

# **YOU CAN HAVE YOUR PARK AND EAT IT, TOO**

**Designing a public food forest for a Winnipeg park**

A PRACTICUM IN LANDSCAPE ARCHITECTURE  
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# **YOU CAN HAVE YOUR PARK AND EAT IT, TOO: DESIGNING A PUBLIC FOOD FOREST FOR A WINNIPEG PARK**

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# ABSTRACT

The industrialization and commodification of the food system has brought about unintended environmental, social, and psychological consequences: ecosystems have been degraded, food-related traditions and social ties have been lost, and food illiteracy is on the rise as urbanized society becomes increasingly distanced from the processes of food production. Urban agriculture can address these concerns by providing opportunities to connect communities, promote food literacy, and create a demand for more sustainable food production. Introducing urban agriculture to public parks could diversify park programming and increase public engagement with food production. However, parks can be challenging urban agriculture sites due to their aesthetic standards and open access to the public. Public food forests respond well to these challenges, making them especially well suited to public parks compared to other forms of urban agriculture. Successful implementation of public food forests in parks requires cooperation and partnerships between professional designers, local communities, and government agencies, as well as positive relationships within the food forest community. This practicum demonstrates these ideas through the design of a public food forest in a Winnipeg park, aiming to inspire designers, government bodies, and communities in Winnipeg and beyond to reconceptualize public parks as potential places for sustainable, aesthetically mindful, and socially beneficial food production.



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# DEFINITION OF TERMS

**FOOD SYSTEM:** The networks, activities, infrastructure, processes, and people involved in the life cycle of food from creation to consumption, including stages of growth, harvest, processing, transporting, marketing, consuming, and disposal.

**FOOD SECURITY:** Reliable and sustainable access to sufficient healthy, affordable food to meet a community's nutritional needs. **Food insecurity**, therefore, refers to a lack of access to healthy food due to factors such as cost, distance, famine, or unavailability.

**FOOD JUSTICE:** Food justice is achieved when all people within a community have fair and equal access to nutritious and affordable food. **Food injustice**, therefore, refers to unequal access to food due to factors such as financial status, ethnicity, mobility, or geography.

**FOOD DESERT:** An area in which residents have poor access to nutritious and affordable food.

**FOOD LITERACY:** A basic understanding of how to identify, grow, prepare, and consume healthy food.

**ECO-LITERACY:** A basic understanding of natural systems, including their components, processes, and patterns.

**INDUSTRIAL AGRICULTURE:** An intensive agricultural method characterized by mass production, mechanization, monocultures, and chemical applications. Also referred to as **conventional agriculture**.

**URBAN AGRICULTURE:** The practice of producing food in urban areas.

**FOOD COMMONS:** **Commons** refers to resources that are openly shared by one or more communities, such as fresh air, insect pollinators, or a body of water. A **food commons**, therefore, refers to a shared food resource, such as an apple tree in a public park.

**PERMACULTURE:** An alternative method of food production that mimics the patterns and processes of natural ecosystems.

**FOOD FOREST:** A perennial, permacultural garden modeled after a young forest ecosystem that provides humans with food while also benefiting non-human organisms and the natural environment.

**PUBLIC FOOD FOREST:** A food forest that is shared and maintained by a community as a food commons. Also referred to as a **community food forest**.



## 01

## INTRODUCTION

**“How and what we eat determines to a great extent the use we make of the world - and what is to become of it.”**

– Michael Pollan (2006)

## 1.1 PERSONAL INTEREST

My memories of childhood are filled with farming and food. I grew up on a small acreage north of Winnipeg, where my family operated an organic U-Pick vegetable business. My grandfather had started the operation in the 1970s due to concerns about the health and environmental effects of conventional agriculture. People came to our garden for many reasons – to enhance their health by eating chemical-free vegetables, to support a cause they believed in, to feel more connected to their food, to teach their kids where food comes from, to enjoy the quiet countryside, or just to save money through sweat labour and buying in bulk.

I have many fond memories of picking fresh fruits and vegetables at our farm. Even if I refused to eat the carrots my mom cooked for supper, I would always proudly devour the partially-soil-covered carrots I pulled out of the ground myself. My love for collecting food continued into adulthood: when I worked at a tall grass prairie preserve, I often organized my route through the prairie based on the location of wild raspberries to snack on along the way,

and at my current workplace, I frequently check the saskatoon bushes that hide within the spruce forest adjacent to the office. