learn. In this spirit, I hope you will read and reflect on this edition of PlanNW. It is a gold mine! It covers everything from public transit and land economics to climate adaptation and the restoration of historic cultural connections (and you can log some unstructured CPL credits along the way).

I also invite you to think about submitting your own article for a future edition of PlanNW. What better way to reflect on your role as a planner and contribute to an enriched understanding of our professional practice?

Take care – and remember to reach out to others when you need to.



# APPI

Alberta Professional  
Planners Institute

✉ admin@albertaplanners.com

💻 www.albertaplanners.com

📞 780 435 8716  
1 888 286 8716 (toll-free)

📍 P.O. Box 3099  
Sherwood Park, AB T8H 2T1

🐦 @\_APPI\_

📌 APPI – Alberta Professional  
Planners Institute

in Alberta Professional  
Planners Institute



Mac Hickley RPP

### PRESIDENT

Mac Hickley RPP

### COUNCILLORS

Jeff Chase RPP, MCIP

Carol Bergum RPP, MCIP

Glinis Buffalo RPP, MCIP

Heather Chisholm RPP, MCIP

Peter Ohm RPP, MCIP

Amanda-Brea Watson RPP, MCIP

Chelsea Whitty RPP, MCIP

### PUBLIC MEMBER

Marilyn Hooper

### EXECUTIVE DIRECTOR

MaryJane Alanko



✉ info@sppi.ca

💻 www.sppi.ca

☎ 306 535 0993

📍 PO Box 24044 Broad St RPO  
Regina, SK S4P 4J8

🐦 @SaskPlanning

📘 SaskPlanning



Alan Wallace RPP, MCIP

#### **PRESIDENT**

Alan Wallace RPP, MCIP

#### **COUNCILLORS**

Adam Toth RPP, MCIP

Eric MacDougall RPP, MCIP

Ian Goeres RPP, MCIP

Maggie Schwab RPP, MCIP

Samantha Mark RPP, MCIP

Tony Wood (candidate)

Richard Neufeld RPP, MCIP

#### **STUDENT REPRESENTATIVE**

Joshua Campbell

#### **EXECUTIVE DIRECTOR**

Marilyn Steranka

# Saskatchewan Professional Planners Institute

Wow! That's all I have to say about 2020 so far. I just re-read my January PlanNW message for the winter issue, and it was centred around 'new norms'. This is not the new norm I was referring to. A pandemic was already underway in China and Canada was only starting to take notice. Little did we know how that would affect us, how much has changed since March.

It is still hard to identify and understand how much change will be permanent when we return to a near-normal state. We can only assume a near-normal state will occur once a vaccine has been developed and administered. The changes to our jobs and communities has provided a great topic for discussion and has focussed our attention on what role the Planning profession can and should play during these difficult times.

So many things have changed and there is a lot of speculation about the future. However, one thing is certain – the financial impact from this will be felt for a long time. Governments are there when

we need them. All levels of Canadian government have certainly been willing to provide a 'bridge' so Canadians can get to the other side of this pandemic.

Planners have a unique long-term perspective, and can offer solutions to municipalities to reduce costs, increase quality of life and live a more sustainable existence. If those aren't important values now in Canada, I don't know when they will be. This pandemic may force us to focus on our local economy, local food, local venues, and acquire a higher appreciation for our local existence. Planners definitely know how to focus on 'local'.

# Manitoba Professional Planners Institute

At the 2019 Manitoba Planning Conference, Keynote Speaker, Jim Schwab spoke on the importance of disaster planning. It was early May and a relatively cool Spring had eased Manitoba's flood concerns, but with forest fire and tornado season on the horizon, it was a timely topic. Jim had everyone's attention, but still I never imagined that a global pandemic would soon disrupt our lives.

Now a year later, the 2020 Manitoba Planning Conference and CIP National Conference have both been cancelled, in-person meetings are rare and social distancing has limited our ability to meet with and learn from our fellow planners. Fortunately, Plan Northwest continues to share planning stories, experiences and best practices. My thanks goes out to everyone involved with this important publication. As Always, I look forward to the latest edition.



**Manitoba Professional Planners Institute**

✉ info@mppi.mb.ca

💻 www.mppi.mb.ca

☎ 1 888 626 3036

📍 2nd Floor  
137 Bannatyne Avenue  
Winnipeg, MB R3B 0R3



Janis Pochailo RPP, MCIP

## **PRESIDENT**

Janis Pochailo RPP, MCIP

## **PRESIDENT-ELECT**

Andrew Mok RPP, MCIP

## **SECRETARY-TREASURER**

Dianne Himbeault RPP, MCIP

## **COUNCILLOR**

Ryan Segal RPP, MCIP

Paul Bell RPP, MCIP

Evan Allan RPP, MCIP

## **PUBLIC REPRESENTATIVES**

Marilyn Robinson RN (RET), BScN

## **WALTER BURDZ P.ENG., MBA**

Bradley Keefe CPA, CA

## **FACULTY REPRESENTATIVE**

Richard Milgrom

## **STUDENT REPRESENTATIVE (NON-VOTING)**

Justin Grift

# Volunteer Recognition

## Saskatchewan Professional Planners Institute

Jenna's formal role with SPPI began in 2013 when, encouraged by her mentor and friend, Karen Bolton, she was first elected to Council. Eventually serving on Council for five years, she served as President of SPPI for two years.

The five years on Council helped form strong memories for Jenna—the energy and enthusiasm of Council and the shared vision they had to support their members and strengthen the profession in Saskatchewan. Jenna's experience volunteering on Council helped her build skills, such as public speaking and leading and chairing meetings—invaluable skills for every planner. The lasting relationships she built and the good times she spent on Council will endure in her memories.

Friends describe Jenna as an open person who values relationships, so it should come as no surprise that the SPPI's conferences and Talks on Tap events are particularly memorable to her—gathering with other planners, catching up with old friends and making new ones.

Volunteering provided Jenna with the opportunity to meet other planners and incredible people from across Saskatchewan and Canada. A strong memory for her was representing SPPI at the Planning Alliance

Forum, comprised of the Presidents of the various PITA's, the CIP and chairs of the Professional Standards Board and Standards Committee. This group of passionate planners worked to advance the Canadian planning profession. Many of the people Jenna was fortunate to volunteer with helped shape her career and life in many ways—volunteering helped her learn new perspectives and ideas and has helped to guide decisions in her daily planning practice. In turn, Jenna has given back to the planning community, mentoring and providing guidance to new planners seeking membership in SPPI.

Jenna encourages all members of SPPI to think about volunteering in some role—the rewards and experiences you can gain are endless, as is the impact that you can have mentoring another planner and giving back to the profession. The SPPI holds a special place for Jenna, as it has helped her professional and personal growth, something that she thinks all SPPI members should also take advantage of.



Jenna Schroeder RPP, MCIP

# Manitoba Professional Planners Institute

Erin McLeery's first encounter with MPPI was as a student at the University of Manitoba in 2004. The MPPI has a strong student and practicing professional mentorship program, and the annual wine and cheese event was where she met other planners with similar interests, beginning her relationship with MPPI. The philosophy of the MPPI is to assist young planners in their transition from school to the planning practice. After finishing school, Erin completed the membership process, eventually joining MPPI Council where she was the membership chair and currently is the Manitoba representative on the standards committee.

Erin thinks that one of the benefits of volunteering is being exposed to the breadth and diversity of other professional planning practices, as well as the joy of building relationships and networking with other planners from across the country, learning about their similarities and differences. Erin thinks that "Volunteering provides opportunities to connect with people and to participate in inspiring conversations". Volunteering gave Erin the ability to meet the people that have been pivotal in her career, and that interaction with others has helped support her own work and has enabled her to in turn support others.

Now, after 14 years working with the Province of Manitoba in the areas of policy and legislation, as well as 'giving back' to the MPPI through volunteering, Erin's advice to others who might be thinking of volunteering is that there are many ways; once a year, at one-time events, all the way to a formal role. Regardless, volunteering is way to reconnect with your peers, younger planners and to expose yourself

to new ideas, as well as to influence the profession and have some fun!

Erin has seen dramatic change in the MPPI over the years. It already had a strong reputation for connecting with professionals when she joined, however the MPPI later played a key role in developing the RPP designation, a robust framework for professionals which helps labour mobility—a huge accomplishment. Further, it stepped up and played host to the CIP national conference in 2018, pushing the boundaries of what a conference looks like by hosting an outdoor event, transforming an alleyway into conference space instead of relying on a traditional banquet hall. MPPI has also stepped up its role in provincial conferences, becoming a key partner along with the Province of Manitoba.

Outside of work, when not volunteering or parenting, Erin continues with her love of reading and running!



Erin McLeery RPP, MCIP

## Alberta Professional Planners Institute

Scott Pragnell has a long-standing history of participating and volunteering in planning, both in Alberta and Canada, beginning in the early 1980s when he joined the Canadian Institute of Planners (CIP), right up to present – as the Deputy Chair of the Professional Standards Council.



Scott Pragnell RPP, MCIP

At that time CIP was a national organization that was mainly focused on conferences, much different from what both it and the Provincial Institute and Territorial Associations (PITA's) have now become. However, Scott's first informal role was helping to organize conferences in the 1990s when the Alberta Association of the Canada Institute of Planners (AACIP), the precursor to the Alberta Professional Planners Institute (APPI), represented planners in Alberta. Later, in the 2000s, Scott participated in the Planning for the Future discussions and the ideas for provincial accreditation of planners, later volunteering on the Registration Committee, leading to a formal role from 2013 to 2014 when he served on APPI Council. After serving on Council, Scott continued to volunteer as an Alberta representative on the CIP Professional Standards Committee, leading to a position of Chair of the committee during 2018 and 2019.

Some of Scott's strongest memories of volunteering are the important early discussions about what the planning profession would look like in Planning for the Future discussions—for example, the core competencies of a planner, later leading to the discussions on getting the right to practice.

For the future, Scott thinks that the current pandemic will only accelerate changes in the way we work—whether people need to be in an office daily, as well as with increases in online shopping and perhaps reduced demand for retail stores and demand

for public transit. Who better to help manage future changes in our cities, towns and rural areas than planners?

What has Scott enjoyed the most about volunteering? The opportunity to meet, share, learn, and enjoy good times with other professionals from across Canada. One of his most memorable meetings was a Council meeting held in Yellowknife, where many people accessed the meeting remotely, which is when Scott realized the importance of the remote learning professional development put in place by APPI. Travel has demonstrated to Scott that although an individual planner might focus on immediate geographic area, altogether Canada's planners have shaped the entire country. Volunteering certainly helps you attain new perspectives!

Many people have had an influence on Scott's career, too many to name, but they do include Mary-Jane Alanko, the Executive Director of APPI, and Eleanor Mohammed, now President of CIP.

Undoubtedly collegial, collaborative, Scott advises that people thinking of volunteering will get much more out of it than they might think, including an improved perspective on what they are doing professionally, making new friends, obtaining new ideas and meeting new challenges.

When he is not chairing meetings, Scott enjoys outdoor sports—biking, running, skiing and sometimes sailing in the Gulf Islands!



# Connecting with the Paskwâw-mostos

SOURCE: iStock

I'm Glinis Buffalo RPP, a proud member of Samson Cree Nation, Maskwacis, in Treaty 6 Territory, and a passionate Indigenous planner. On June 29th, 2019, I set out with eight ladies for a week-long journey into the Banff National Park backcountry to find Paskwâw-mostos (the Plains Cree word for buffalo ). This trip had been in the making since 2017, when Parks Canada released 16 bison in the northeast side of the Park and again by August 2018, when the bison were able to roam free throughout a 1,200 square kilometer reintroduction zone. We originally planned to go the summer of 2018, however calves just had been born, and Parks Canada understandably did not want human interference during this time, so we postponed the trip until 2019.

Our trip was organized as an initiative of the international Buffalo Treaty. The Buffalo Treaty was initially signed by First Nations in Canada and Tribes in the USA on September 24, 2014, and since then additional First Nations and Tribes have gradually joined. To date, the Buffalo Treaty has 30 signatories. The intent of the treaty is to honour, recognize and revitalize the relationships Indigenous Peoples have with the buffalo and their environment. Further, its intent is to restore the buffalo to the homelands of the signatory Nations as buffalo are a cultural and ecological keystone species for Tribes and Nations, as a major source of food and culture.

The first night was spent at Ya Ha Tinda Campground, a Parks Canada ranch and campground located 85 km west of Sundre, AB. I was excited to meet five new ladies and spend time with the three I already

knew. During supper we introduced ourselves and I learned I would be a planner about to be immersed with a group of strong women, both Indigenous and non-Indigenous. Our backgrounds included an ecologist and bison advocate, journalist, biologist, environmental manager, Blackfoot climate change influencer, two keen high school students and a conservationist. We spent the evening visiting and dividing up our food into bear-proof canisters and packing our backpacks correctly, as they ended up weighing 20 kilograms each. We talked about what we wanted to learn from the trip; we went over strict bear safety rules; and our Lead emphasized that each one of us would be pushed out of our comfort zones physically and emotionally, so we came up with rules on how to handle interpersonal conflict among the group.



The 2019 Bison Trip.

SOURCE: *Glinis Buffalo RPP, MCIP*

The next day we started off on our search for the bison. We walked for hours, my muscles and back were on fire. It was not surprising that we did not see any buffalo yet, as we knew they were higher up in the mountains. We found a spot to set up camp and had supper and went to sleep for the night. That night my thoughts were full of regrets that I had joined, and I did not know how I would handle an entire week of this. I saw bear scat everywhere, even right beside our tents, I was terrified and already exhausted.

We woke up and got ready to take on another day in the backcountry. We met up with a park Conservation Officer and discussed the fencing the park has been implementing to manage the bison, and the areas on the map where the bison had been observed. We talked about how Indigenous Peoples have been included in discussions regarding monitoring the bison, hunting and Treaty rights. It was fascinating to learn how the bison were brought to the park from Elk Island National Park, flown in by helicopter. I learned the project is a five-year pilot and will be reviewed in 2021. We headed out on our way, and again, had no luck in finding the bison. We found another area to set up camp, I couldn't help but think about how First Nations and Metis, parks planners, bison management

specialists, grassland restoration specialists, public support, education and awareness, environmental groups and government support, all have a huge role in the success of this project. This really showed me the importance of involving Indigenous Peoples and why traditional knowledge is essential.

It was Tuesday, Day 3, when I started to count down the days until we were done. I had to remind myself to be present. We ended up taking the wrong trail, but it led us to a great opportunity, as we stumbled upon the beautiful Red Deer River. We had lunch. It was beautiful. One of the girls was feeling sad, because yet again we did not find the bison. I had this feeling we would see them, but not today. I told my friend the bison is teaching us patience. I decided to tell a story. "This Buffalo his name is Patience and he went for a walk because he was right hungry, hey?" We had a good laugh. It was a good reminder of sharing our stories, connections and humour, especially in times of uncertainty.

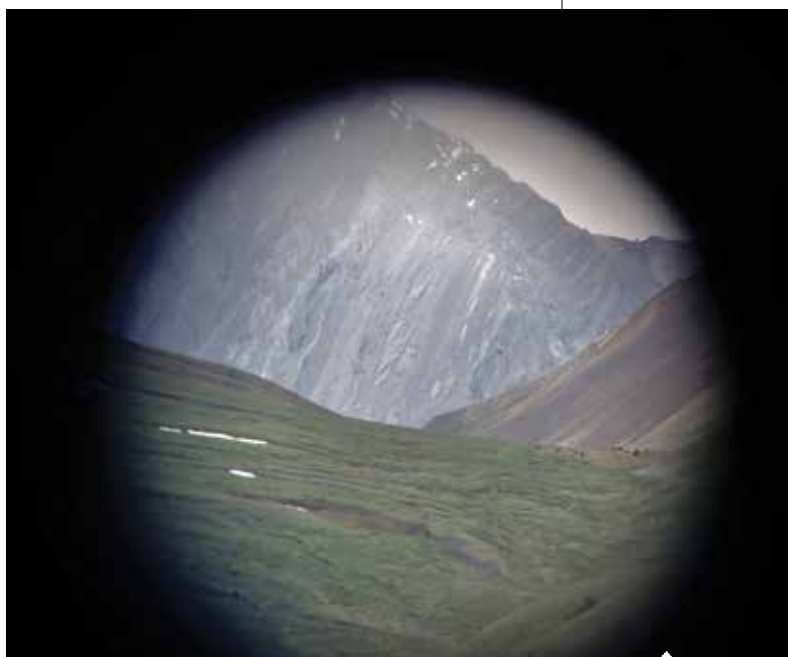
The following morning, I woke up and I was feeling today is the day. I even prayed to the Creator to let us see the bison. We headed out and there on Divide Pass, my life changed forever, as the Creator would grant us a gift. Our Lead was using her binoculars and she

immediately signaled us that she could see the bison. I felt my heart beat faster and my hands trembled when she gave me her binoculars – I could not believe that I would finally see them. When I found the herd, I felt an immediate connection to my ancestors. I felt this is what they felt when they spotted bison to hunt. I counted 34 in the herd. It was beautiful to see the little calves playing with their mommies. It made me think of a painting my brother-in-law painted the year before. They were on top of a ridge approximately five km away from us. We were at the perfect height to spot them. If we did not decide to climb that ridge to see the pass, or if we decided to eat our lunch at the bottom, we would have missed them. The Creator meant for us to see them. Seeing the herd only lasted about 10 minutes, after that, they went on the other side of the pass and were gone. I had tobacco to offer the Creator and all creation. Some of the team cried with tears when they saw the herd. We celebrated by sharing a lunch and we talked about how amazing this experience was and what it meant to each of us to see the bison. We planned to return to the same area so we could see them again the next day. That evening we confirmed the distance of how the far herd was by looking at our map. It was a topography map and it showed the herd was about five kms away. We all made guesses and I knew it was around 5 km away, as my husband is a hunter, and taught me to judge distances using his gun scope in case I ever got lost, so I could calculate how far I would need to walk. It started to rain that evening and since we were all so excited to see the bison again the next day, we went to bed early. It rained all night.

The next day, it continued to rain. The team decided for our safety to stay in our tents and wait out the rain. At bedtime, I was sad because I knew the next day we had to start on our way back, and so we would not be able to see the herd again.

We packed up and hiked to a clearing where we were told the bison had been in April. We could see wallows, which are indentations in the ground made by the bison. Bison create wallows to attract their mates; they urinate in the wallows they carve out of the earth. This is part of their mating ritual. I stood in a wallow and I felt my connection to my ancestors again. I am grateful I have the privilege to learn from my ancestors and from my family about the bison. This connection showed me the importance of immersing myself with the land. It has helped me understand why planners need to continually immerse themselves in the land.

The final morning, we headed back safely to Ya Ha Tinda Ranch. We met with the manager of the ranch,



There they are!

SOURCE: Glinis Buffalo RPP, MCIP

and they made us the most delicious soup I have ever tasted. I was looking forward to being back with my family to share my bison journey and how I found another piece of myself. I will be forever grateful to of been a part of such an important and spiritually moving project. Relocating the bison herd from central Alberta to the Rockies was no simple feat, it took many people with many different skills and strengths to collaborate while placing Indigenous values at the center of the project. Those values are now being taught to all, who like me, will seek out a small herd of bison that will have a huge impact not only on the ecological system but also in the spirits of people.

**Glinis Buffalo RPP, MCIP** is a proud member of Samson Cree Nation, Maskwacis, and a Planning Lead with AECOM with over 15 years of project experience within the public and private sector. She has extensive experience in a wide range of community planning and policy initiatives that includes First Nation community development plans, provincial regional plans, area structure plans, municipal development plans, strategic planning and municipal land use applications. She has extensive experience in designing and facilitating indigenous and stakeholder engagement including working with industry and government. Additionally, Glinis has managed the review of numerous municipal environmental impact assessments to support urban land development applications for large and small infrastructure and recreational development projects. Glinis is a Registered Professional Planner with the Alberta Professional Planners Institute and a Registered Member of the Canadian Institute of Planners.

About the Author



# Innovation and Engagement, A Recipe for Success

SOURCE: iStock

From 2016 to 2018, WSP worked collaboratively with the Tl'azt'en Nation, Indigenous Services Canada (ISC), Res'eau WaterNET and researchers from the University of British Columbia (UBC) to develop and implement an innovative water treatment process that allowed the remote community of Dzit'l'ainli (Middle River, British Columbia) to end a 14-year old boil water advisory.

In 2019, WSP received five (5) engineering awards across the country for this project; two from the Association of Consulting Engineering Companies of British Columbia (ACEC BC), including the top Lieutenant Governor's Award of Engineering Excellence; and three from the Association of Consulting Engineering Companies of Canada (ACEC Canada), including the prestigious Schreyer Award.

According to ACEC Canada, *"For the juror, the simple affordable solution proposed in this project was technically ingenious. The members of the jury applauded the transformational nature of this solution, the close collaboration between all parties and respect for the community. They expressed how this project is a shining example of how the engineering sector should work with First Nations communities."*

This is the story of the Tl'azt'en Nation BLEX system and how ingenuity, teamwork and meaningful community engagement were brought together to put an end to nearly two decades of drinking water advisories.

## The Community

The Tl'azt'en Nation traditional territory covers a vast area along Stuart Lake, in north-central British Columbia. They are a First Nation community known as the *"people by the edge of the bay"*. Their language, Dakelh (*we travel by water*), is a branch of



A thriving partnership.

SOURCE: Gerson S. Neiva PENG.

the Athapaskan language family, which is a large group of Indigenous languages in western North America, predominantly in northwest Canada and Alaska.

The Nation's registered membership is approximately 1,620, with around 600 members living within the main communities of Tache, Binche, Dzitl'ainli (Middle River) and K'uzche.

Middle River is a small and remote community of the Tl'azt'en Nation and is situated approximately 120 kilometres northwest of Fort St. James, British Columbia, on Leo Creek Road alongside Trembleur Lake. There are currently eleven homes in the small village, along with a one-room school that was constructed in 2017. The logging road connecting Fort St. James to Middle River is open year-round.

## The Issue

The source of water for the Dzitl'ainli community is the Middle River, which flows southeast from the outlet of Takla Lake into Trembleur Lake, over 35 kilometres. The water quality is typical of most surface water sources, with high levels of turbidity, colour, organics and presence of coliforms and *E. coli*.

The original community water system was constructed in 1985 to supply water to a school via a submersible pump on the shore of the river. Treatment consisted of a 1-micron cartridge filter and sodium hypochlorite disinfection. Upgrades were made to the system in 1996 and included a distribution system and a package water treatment plant that provided filtration, water softening and UV disinfection. The treatment system was later decommissioned, and a groundwater development program took place from 1996 to 1999 to investigate an alternate source of water for the community. Three wells were drilled, tested and found to be of poor quality water due to high levels of turbidity, aluminium, iron, manganese, lead and chromium.

Single-phase power was brought to Middle River by BC Hydro in 2000, allowing the Nation and the federal government to test different processes, of which a number failed. In 2003, a new treatment system was brought to Middle River to provide pre-treatment of source water. Although functional, the complexity of the new pre-treatment system posed significant challenges to the operators.

By 2016, the community's water treatment system was an assemblage of the numerous attempts to address the water quality issues in the community. The organic matter in the Middle River water was still causing discolouration of the water; reacting with chlorine and producing disinfection-by-products,



The scenic Middle River community.

SOURCE: Gerson S. Neiva PENG.

which are known to be carcinogenic; interfering with UV disinfection by significantly reducing UV transmittance; and contributing to biological regrowth in the distribution pipes. As a result, the community had to haul water jugs from Fort St. James on a weekly basis for the residents in need of potable water.

There are well known technologies and treatment processes available for reduction of turbidity and organic matter in the raw water. These include conventional filtration systems using metal-based coagulants for pre-treatment; membrane systems; oxidation using ozone followed by filtration; and granular activated carbon. Although these processes are proven to effectively reduce turbidity and organic matter in the water, they can be complex, have high operations and maintenance (O&M) requirements, generate excessive backwashing and residuals, and can be cost prohibitive for very small communities.

Middle River continued to be under a boil water advisory which created a culture of distress within the community due to almost two decades without access to safe drinking water. As a result, the Tl'azt'en Nation and ISC decided to bring in a new team of professionals in an attempt to address the water quality issues in Middle River once and for all.

## The Collaboration and Solution

For a number of years, WSP has collaborated with the University of British Columbia (UBC) and provided funds and technical support for research and exploration of ion exchange resins for primary treatment and reduction of organic carbon in raw water, with the intent of finding alternative processes that could be more cost effective, user-friendly and readily available to small and remote communities.



Operator working on the new BIE system.

SOURCE: Gerson S. Neiva P.ENG.

Through several bench scale and field test using natural, raw water, the research and engineering team discovered a new biological water treatment process that contributed to the reduction of organics in raw water. The researchers named the new process BIE (biological ion exchange).

To further understand the effectiveness of the BIE process, WSP and UBC decided to collaborate with Res'eau WaterNET (Res'eau) on a number of additional tests and comparisons to other processes. Res'eau is a non-profit organization primarily funded in part by the federal government through its Networks of Centres of Excellence (NCE), including participation and investments from the Natural Sciences and Engineering Research Council (NSERC), the water industry, engineering firms (including WSP), public organizations, academia and communities. Res'eau is hosted by UBC and co-directed by the Assembly of First Nations (AFN). Support is also provided by Indigenous Services Canada (ISC), one of the original partners of the Res'eau WaterNet program.

The promising results of the BIE system attracted more interest from ISC and they agreed to provide funds for the community engagement process, and the development and implementation of a full-scale pilot plant at the Middle River water treatment plant. The BIE system was believed to have the potential to address the high levels of organic matter in the source

water in a cost-effective manner, treat the water to a point where chlorine and UV disinfection could be used effectively, and possibly put an end to a 14-year old boil water advisory.

### The Engagement

In 2015, the Truth and Reconciliation Commission of Canada (TRC) published its final report detailing the profoundly negative impacts of the residential school system on the lives of the Indigenous peoples of Canada. One of the outcomes of the report was a document detailing 94 Calls to Action, urging all levels of government, educational and religious institutions, businesses and all Canadians to work together in a collaborative manner to recognize the harm caused by residential schools and advance reconciliation.

Call to Action No.92 specifically calls upon the corporate sector in Canada to adopt the *United Nations Declaration on the Rights of Indigenous Peoples* as a reconciliation framework and outlines the role of businesses in the reconciliation process pertaining to Indigenous peoples and their land, resources, sustainability and economic growth. Many businesses across the country recognize the need for smarter and more effective collaboration between government, corporate sector and Indigenous peoples.

The Middle River project was no exception and all parties recognized the need to implement a

community-driven planning and engagement process to identify the expected and intended outcomes of the project, and obtain public support and acceptance. The engagement approach focused on reconciliation in the context of drinking water and how sustainable and healthy water solutions can be executed in Indigenous communities by building consensus and prioritizing solutions according to the needs and aspirations of the community.

Res'eau promotes tailored engagement practices through its Community Circle™ approach to accelerate achievement and streamline innovative solutions for Indigenous and other non-urban communities across Canada. The Community Circle™ fosters a people centric method of accessing local knowledge and obtaining community support in a transparent manner. It emphasizes community experience by sharing of culture-based perspectives and each community's natural environment. It involves interviews, ethnographic studies, prototype creation and enhances the pursuit of innovative solutions rooted in reconciliation and sustainability.

WSP has a history of working closely with Indigenous communities across the country for more than half a century and developing not only sustainable and reliable infrastructure, but also lifelong working relationships and friendships. WSP's projects with these communities have improved economic opportunity, enhanced education and training, and created lasting improvements to quality of life. WSP also understands that, in indigenous cultures, the *Circle* is a symbol of connectivity, cohesion and interaction to



The BLEX system.

SOURCE: Gerson S. Neiva PENG.

ensure everyone is heard and decisions can be made collectively. WSP's Indigenous Relations Policy is based on respect, consultation and engagement, diversity and participation, and shared benefits.

Together and with the invaluable support of the Tl'azt'en Nation, ISC and the First Nations Health Authority (FNHA), WSP and Res'eau conducted regular site visits to the remote community of Middle River and met with the Tl'azt'en Nation leadership, residents and operators to listen to their concerns and expectations, gather their local knowledge, understand their aspirations and cultural connection with the water, discuss treatment goals and share the findings of the research associated with the BLEX system.

The team listened and followed the guidance of the Tl'azt'en Nation leadership before engaging with the community members. This was critical to the



The new BLEX plant installed adjacent to the previous plant.

SOURCE: Gerson S. Neiva PENG.



The operators remove the long-standing boil water advisory sign.

SOURCE: Gerson S. Neiva P.ENG.

engagement process as the Nation's leaders know their community better than anyone else.

The intent of the Community Circle™ approach was to involve all rightsholders and stakeholders from the planning to the post construction phases of the project, encouraging diverse perspectives and collaboration.

The community enthusiastically collaborated in the planning, development, implementation and testing of the new BLEX pilot plant. The community's operator worked with the researchers and engineers and was directly involved with the setup and operations of the pilot system. Obtaining historical knowledge of the local resources and environment also helped WSP, Res'eau and ISC to develop a more in-depth understanding of the water source, from a technical but also cultural perspective.

## The Results

The BLEX pilot plant was operated from 2017 to 2018. Seventy percent of the organic carbons were being removed by the new system. No brine regeneration was required during the 270-day pilot test. In view of the positive results from the pilot plant, the Tl'azt'en Nation agreed to proceed with the design and implementation of a full-scale facility funded by ISC.

WSP was engaged to complete the process design and provide technical advice during the construction phase. Res'eau continued engaging the community members throughout the multiple phases of the project and providing monitoring services. The treatment equipment was constructed by BI PureWater, also a member of the Res'eau network. The package treatment system was installed in a sea can structure in the spring of 2018 and consisted of cartridge filtration,

BLEX for organic carbon reduction, and primary and secondary disinfection with UV and chlorine, respectively.

Commissioning was completed in September 2018 and the plant is currently supplying potable water that meets the Guidelines for Canadian Drinking Water Quality. Consequently, the boil water advisory was lifted by the FNHA.

## The Future

The project team continues to provide technical support to the Tl'azt'en Nation and the community's operator, and monitor the performance of the world's first full-scale BLEX system. Preliminary tests have also shown some potential benefits for larger systems. Researchers and engineers continue to learn more about the Middle River system and its viability for other small and remote communities facing similar challenges.

The new water treatment plant has renewed the community's confidence in their water source and infrastructure. The residents believe that improved conditions will encourage more members to return to the Middle River community and further connect with ancestral lands. Growth is now expected along with the potential for sustainable economic development. More importantly, the residents have access to clean and safe drinking water, which contributes to improved health and social conditions.

This project is an outstanding example of how proper planning and engagement practices are key elements for addressing public concerns early in the process, aligning the project objectives with the community priorities and interests, promoting transparency, enabling more sustainable decisions, and increasing the credibility of the decision makers. Such engagement recognized the value and aspirations of the community members. Innovation, combined with meaningful and proactive engagement, allowed the Tl'azt'en Nation to participate, take ownership of the solution and put an end to a 14-year old boil water advisory.

**Gerson S. Neiva P.ENG.** is a Civil Engineer with over 28 years of experience in the water and wastewater industry. He is currently WSP's Director Indigenous Communities and National Leader Indigenous Initiatives, responsible for business leadership and growth, with a particular emphasis on Indigenous and rural communities. Gerson has been working closely with Indigenous peoples for almost 25 years, developing sustainable infrastructure, economic opportunities and lifelong friendships.

About the Author



# Edmonton's Bus Network Redesign

## Lessons for Planners

In recent years, despite steady population growth, Edmonton has experienced declining transit ridership. To reverse this trend, and to address a mammoth of issues holistically, it was determined that the existing bus network could not simply be tweaked—it needed an overhaul. In doing so, the City of Edmonton carefully balanced multifaceted matters like walking distances, historical transit ridership data, land use, topography, road network characteristics, bus stop locations, budget—and of course, public input. Furthermore, planners gave significant attention to elements of basic human psychology—essential (yet often underrated) in nearly *any* planning exercise—particularly as Edmonton journeys to double its population from 1 to 2 million over the coming decades.

### Introduction

*Fast! Safe! Convenient! Reliable!* Nope—not a car advertisement. Rather, these terms reflect some of the characteristics expected of the City of Edmonton's new bus network, anticipated to go live in mid-2021.

In recent years, despite steady population growth, Edmonton has experienced declining transit ridership—and as a result, declining fare revenues. To reverse this trend, it is acknowledged that the planning profession is ultimately about *people*, and so it must reflect upon basic human psychology. In that regard, there are two distinct types of transit customers—those

*with* and *without* alternatives. Although increasing transit ridership comprised of both customer-types is essential for achieving various city-building goals, most municipalities have found it challenging to attract transit customers who already own a vehicle. Edmonton wants to change this, and *must*, if it is truly endeavouring to double its population from 1 to 2 million over the decades ahead.

Basic human psychology suggests that whenever there are options available, people will generally seek the path of least resistance (e.g., minimise discomfort and maximise pleasure)—the feasibility for which often

Castledowns Transit Centre: In recent years, despite steady population growth, Edmonton has experienced declining transit ridership.

SOURCE: Craig Walker RPP, MCIP



Planners had to balance multifaceted matters like walking distances, historical transit ridership data, land use, topography, road network characteristics, bus stop locations, budget—and of course, public input.

SOURCE: Craig Walker RPP, MCIP

correlates with income. Accordingly, rather than pay \$97 per month for a transit pass, planners have to ask why many people instead opt to spend at least \$15,000 on a vehicle—not to mention the associated costs for insurance, parking, gas, etc. Do people spend these seemingly-irrational amounts simply for the enjoyment or status of driving? Or, are they investing into a mode of transportation which they perceive to be fast, safe, convenient, reliable, and flexible? What if we planned transit systems (and municipalities generally) with those characteristics in mind?



## Context

The City of Edmonton's population is approximately 1 million. However, its current bus network stemmed from an era when the population was just 400,000. In addition to the light rail system, today there are over 200 bus routes, many of which were added to the network in somewhat of a piecemeal manner over time.

As a result, there are now overlapping and seemingly ad hoc bus routes—some of which are too full, while others are too empty. Some operate on time, while others are chronically late. Many suburban road networks and land use patterns force bus routes which are circuitous, slow, and inefficient (and expensive!) to schedule. Even if the budget were to be increased to add buses, bus garages are at capacity. Lastly, Valley Line trains will be operational next year as part of the expanding light rail system—a game-changer for southeast Edmonton.

To address these complex issues holistically, and to reverse the declining transit ridership trend, it was determined that the existing bus network could not simply be tweaked—therefore a decision was made to undertake a complete overhaul.

## About the Project

Before touching *anything*, an overarching Transit Strategy was prepared—a comprehensive policy document which set a long-term vision for various transit-related matters (e.g., network standards, fares, customer experience, etc). This document, created with input from thousands of Edmontonians, was approved by Council in 2017, and authorized planners to commence the Bus Network Redesign project.

Throughout the subsequent two-year process of drafting what would eventually become the final version of the new bus network, planners continuously referred to the Transit Strategy principles. Those principles gave planners guidance on how to balance multifaceted matters like walking distances, historical transit ridership data, land use, topography, road network characteristics, bus stop locations, budget—and of course, public input.

On that last item, nobody knows a neighbourhood and/or transit journey better than transit customers. Acknowledging this, it was anticipated from the beginning of the project that *significant* consultation would be essential. Therefore, in addition to the original public consultation efforts associated with the already-approved Transit Strategy, the Bus Network Redesign planning team held a further 70 public engagement events, resulting in the submission of nearly 8,000 surveys. Similar events were also held with bus operators, the transit union, and City staff from other departments.



Difficult decisions were made to cancel existing scheduled bus services in a few neighbourhoods.

SOURCE: City of Edmonton

The resulting feedback was invaluable to assist planners in creating the first draft of the new bus routes, though the process was not without differing opinions. For example, public input was contradictory on occasion—based upon that unique customer’s preferences, origin/destination, and physical ability. Planners also drew different conclusions on occasion. In such instances, planners would revisit the Transit Strategy principles, gauge best-practices from other municipalities, and then ultimately make *team* decisions perceived to have the greatest number of strengths and the fewest number of weaknesses.

Eventually, the first draft of the new routes was revealed, followed by another significant round of public consultation. As a result of the additional feedback, planners made warranted changes to multiple routes, before taking the final version to Council for approval in late 2019.

### Features of the New Bus Network

At the time of submitting this article, Edmonton Transit Service is finalising the future bus schedules and official network map—to become available at [www.edmonton.ca/newbusroutes](http://www.edmonton.ca/newbusroutes).

Perhaps the most obvious change to the new bus network will be different route *types*. Essentially, in recognition of the differing characteristics of transit users, land uses, and road network patterns generally found in inner versus outer neighbourhoods, the following will be introduced:

1. *“Frequent”* routes will have buses arriving every 15 minutes or better. These routes will predominantly serve major mixed-use corridors within inner neighbourhoods that already have high transit ridership (e.g., Capilano to/from University of Alberta);
2. *“Rapid”* routes will have express buses linking suburban neighbourhoods with popular destinations with no/limited stops in order to better compete with the speed of private vehicles (e.g., Castledowns to/from Downtown). Some rapid routes will operate all day, while others only during peak-periods;
3. *“Crosstown”* routes will have buses connecting various suburban destinations without going through downtown (e.g., Mill Woods to/from West Edmonton Mall); and
4. *“Local”* routes will link neighbourhoods to various community destinations, transit centres, and train stations (e.g., Beverly Heights to/from Coliseum Station).

For a project so complex, this overview article cannot do it justice. However, the following summarises other noteworthy information about the new bus network:

- The budget, number of buses and drivers will not change.
- The number of routes will be cut nearly in half (from ±207 to ±113).



Tawatinâ Bridge: Valley Line trains will be operational next year as part of the expanding light rail system—a game-changer for southeast Edmonton.

SOURCE: Craig Walker RPP, MCIP

- More routes will operate earlier, later, on weekends, and with better frequencies.
- Routes are generally straighter, faster, and better-connected to where people desire to travel.
- One trade-off may be increased walking distances and/or transfers for some customers (e.g., lower-density neighbourhoods). However, most customers remain within 7 minutes' walk of a bus stop.
- Smaller 'community route' buses will continue linking many seniors' centres with various services, in a similar manner to the present.
- For consistency with Transit Strategy principles, and to best steward limited resources, difficult decisions were made to cancel existing *scheduled* bus services in a few neighbourhoods. This was due to factors such as historically low transit ridership, road network constraints, challenging topography, etc. However, to fill some of these voids, a new 'on demand' service will be introduced via a sort of modern-day version of 'dial-a-bus'. Such operations (i.e. whereby customers can book a ride by phone, website, or mobile app) have been successful in other municipalities, using shuttle buses or large passenger vans. At the time of submitting this article, Edmonton Transit Service is preparing a contract for a qualified service provider.

### Lessons for Planners

Numerous learnings from this project are applicable to other disciplines within the broader planning profession, such as:

- Listen! Think *people* first. Citizens have lots to offer, as do colleagues in other departments.
- Do not reinvent the wheel. Other municipalities have tackled similar problems.
- There are often no 'right' or 'wrong' answers in planning, however there are *better* answers.

Help decision-makers evaluate such alternatives (including the 'doing nothing' alternative).

- For contentious matters, consider retaining a consultant. They can be impartial, have often solved similar challenges in other municipalities, and can assist win hearts and minds.
- Plan municipalities with transit in mind at the statutory plan, rezoning, and subdivision stages in a manner that considers:
  - Straighter roads enable better connectivity—for transit and pedestrians alike. Ideally, ensure pedestrian connectivity within 5 minutes *actual* walk (i.e., not 'as-the-crow-flies') to bus stops;
  - Avoid neighbourhood design with lengthy, single access points; and
  - Incorporate mixed land uses and densities. This enables more efficient transit scheduling and ridership throughout the day.

### Conclusion

Projects as impactful as Edmonton's Bus Network Redesign are once-in-a-lifetime legacies. As a planner assigned to that multidisciplinary team for just a short year, upon witnessing the thought, care, and collaboration that went into this enormous undertaking—I'm confident that Edmonton's about to see a boost in transit ridership.

The timing could not be better either, with two key planning documents slated for approval over the next few years—rewrites of Edmonton's Municipal Development Plan and Land Use Bylaw. Those documents (which I also had the privilege of contributing to) will also address elements of basic human psychology, and will immediately enable the City to build upon the foundation of a successful new bus network, as Edmonton endeavours to double its population from 1 to 2 million over the decades ahead.

**Craig Walker RPP, MCIP** designed and evaluated transit routes with the City of Edmonton's Bus Network Redesign planning team in 2018-19. With his multidisciplinary, public and private sector background spanning over 14 years, Craig contributed a unique, international lens with expertise in integrated land use and transportation planning principles.

In addition to various freelance development/planning consulting engagements, Craig is currently employed in a temporary capacity as Planning Officer for Sturgeon County, a diverse municipality bordering the City of Edmonton to the north.

About the Author



# Plan Today, Thrive Tomorrow

## How the City of Medicine Hat's New Growth Management Strategy is working to promote sustainable urban growth

SOURCE: iStock

This article examines the importance of developing stronger links between land use planning, servicing tiers and financial goals and objectives, using Medicine Hat as an example. Land use compatibility alone will not lead to increased sustainability. The form of growth and the level of servicing provided to serve each form of growth, or 'typology', will enable policy makers to understand the full financial implications of various growth models and plan for a more financially sustainable future. Medicine Hat's example illustrates that by considering all three factors of land use, servicing and municipal finance, more sustainable growth scenarios can be developed which yield more positive financial outcomes.

Medicine Hat is planning for a sustainable future. A new Municipal Development Plan (MDP) is being developed which sets out the vision and goals for the City over a 30-year period, to accommodate a population of 100,000 people. What seems apparent is the status quo and 'business as usual' approach to urban growth and development will not provide the citizens and stakeholders with the best future possible.

The key to moving towards a more financially sustainable future is to develop stronger links between land use and servicing and understanding the financial impacts of city design and service levels. The Growth Management Strategy (GMS) looked first at the evidence of expensive linear, low-density growth, and then at ways in which growth can be more

financially sustainable. In this way, the information in the GMS will serve to help the public understand the link between different types of growth, associated costs, and recommend policy directions which can be incorporated into the MDP for Medicine Hat.

Among the unique aspects of this project was to utilize eight 'typologies' as samples for analysis of land use, servicing levels and cost. Each typology was analyzed according to the predominant land uses and level of servicing provided. This included both at-grade and below-grade servicing. In most cases, cities provide a standard 'base' level of servicing. This approach sometimes does not respond well to the adjacent land uses it is intended to serve. Medicine Hat's concerns were two-fold:

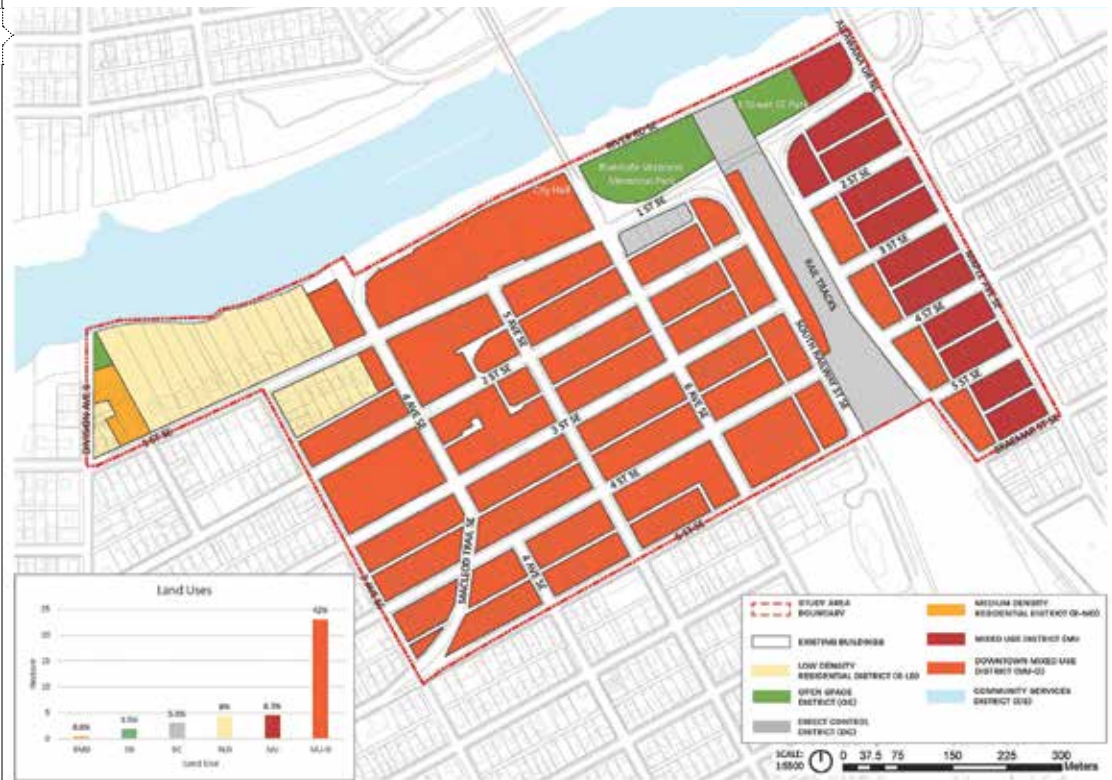
### Existing Land Uses: Suburban Neighbourhood Residential

SOURCE: V3 Companies



### Existing Land Uses: Downtown CBD Boundary

SOURCE: V3 Companies



1. that some low-density areas were being over-serviced, resulting in excess capacity, while higher density areas were contributing substantially more to the bottom line, but were being under-serviced; and,
2. the focus of asset management was short-term and considered mainly operational costs with insufficient accounting for the full lifecycle costs. The cost/benefit equation was out of balance.

## Defining the Typologies

The eight typologies used in the GMS analysis are:

1. Historic Neighbourhood Residential
2. Established Neighbourhood Residential
3. Suburban Neighbourhood Residential
4. Downtown (Central Business District)
5. Corridor Mixed Use
6. Regional Power Centre
7. Light Industrial
8. Heavy Industrial

The eight typologies yielded financial results which showed a range of values indicative of the amount of population being served, the amount of employment uses, the degree of mixed-uses, and the overall costs to maintain infrastructure within a given typology. The range is illustra

The takeaways from the typology analysis are:

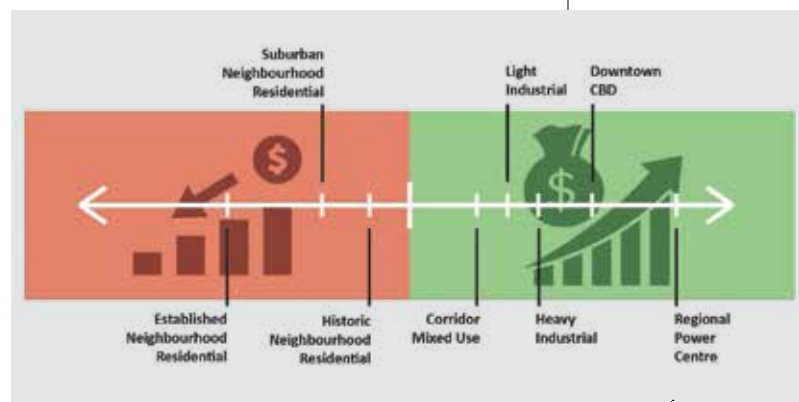
1. purely residential neighbourhoods require services which have costs that tend to exceed the revenue generated from that typology.
2. creating a more mixed-use environment and increasing the assessed value of property (through redevelopment and infill) will help to balance municipal finances.

Another way to put it is, focussing on increasing assessed values will have more impact than simply adding more multiple unit dwellings. Financial sustainability is reliant on increasing the dollars per hectare of revenue (based on assessed value), not necessarily increasing the number of people per hectare.

Another important element for Medicine Hat is to promote and maintain a balance between residential and employment uses. If employment uses relocate outside the city, and residential population continues to grow inside the city, this could potentially put upward pressure on the mill rate in Medicine Hat over the next 30-year period.

## Financial Contribution of Each Typology

Typology	Net Financial Contribution	Net Financial Contribution (per ha.)
Regional Power Centre	\$1,180,000	\$23,274
Downtown (Central Business District)	\$680,000	\$12,431
Heavy Industrial	\$436,000	\$6,556
Light Industrial	\$770,000	\$5,965
Corridor Mixed Use	\$196,000	\$5,117
Historic Neighbourhood Residential	(\$152,000)	(\$1,792)
Suburban Neighbourhood Residential	(\$380,000)	(\$5,711)
Established Neighbourhood Residential	(\$1,470,000)	(\$10,992)



## Future Growth Scenarios

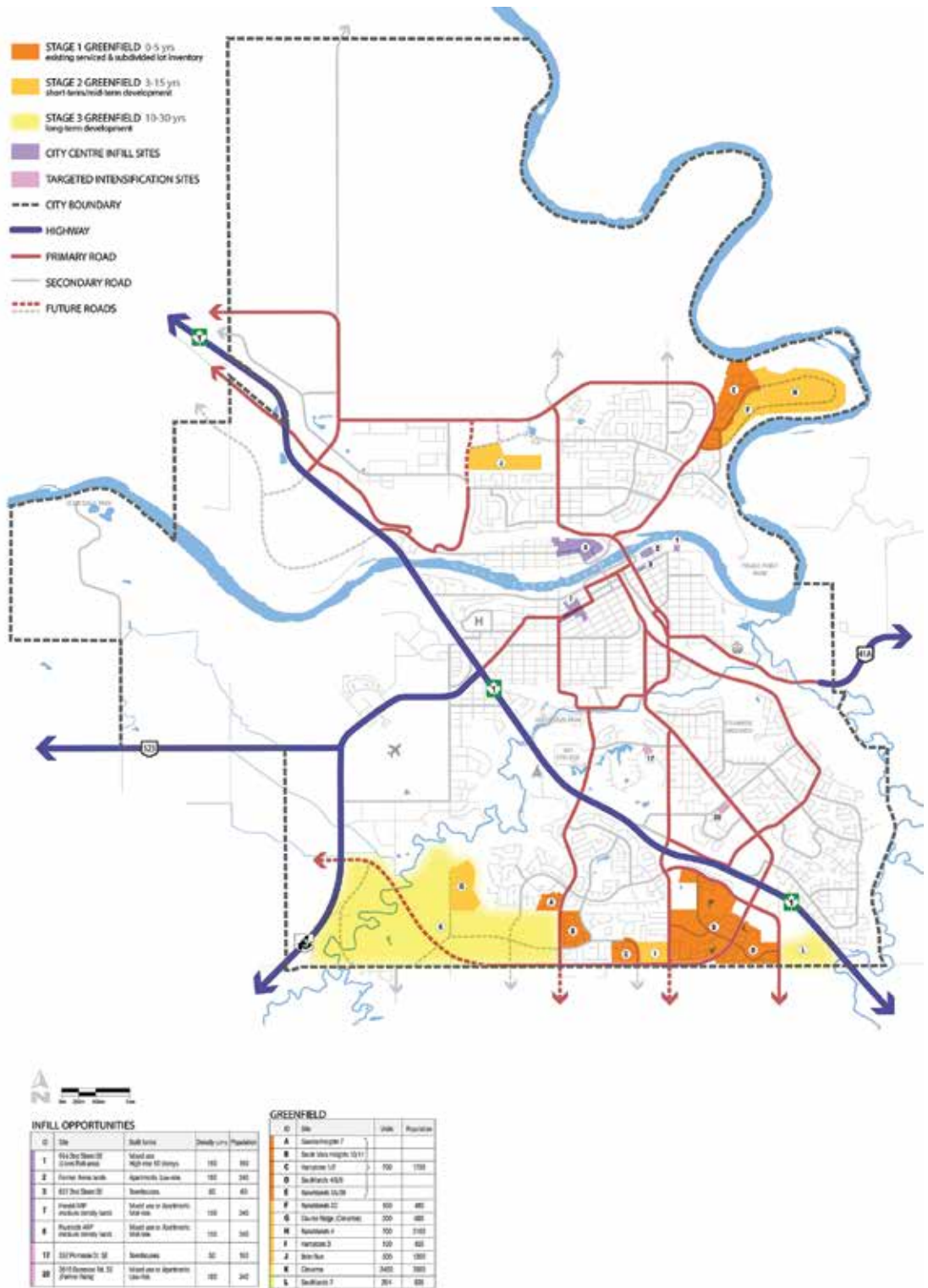
The second part of this study is the application of three future growth scenarios which are based on findings from the typologies. The scenarios are essentially projected buildouts of the city to a population of 100,000 based on three levels of infill development – 10%, 20% and 30%.

Thirdly, the analysis provides a detailed breakdown of the financial impacts of applying three new servicing tiers to the three Growth Scenarios. Overall, growth as defined in each of the Growth Scenarios is expected to provide the City with an overall financial benefit. This benefit has been estimated to be equivalent to lower municipal tax rates in the range of 3% to 8.4% by the end of the forecast in 2048.

Ranking Typology  
Financial Contributions  
SOURCE: V3 Companies

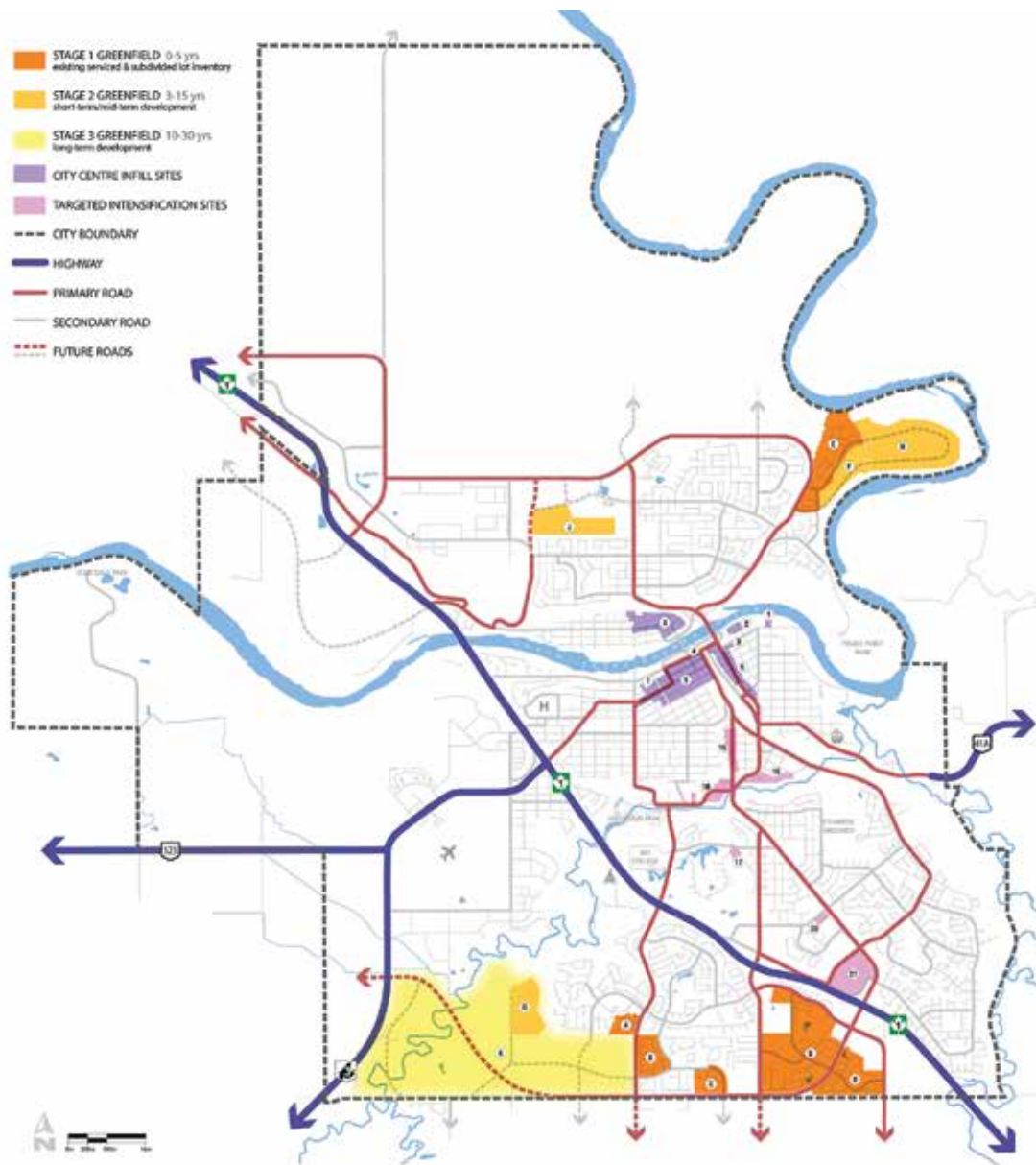
# Residential Growth Scenario 1 - Target Infill Growth 10%

SOURCE: V3 Companies



## Residential Growth Scenario 3 - Target Infill Growth 30%

SOURCE: V3 Companies



### INFILL OPPORTUNITIES

ID	Site	Build form	Density (units/ha)	Population
1	544 2nd Street SE, 6-acre retail site	Mixed use, high-rise 10 stories	100	400
2	Former Plaza North	Apartment/ townhome	100	240
3	427 2nd Street SE	Townhouse	80	48
4	480 1st St. SE, 10-acre lot	Apartment/ townhome	200	80
5	Commercial site	Mixed use, 10-story	200	800
6	North Highway 10 & Highway 100, 10-acre site	Mixed use in Apartments, townhome	100	240
7	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
8	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
9	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
10	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
11	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
12	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
13	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
14	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
15	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
16	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
17	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
18	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
19	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
20	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240
21	1000 1st St. SE, 10-acre site	Mixed use in Apartments, townhome	100	240

### GREENFIELD

ID	Site	Units	Population
A	Southwest 1st	100	400
B	Southwest 1st	100	400
C	Southwest 1st	100	400
D	Southwest 1st	100	400
E	Southwest 1st	100	400
F	Southwest 1st	100	400
G	Southwest 1st	100	400
H	Southwest 1st	100	400
I	Southwest 1st	100	400
J	Southwest 1st	100	400
K	Southwest 1st	100	400

The magnitude of the financial benefits depends on, not only the amount of growth, but also the nature of growth. In addition, the service level standards applied to new growth also have an impact on the fiscal impact analysis results. A key assumption in achieving a positive financial result for each of the Growth Scenarios is the assumption the City will achieve 'balanced growth' – where non-residential development is assumed to occur at a pace equivalent to residential growth. Overall, the focus of municipal growth policy should be on encouraging redevelopment of all scales – everything from simple additions to new suites up to complete replacement of depreciated housing stock. Coupling this with ensuring appropriate (i.e. right-sized) infrastructure for the development being served, should provide a solid growth plan and lessen worries about financial sustainability.

### Summary and Key Outcomes

The outcome of the GMS was a set of Policy Directions that were prepared to guide the development of Medicine Hat's updated MDP.

Policy Directions informing MDP update:

3. Regional Development – consider a 'no net loss' approach to all aspects of regional development, especially the retention and growth of employment uses.
4. Sector Planning – consider a more comprehensive framework for future urban growth.
5. Grow Concentrically around the City Centre – more benefits than linear growth, encourages movement to the City Centre, caters to transit, and ensure there is as much proximity to the City Centre as possible.
6. Develop Comprehensive Neighbourhoods – should be centred around elementary school catchment areas, base neighbourhood size on a walkable catchment area to a central community-based facility.
7. Lead by Example – base location decisions for new public investments in major infrastructure on considerations and promotion of high-level goals.
8. Rezoning and land use change should consider financial considerations – rezoning requests could include an analysis to understand long term financial impact of the change
9. Area Structure Plans/Concept Plans should include a financial analysis – examines the full, life-cycle development costs and submit information which will allow the City to budget for the ongoing operation/maintenance, life-cycle costs of new infrastructure over an extended period of time, and identify potential funding sources.

10. Medicine Hat policy should direct large, city-wide facilities and public destinations to the City Centre.

In the final analysis, growth, as defined in each of the Growth Scenarios (10% to 30% infill) is expected to provide the City with an overall financial benefit. This benefit has been estimated to be equivalent to lower municipal tax rates in the range of 3% to 8.4% by the end of the forecast in 2048.

Furthermore, a multi-tiered approach to service standards, also has implications for the financial results. Generally, implementation of lower service standards increases the benefits of growth by a factor of two (comparing the lowest standard against the highest standard).

The best strategy going forward is not to focus on only one aspect of sustainable growth. There are social, economic and environmental dimensions of growth which should also be considered. However, if the main focus is on more financial sustainability, the best strategy is to:

11. implement multiple tiers of servicing standards and apply them appropriately to expected land uses identified in long-range plans;
12. maintain balanced amounts of non-residential and employment uses;
13. encourage, through policy, redevelopment of property which leads to higher assessments; and,
14. design neighbourhoods for long-term evolution towards urban mixed-uses and encourage redevelopment.

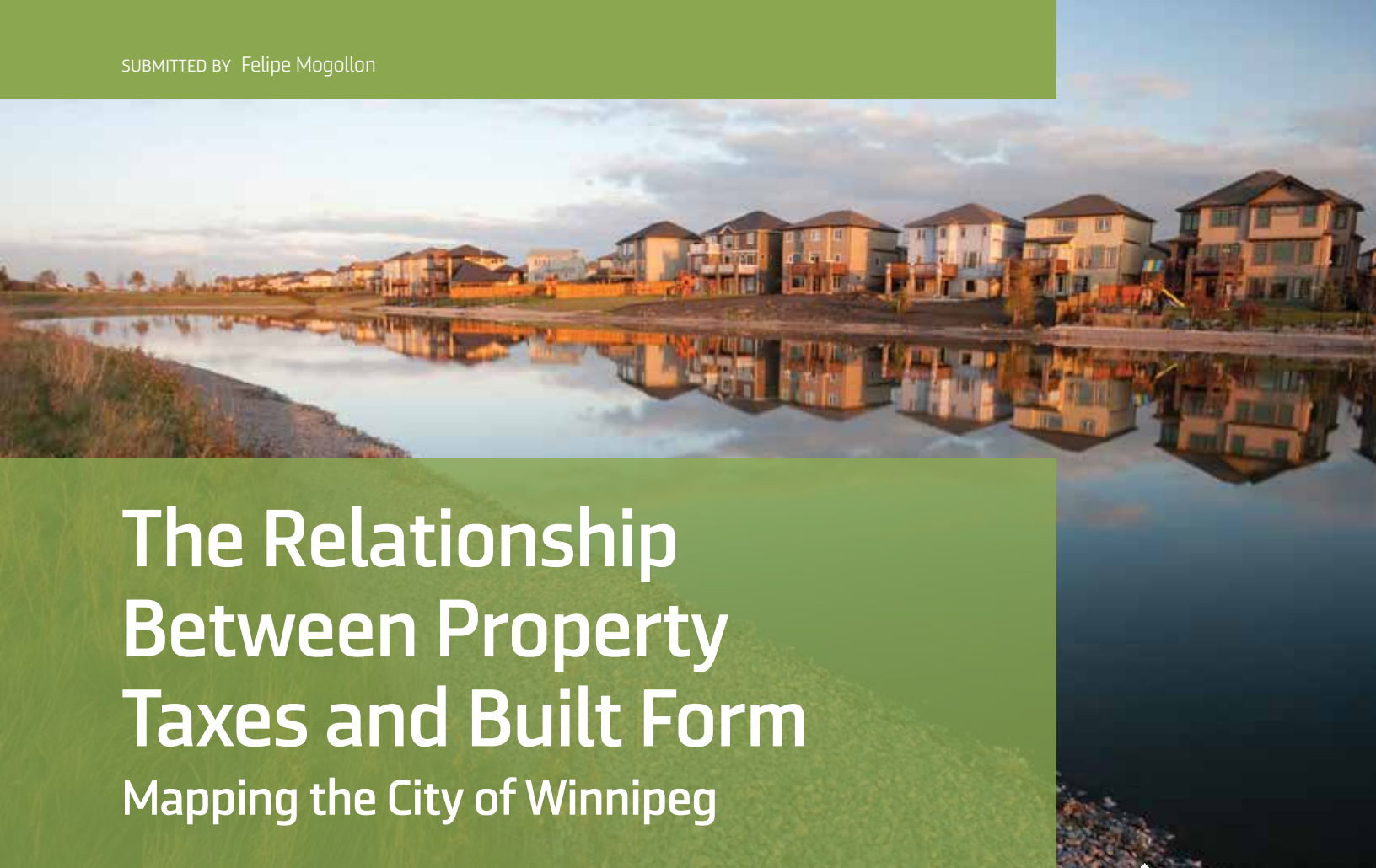
The Medicine Hat Municipal Development Plan has been drafted and will soon be presented to City Council for approval. It is clear that the typologies, servicing-levels, growth scenarios and policy directions identified in the GMS have influenced the updated MDP and will provide the City of Medicine Hat with a sustainable development framework to thrive in the future.

**Robert Sissons MSC** is the Superintendent of Planning Policy at the City of Medicine Hat. Robert's professional interest includes seeking pragmatic solutions to the financial challenges facing our communities.

**Nik Kinzel-Cadrin** is a Saskatoon-based junior planner, formerly with V3 Companies of Canada in their Saskatoon office. He has experience in both public and private practice.

**Alan Wallace RPP, MCIP, LEED-GA** was formerly the Planning Lead for V3 Companies of Canada based in V3's Saskatoon Office. Alan is a private planning consultant, and formerly the Director of Planning and Development for the City of Saskatoon.

About the Authors



# The Relationship Between Property Taxes and Built Form

## Mapping the City of Winnipeg

SOURCE: iStock

Property taxes are the main source of revenue for Canadian municipalities; however, how does property tax influence the spatial arrangement of people, goods, roads and amenities in a City? This article explores the relationship between property tax and the urban form in the City of Winnipeg. By using secondary data such as the City's annual investment reports and Open GIS Data, this documents maps and analyzes key elements of Winnipeg's urban form in relation to Winnipeg's property tax.

By comparing Winnipeg's urban form and its property tax revenue by neighbourhood, the article tries to help urban planners and policy makers to create and encourage a truly sustainable (fiscal, social and environmental) urban form.

### Introduction

This article is a summary of my major degree project presented at the University of Manitoba in April 2019. The article explores a possible relationship between urban form and municipal property tax in the City of Winnipeg. Urban form is the spatial arrangement of persons, goods, information and physical features such as buildings, streets, utilities, and natural elements which modify a permanent space (Lynch, 1984, pp. 47-48-54). By using the method of spatial analysis of secondary data, the article tries to show how

municipal property tax can interfere with the spatial arrangement of persons, goods, information and physical features in the City of Winnipeg.

The article summarizes secondary data, including official reports, data sets, and documents that were available on the City of Winnipeg website. Also, the present research contains Geographic Information Systems (GIS) data that were obtained from the University of Manitoba Library. GIS information provided a base layer for the spatial.

This paper tries to understand the possible relationship between urban form and the municipal property tax in the City of Winnipeg by answering the following questions:

1. How much revenue does the City of Winnipeg raise in property taxes from each neighbourhood versus how much was spent in each neighbourhood from 2014 to 2018 capital budget?
2. How does density influence revenue?
3. What are the implications and relationships between raising property taxes and urban form?

*“Politicians and officials at all levels of government seem to agree with most citizens that Canada’s urban infrastructure needs to be repaired and extended.” Bird 2017, 3*

At the same time, planners and city officials tend to forget that property taxes shape our cities. Through different property tax policies, city officials create a framework to which development and residents adapt.

Adaptation is a characteristic of human nature and cities, as reflected by glorious expressions of human pride, relief, and wonder. Throughout history, there have been several examples showing the ability of human adaptation, resulting in the creation of different urban and architectural forms. For Fischel (2001), urban adaption occurs when residents desire municipal services, but do not want to pay enough tax to finance these services (Fischel 2001, 158). The idea of desire for services without paying for them has created innovative strategies to avoid paying taxes. For example, for a brief period, Paris property taxation was determined by the square footage of all floors, but attics were excluded (McCabe 2000, 161). As a result, architects designed buildings that include useful spaces on the ceiling known as mansards that were tax-free. Also, between 1696 and 1798 a Window Tax was collected in England to get more revenue, but the immediate effect was that some residents closed their windows to avoid paying more taxes (McCabe 2000, 161).

Canadian municipalities should explore the relationship between property tax and built form because the municipal property tax is the primary source of revenue for municipalities. In 1998, property tax represented, on average, almost 57 percent of municipal incomes, among all Canadian cities (Slack 2002, 8). Therefore, it pays for most of the capital

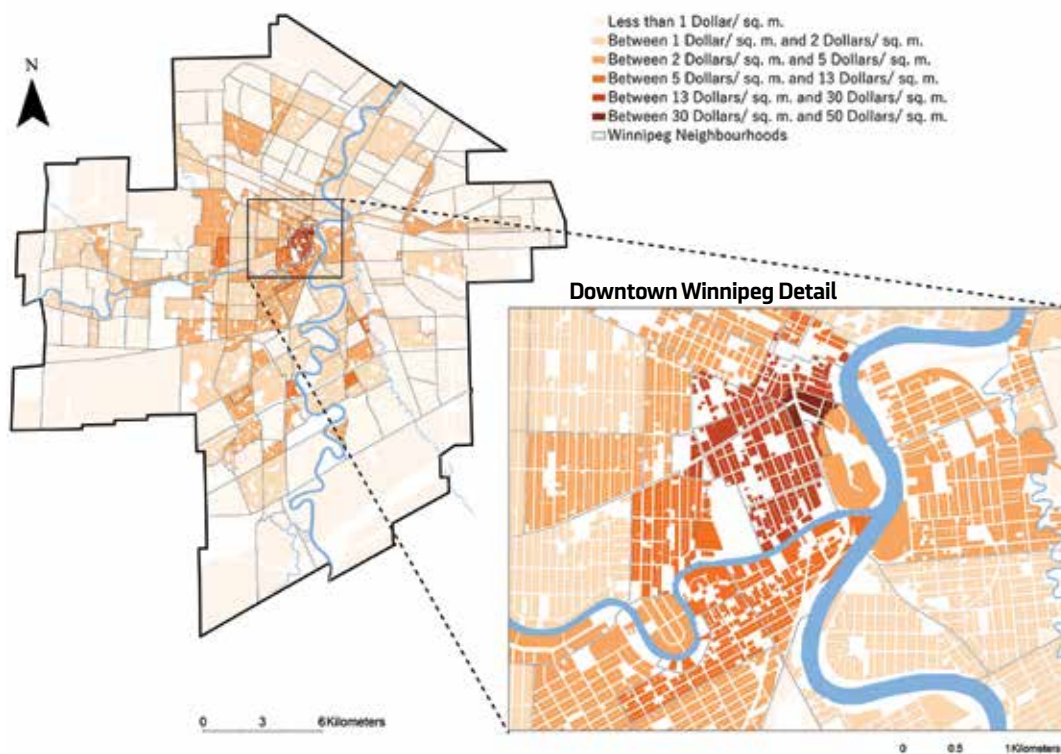
investments and operation of a city. For example, it is common to see developers in the private sector keep track of every square foot and dollar spent on any development. As a result, indirect costs such as permits, designs, and marketing are considered during the life of the project. However, in the public sector, it is highly unlikely to see a continuous revision on every infrastructure and planning project that the city develops. If city officials had created policies through a cost-benefit analysis while approving subdivisions, Canadian municipalities’ urban form could have been different, and the current infrastructure deficit could be lower.

However, cities are not similar to a private company. Instead, cities are a complex mixture of political and fiscal institutions, a combination of public (infrastructure and services), and private capital, that provides public services which affect the urban form. Therefore, our current urban form is the result of on-going battles and agreements between political and economic interests of the public and private sectors. For Lynch (1984), the result of these battles are short term policies which are fragmented and biased most of the time (Lynch 1984, 40). Policies should consider ways to force change and adaptation by creating innovative ideas that have direct implications on how citizens live and thrive in the urban form.

This study aims to provide both a better understanding of municipal property tax and relevant aspects of urban form. By using secondary data, this document maps and analyzes elements of the municipal property tax and urban form that influence the spatial arrangement of people, goods, information and physical features in the City of Winnipeg. It identifies the amount of revenue different neighbourhoods provide to the City through the municipal property tax and compares this with the resultant effects in the urban form. By identifying the urban form of neighbourhoods that provide the City with more revenue, city officials and policymakers could encourage private developers to create new neighbourhoods that have similar characteristics. Therefore, planning and taxation could be used as tools that will help reduce the current infrastructure deficit in the City of Winnipeg.

The municipal property tax is the primary source of revenue for the City of Winnipeg, representing almost 53 percent of its income on average between 2014 and 2018. Property tax plays a significant role in both funding capital projects and shaping the urban form. Moreover, city reports show expected deficits totalling \$6.9 billion between 2018 and 2027 on capital

## Property Tax per Square Metre (by Neighbourhood) in 2018



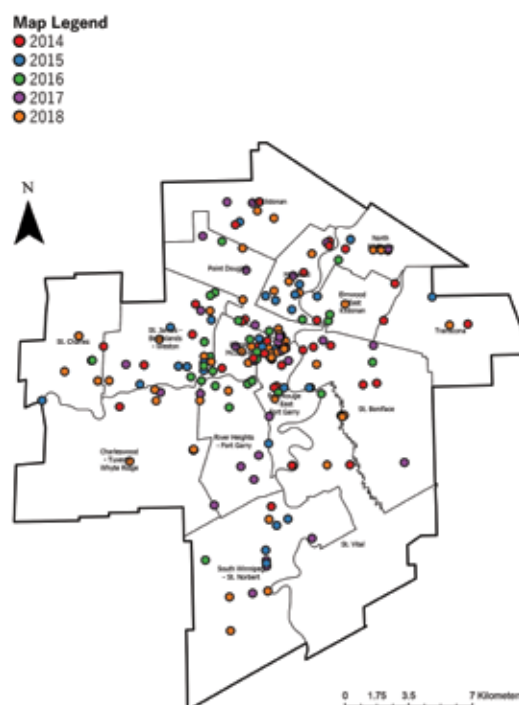
SOURCE:

Summarized information by author; <https://data.winnipeg.ca/Assessment-Taxation-Corporate/Assessment-Parcels/d4mq-wa44>; City of Winnipeg; 2018, Nov 11

## Total Property Tax Raised by Neighbourhood in 2018



## Capital Projects from 2014 to 2018



SOURCES:

(Left) Summarized information by author; <https://data.winnipeg.ca/Assessment-Taxation-Corporate/Assessment-Parcels/d4mq-wa44>; City of Winnipeg; 2018, Nov 1

(Right) Adapted information by author; [http://openbudget.winnipeg.ca/#/year/2014/capital/0/departement/Public+Works/0/project\\_description?vis=pieChart](http://openbudget.winnipeg.ca/#/year/2014/capital/0/departement/Public+Works/0/project_description?vis=pieChart); City of Winnipeg; 2018, Oct 20

investment in infrastructure, that needs to be solved (City of Winnipeg 2018, 9). Therefore, city officials need to identify aspects of the current taxation system that might influence the urban form to reduce the gap between total capital investment requirements and estimated future capital funding.

The City of Winnipeg is facing a fiscal dilemma. On the one hand, the City has a severe deficit from allocating resources towards building and maintaining infrastructure. On the other hand, Canadian municipalities are a creation of a province, which prevents cities like Winnipeg from getting (or creating) new sources of revenue to solve the current infrastructure deficit. To reduce this gap, Winnipeggers need to understand in a more fine-grained basis the possible relationship between urban form and property tax. By considering the relationship between property tax and urban form, city officials will be able to use planning and taxation tools to influence business location and housing density in specific areas of the city. Therefore, planning and taxation tools could help reduce the current infrastructure deficit and create an urban form more sustainable and feasible from economic, social, and environmental perspectives.

Although Fischel (2001) argues that the property tax could be considered as a benefit tax, as it encompasses the benefits received from local services. This empirical research shows that services and amenities are not reflected in Winnipeg's municipal property tax. Instead, this study confirms what Slack (2002) argues about property tax, as a system that promotes sprawl developments. In fact, Winnipeg's municipal property tax system seems to subsidize low-density neighbourhoods and single-family houses, as the percentage of the assessed value is the same for all types of housing.

This study shows that density is a relevant aspect of the urban form. Therefore, density can measure a variety of features of cities and can help planners and private developers to create policies and plans that provide public and private services (Ulfarsson 2003, 505). This study indicates that in Winnipeg, there is a direct relationship between urban form and revenue collected from the municipal property tax as denser neighbourhoods provide more revenue (measured in dollars per square metre) to Winnipeg's budget.

This study also shows evidence of how different ways of interpreting density can affect the urban form of the City of Winnipeg. The method used to determine density plays a vital role in politics and planning. On the one hand, politicians interpret density as the number of people who live in a neighbourhood,

because of their focus on the number of constituents or voters. On the other hand, planners see density as the number of dwellings per acre or hectare in a neighbourhood. This study shows that both approaches are valid, but show different aspects of the situation. Therefore, the misunderstanding between politicians and planners may have contributed to policies that are contrary to the political interest or planning goals, and affect the urban environment. In Winnipeg, investments in capital projects in the last few years (i.e. 2014 to 2019) highlight the conceptual gap between politicians and planners and show that the relationship between municipal property tax and urban form has not been sufficiently considered.

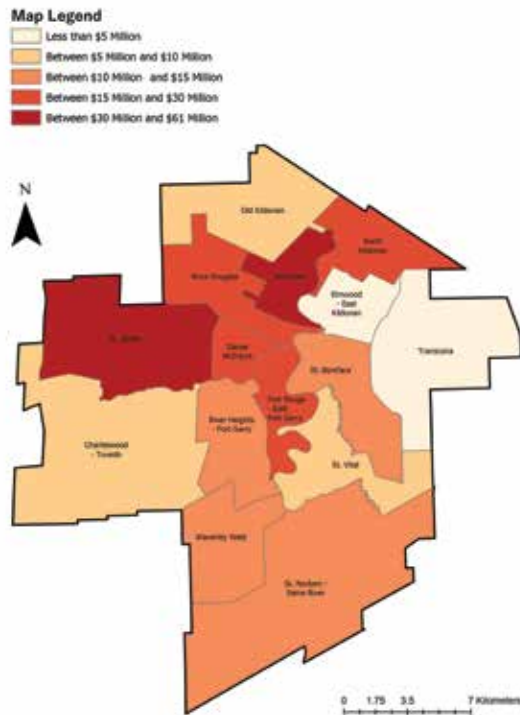
Evidence presented in this study seems to indicate a disconnection between planning policy and investments. On the one hand, Winnipeg's development plan (OurWinnipeg) outlines high level guidelines to create complete communities and smart growth. On the other hand, investments in infrastructure and other capital projects in the last five years, tend to promote sprawl and low-density developments.

Throughout OurWinnipeg, the reader can identify planning contradictions, that confirm the urgent need to think collectively and holistically of how municipal property tax can re-shape Winnipeg's urban form. For example, some of the planning contradictions are neighbourhoods that have a higher percentage of parks and open spaces, and lower dwellings per acre that contribute no more than a dollar per square meter of private property. In contrast, neighbourhoods in the inner city which have a lower percentage of parks and open spaces, but a higher number of dwellings per acre, contribute twice as much as newer developments.

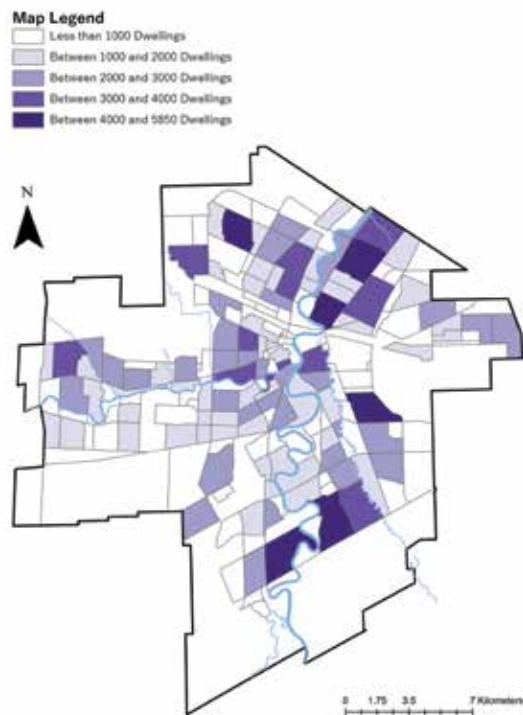
The fact that higher density neighbourhoods are the highest contributors to the city's budget seem to indicate that density plays an important role in the city's revenue. This study seems to indicate that higher density neighbourhoods have fewer amenities, less land dedicated to parks and open spaces, and have more roads which require more maintenance, and yet, seem to subsidize new suburban developments.

This empirical research has important implications for the City of Winnipeg, as it tries to open a conversation among city departments, politicians, private developers, and the public. By understanding the relationship between the municipal property tax and urban form, city officials from different departments, private developers and the public can find common ground and establish policies that follow Winnipeg's development plan, OurWinnipeg (2011).

## Capital Investments by Ward from 2014 to 2018



## Occupied Dwellings by Neighbourhood

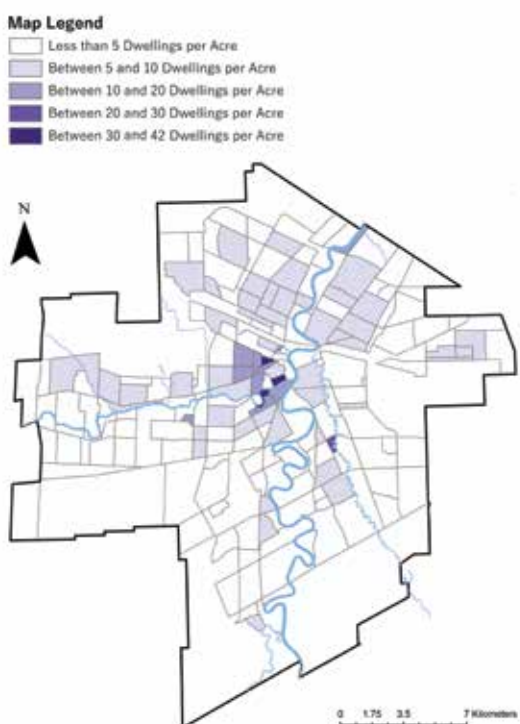


### SOURCES:

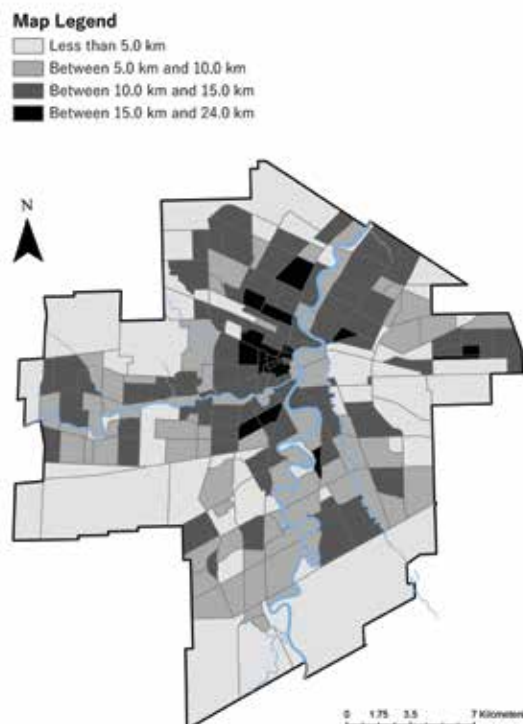
(Left) Adapted information by author; "[http://openbudget.winnipeg.ca/#/year/2014/capital/0/departement/Public+Works/0/project\\_description?vis=pieChart](http://openbudget.winnipeg.ca/#/year/2014/capital/0/departement/Public+Works/0/project_description?vis=pieChart)"; City of Winnipeg; 2018, Oct 20

(Right) Adapted from GIS data (2018) and Census Data information (2011) by author; "<https://winnipeg.ca/census/2011/> and University of Manitoba Library"; City of Winnipeg; 2018, Dec 1.

## Number of Dwellings per Acre by Neighbourhood



## Ratio of Kilometres of Roads by Neighbourhood in 2018



### SOURCES:

(Left) Adapted from GIS data (2018) and Census Data information (2011) by author; "<https://winnipeg.ca/census/2011/> and University of Manitoba Library"; City of Winnipeg; 2018, Dec 1.

(Right) Adapted from GIS data (2018) by author; "University of Manitoba Library"; City of Winnipeg.

## SOURCES:

(Top Left) Adapted from GIS data (2018) by author; "University of Manitoba Library"; City of Winnipeg

(Top Right) Adapted from GIS data (2018) by author; "University of Manitoba Library"; City of Winnipeg.

(Bottom Left) Adapted from GIS data (2018) and Census Data information (2011) by author; "https://winnipeg.ca/census/2011/" and University of Manitoba Library"; City of Winnipeg; 2018, Dec 1.

## END NOTES

Bird, Richard & Slack, Enid. 2017. *Financing Infrastructure: Who Should Pay?* Montreal, Kingston, London & Chicago: McGill-Queen's University Press.

City of Winnipeg. 2011. *Our Winnipeg*. Winnipeg: City of Winnipeg.

City of Winnipeg. 2018. *Valuation of Income-Producing Properties*. Winnipeg: Assessment and Taxation Department.

Fischel, William A. 2001. "Homevoters, Municipal Corporative Governance, and the Benefit View of the Property Tax." *National Tax Journal* 54, 1157-173.

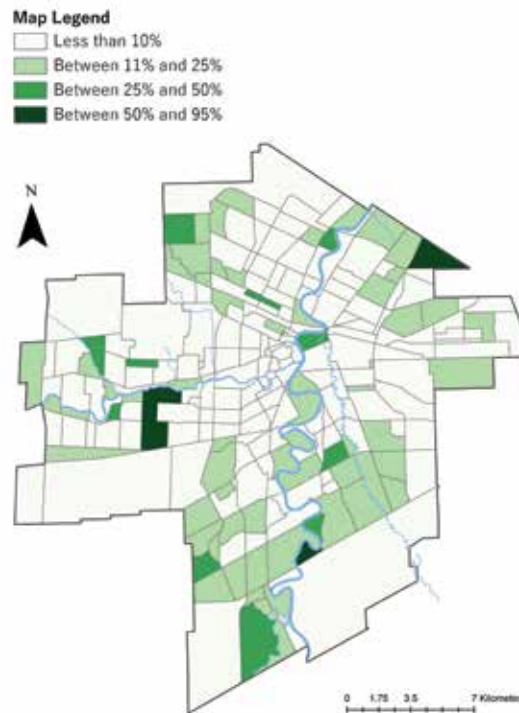
Lynch, Kevin. 1984. *Good City Form*. Cambridge, Massachusetts, and London, England: The MIT Press.

McCabe, Robert M. Ward and Chica. 2000. "Plat Maps as a History and Geography Teaching Tool." *The History Teacher*, Vol. 33, No. 2 153 - 173.

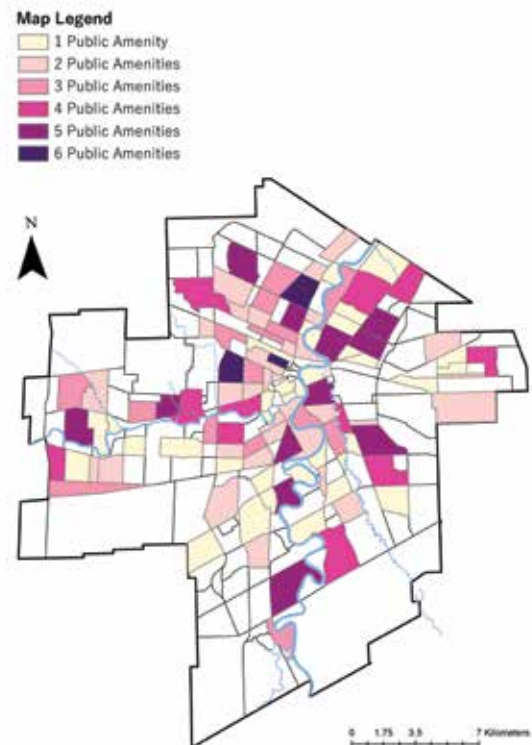
Slack, Enid. 2002. "Municipal Finance and Pattern of Urban Growth." *C.D. Howe Institute*. February 22. <https://www.cdhowe.org/public-policy-research/municipal-finance-and-pattern-urban-growth>.

Ulfarsson, Jhon I. Carruthers and Gudmundur F. 2003. "Urban Sprawl and the Cost of Public Services." *Environment and Planning B: Planning and Design*, Vol. 30. 503-522.

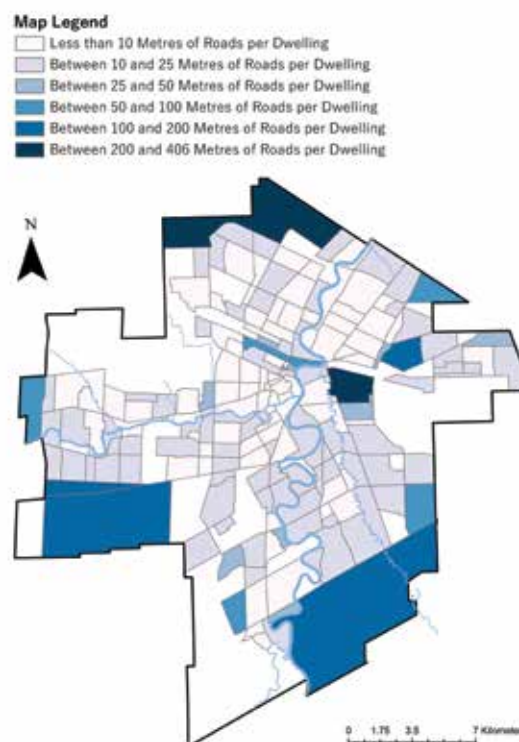
## Percentage of Parks and Open Spaces by Neighbourhood in 2018



## Public Amenities per Neighbourhood in 2018

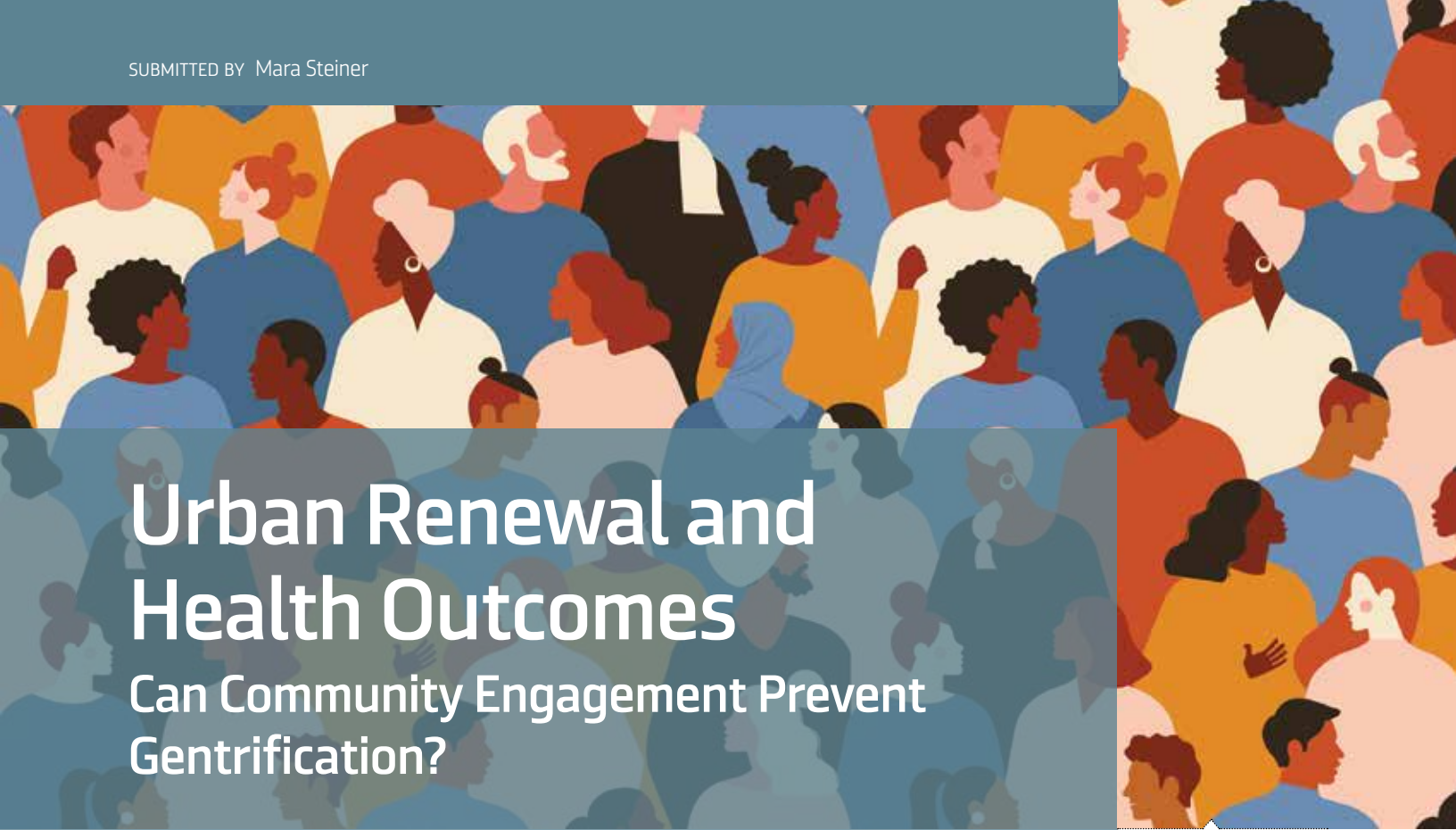


## Metres of Roads per Dwelling



**Felipe Mogollon** is an Urban Planner with over 12 years of experience in, urban design, infrastructure, and real estate projects in Canada, South America, Europe and Northern Africa, and currently works in AECOM's Urbanism + Planning group in Winnipeg. Felipe has a Master of City Planning degree from the University of Manitoba (2019), and a Postgraduate Diploma in Urban Law (2014) and Bachelor of Architecture (5-year Professional Degree) (2009) from Pontificia Universidad Javeriana. He has been a Licensed Architect by the CPNAA (Colombia) since 2009 and is a Candidate Member of the Canadian Institute of Planners and the Manitoba Professional Planners Institute.

About the Author



# Urban Renewal and Health Outcomes

## Can Community Engagement Prevent Gentrification?

SOURCE: iStock

“They’re over there making that huge big new arena, and here we are suffering on their path. They’re taking over this block and they’re going to run us out of here...”  
(Unknown, Voices from the Street, 2018).

These sentiments were expressed by a homeless youth in Edmonton, recorded by Vicki-Lynn Moses in her research on urban revitalization in Edmonton’s core. Urban revitalization or renewal refers to the process by which an urban space undergoes new development, with the intent of improving, not only the appearance of the neighbourhood but also its safety and usability for its residents (Mehdipanah, Marra, Melis, & Gelormino, 2018; Jalaludin et al, 2012; Semenza, March, & Bontempo, 2006). When done right, urban renewal can lead to increased social cohesion and improved health outcomes. However, as the opening quote indicates, these projects may lead to an unintended consequence: gentrification. Gentrification can occur when a low-income neighbourhood is revitalized, pushing its original occupants out as new, higher-income residents move in.

This article aims to explore how urban renewal and gentrification can impact population health outcomes and will respond to the following question: can participatory community engagement help prevent gentrification outcomes in the context of urban renewal projects?

### Background

Urban renewal and gentrification are not new terms. In fact, gentrification was a term originally introduced in the 1960s by Ruth Glass, to describe the forced relocation of low-income residents (National Community Reinvestment Coalition [CRC], 2020). Since then, our understanding of gentrification and the factors that influence it have evolved, making it a multi-factorial problem. For the purpose of this article, I will be referring only to gentrification that is ‘jump-started’ as a result of urban renewal. Furthermore, this article is not meant to condemn urban renewal projects, but rather discuss the potential they have to impact population health outcomes.

The relationship between population health and the urban environment has been well-established across the public health and planning literature. It is such a well-accepted paradigm that many governments use health outcomes as a justification for their planning projects (Cole et al., 2017, p. 1119). The Healthy Cities program, which was launched in 1986 by the World Health Organization, describes how urban development can be used as a tool to support health equity: “The

importance of managing and planning urbanization in a way that advances, rather than holds back, health and health equity will only grow" (WHO, 2020).

### Urban Renewal, Gentrification & Health

It has already been suggested that urban renewal practices can result in gentrification, which leads to poor health outcomes in the affected population. So, why bother with urban renewal at all? As indicated in a review by Mehdipanah et al. (2018), urban renewal can lead to positive health outcomes for the population living in the affected neighbourhood. For example, developments that aim to improve walkability or introduce urban greenery, have been demonstrated to not only improve the aesthetics of a neighbourhood but improve social cohesion and improve mental health (Rojas-Rueda et al., 2019).

*"...factors influencing active mobility and physical activity include perceived accessibility, park maintenance and size, availability of amenities, aesthetic features, and safety"*

Furthermore, it is important to remember that renewal projects often occur in low-income neighbourhoods, which tend to experience environmental health inequities. A 2015 review examining the relationship between the built environment and health inequities demonstrated that "...factors influencing active mobility and physical activity include perceived accessibility, park maintenance and size, availability of amenities, aesthetic features, and safety" (Gelormino et al., 2015, p. 742). In addition to poor physical health outcomes, the authors noted that individuals living in neighbourhoods with poor social cohesion and a lack of perceived safety can experience a negative impact on their mental health (Gelormino et al., 2015, p. 742). This, along with economic outcomes, is what urban renewal projects aim to improve.

Despite the positive health outcomes that can result from urban renewal, there is some evidence to demonstrate that these positive health outcomes will reverse when renewal leads to gentrification (Mehdipanah et al., 2018; Cole et al., 2017). A 2018 review from Mehdipanah et al. sought to evaluate the relationship between gentrification and health outcomes, finding that gentrification can result in

negative mental health outcomes for the original neighbourhood residents. One of the major findings of their review was the impact that gentrification can have on "...psychosocial stress due to severed social networks, instability and loss of attachment to a place, the lost sense of security from having a home, and helplessness from being forced out..." (Mehdipanah et al., 2018, p. 246). Furthermore, the authors reported that residents who are forced to relocate experience negative health outcomes, as they often end up moving to neighbourhoods with food insecurity and limited access to healthcare resources (Mehdipanah et al., 2018, p. 246). While Mehdipanah et al. (2018) did find that relocated residents experienced negative health outcomes, it is unclear if residents who remained in the neighbourhood experienced similar outcomes.

Another recently published paper from Cole et al. (2017) demonstrated that the introduction of green spaces, something which has already been established to provide physical and mental health benefits, can lead to 'green gentrification', whereby the greening itself appears to jumpstart the process of revitalization. On its face, the introduction of parks, community gardens and walkways into an urban neighbourhood should improve population health. However, as these spaces have the potential to gentrify the neighbourhood, Cole et al. suggest that cities need to be aware of the unintended consequences: "...[gentrification will] eventually reduce the positive health impacts of living in proximity to green space, particularly for the more vulnerable residents who are not displaced." (2017, p. 1119).

While the public health evidence in gentrified neighbourhoods is still an emerging area of research, the Mehdipanah et al. (2018) review and Cole et al. (2017) articles present strong arguments linking negative health outcomes in the original residents of the gentrified neighbourhood to the gentrification process. Furthermore, both authors demonstrate how urban renewal projects have the potential to lead to gentrification, even if it wasn't intended.

We have established that there are good reasons for urban renewal initiatives to take place in vulnerable, low-income neighbourhoods. Unfortunately, gentrification is also something that occurs in similar, resource-poor neighbourhoods, that are truly in need of investment. However, it seems that even when urban renewal projects, like urban greening, focus on improving health, they may inadvertently lead to gentrification, thereby producing further health inequities in the population they aimed to help in the first place. It is important to not generalize these

claims, especially given the lack of conclusive evidence. To understand the factors that turn urban renewal into gentrification, more research in communities undergoing revitalization is needed.

Where does this leave us? Do we abandon urban renewal projects altogether or just accept gentrification as a potential outcome? Probably not. Instead, planners and local decision-makers must consider how to pursue urban renewal projects in equitable ways that empower their communities. Mehdipanah et al. suggest that the inclusion of the community's existing residents in the planning process can mitigate the potential for gentrification (2018, p. 246), a concept expressed by some others (Pastor & Morello-Frosch, 2014; CDC, 2013). Could community engagement be a key to non-gentrifying urban renewal? More specifically, could participatory planning provide us with a model for productive, health-promoting engagement practices?

### **The Role of Participatory Engagement in Urban Renewal**

To illustrate the potential effects of participatory planning, I compare two qualitative case studies which looked at the use of participatory planning in two different urban renewal contexts.

The first case comes from a 2006 qualitative study investigating the outcomes of a participatory, community-driven urban renewal program (Semenza et al., 2006). This program saw the renewal of community spaces in three low to medium-income neighbourhoods in Portland, Oregon. The projects intended to improve social capital and mental health in the community, with the aim of "...creating a sense of place by reversing urban blight with artistic features in the public right-of-way." (Semenza et al., 2006, p. 16). The residents themselves decided on, designed and built the urban renewal projects. The researchers used self-reporting to measure the participants' sense of community, social capital and depression (among other indicators), finding that across all three sites, social interaction and social capital increased after the project, while depression in people decreased (Semenza et al., 2006, p. 15). While this study did not evaluate the use of participatory engagement as a way to prevent gentrification, it does demonstrate that participatory urban renewal practices can lead to increased social capital and positive health outcomes.

While Semenza et al. (2018) reported positive experiences with participatory planning, a different 2018 qualitative study from Ellen van Holstein evaluated the experiences of residents

*"Although these participatory programs were rolled out to diminish this sense of isolation, this research shows that they inadvertently strengthened it."*

in a participatory urban renewal project in four Colombian neighbourhoods. These projects included mini-parks and improved walkways. van Holstein reported that while residents welcomed the projects and the opportunity for positive change, they felt increasingly marginalized and frustrated as a result of the engagement process (2018). The residents reported that even though the projects were labelled as participatory, their voices never were heard. For example, when residents shared with planners that the funds would best be spent on other renewal projects, their concerns were ignored (van Holstein, 2018, p. 49). Even though these projects were supposed to increase social cohesion and feelings of inclusion in the community, van Holstein found the opposite to be true: "Although these participatory programs were rolled out to diminish this sense of isolation, this research shows that they inadvertently strengthened it." (2018, p. 52).

SOURCE: iStock



These two case studies demonstrate how participatory engagement can succeed or fail to empower a community in the urban renewal process. Although participatory engagement is a staple in the public health community, the van Holstein et al. (2018) study provides a powerful reminder that to be successful, engagement must be participatory in practice, not just in name.

How do these two accounts of community engagement relate to gentrification? Although some (Mehdipanah et al., 2019; Pastor & Morello-Frosch, 2014; Centres for Disease Control [CDC], 2013) suggest that community engagement could be one way to prevent gentrification, there is little conclusive evidence linking community engagement practices with gentrification prevention. Despite this lack of evidence, it is certainly not an unreasonable claim to make. Strong community engagement practices aim to put the power and decision-making process back in the hands of citizens, while gentrification often removes their sense of control and connection. If community engagement is to be a force against gentrification, the engagement process itself must be health-promoting and empower its participants.

## Challenges

As eluded to above, one of the major challenges in the area of urban renewal, gentrification, health outcomes and community engagement are the gaps in evidence. While Mehdipanah et al. (2018) reported poor health outcomes as a result of gentrifying urban renewal, a recent systematic review was unable to make the same conclusive claims, given the heterogeneity of the evidence (Schnake-Mahl et al., 2020). One of the major challenges in collecting generalizable evidence is that most articles even failed to agree on the same definition of gentrification, making them difficult to compare, never mind the heterogeneity of the results themselves.

## Conclusion

This paper illustrated how urban renewal and gentrification have the potential to impact population health outcomes. While urban renewal projects, like the introduction of green spaces, can promote better physical and mental health, they may inadvertently lead to gentrification, which has an inverse effect on health. Despite the lack of conclusive evidence, it was proposed that participatory community engagement practices could act as an opposing force to gentrification. With continued research, we may one day see a future where the community drives the urban renewal process and is not simply a passive recipient of the good or bad that comes with it.

## REFERENCES

- Centers for Disease Control and Prevention. (2013, August 21). Healthy Places Strategies. [https://www.cdc.gov/healthypaces/healthtopics/gentrification\\_strategies.htm](https://www.cdc.gov/healthypaces/healthtopics/gentrification_strategies.htm)
- Cole, H., Garcia Lamarca, M., Connolly, J., & Anguelovski, I. (2017). Are green cities healthy and equitable? Unpacking the relationship between health, green space and gentrification. *Journal of epidemiology and community health*, 71(11), 1118–1121. <https://doi.org/10.1136/jech-2017-209201>
- Gelormino, E., Melis, G., Marietta, C., & Costa, G. (2015). From built environment to health inequalities: An explanatory framework based on evidence. *Preventive medicine reports*, 2, 737–745. <https://doi.org/10.1016/j.pmedr.2015.08.019>
- Jalaludin, B., Maxwell, M., Saddik, B., Lobb, E., Byun, R., Gutierrez, R., & Paszek, J. (2012). A pre-and-post study of an urban renewal program in a socially disadvantaged neighbourhood in Sydney, Australia. *BMC public health*, 12, 521. <https://doi.org/10.1186/1471-2458-12-521>
- Mehdipanah, R., Marra, G., Melis, G., & Gelormino, E. (2018). Urban renewal, gentrification and health equity: a realist perspective. *European journal of public health*, 28(2), 243–248. <https://doi.org/10.1093/eurpub/ckx202>
- Moses, Vicki-Lynn. (n.d.) Voices from the Streets: Stories of Vulnerable Youth in the Shadow of Urban Development. <https://drive.google.com/file/d/1r4dMdv8SatxGH4pbjemQocyZjAdYcUR/view>
- National Community Reinvestment Coalition. (n.d.) Shifting neighbourhoods: Gentrification and cultural displacement in American cities. Retrieved June 15, 2020. <https://nrcr.org/gentrification/#:~:text=The%20term%20%E2%80%9Cgentrification%E2%80%9D%20was%20first,neighborhoods%20by%20middle%20class%20newcomers>
- Pastor, M., & Morello-Frosch, R. (2014). Integrating public health and community development to tackle neighborhood distress and promote well-being. *Health affairs (Project Hope)*, 33(11), 1890–1896. <https://doi.org/10.1377/hlthaff.2014.0640>
- Rojas-Rueda, D., Nieuwenhuijsen, M. J., Gascon, M., Perez-Leon, D., & Mudu, P. (2019). Green spaces and mortality: a systematic review and meta-analysis of cohort studies. *The Lancet. Planetary health*, 3(11), e469–e477. [https://doi.org/10.1016/S2542-5196\(19\)30215-3](https://doi.org/10.1016/S2542-5196(19)30215-3)
- Schnake-Mahl, A. S., Jahn, J. L., Subramanian, S. V., Waters, M. C., & Arcaya, M. (2020). Gentrification, Neighborhood Change, and Population Health: a Systematic Review. *Journal of urban health: bulletin of the New York Academy of Medicine*, 97(1), 1–25. <https://doi.org/10.1007/s11524-019-00400-1>
- Semenza, J. C., March, T. L., & Bontempo, B. D. (2007). Community-initiated urban development: an ecological intervention. *Journal of urban health: bulletin of the New York Academy of Medicine*, 84(1), 8–20. <https://doi.org/10.1007/s11524-006-9124-8>
- van Holstein, E. (2018). Experiences of Participatory Planning in Contexts of Inequality: A Qualitative Study of Urban Renewal Projects in Colombia. *Planning Theory & Practice*, 19(1), 39–57. <https://doi-org.login.ezproxy.library.ualberta.ca/10.1080/14649357.2017.1406981>
- World Health Organization. (n.d.) Healthy Cities. Retrieved June 15, 2020. <https://www.who.int/healthpromotion/conferences/9gchp/healthy-cities/en/>

My name is **Mara Steiner** and I am entering my second year of a Master of Public Health in Health Policy and Management at the University of Alberta. While my primary areas of interest are in health ethics, policy development and health service delivery, I love exploring new topics in public health. This is what ultimately led me to take two courses focusing on the relationship between health and the built environment, which has now become a new area of interest for me! Upon completing my public health degree, I hope to attend medical school and, in the future, be able to apply my public health background to my practice as a physician.

About the Author

# THANK YOU!



BEYOND SUCCESS  
**2020** GROWTH BY FAILURE  
SEPTEMBER 21 - 23  
VIRTUAL CONFERENCE

Platinum



**BROWNLEE LLP**  
*Barristers & Solicitors*

Gold



CITY OF  
*Lethbridge*



UNIVERSITY OF ALBERTA  
SCHOOL OF URBAN AND  
REGIONAL PLANNING

Silver



STRATHCONA  
COUNTY



Bronze



County of Grande Prairie No. 1  
Alberta, Canada



bunt  
& associates



*Scheffer Andrew Ltd.*  
*Planners & Engineers*



PROFESSIONAL STANDARDS BOARD  
For the Planning Profession in Canada



Thank you to the generous sponsors  
of the 2020 APPI Conference!

Thank you also to the session presenters, organizing committee  
and the 300 delegates who came together virtually to embrace  
a new conference format, with whom we now celebrate success.

Alberta Professional Planners Institute  
PO Box 3099  
Sherwood Park AB T8H 2T1

PUBLICATION AGREEMENT NUMBER 41795020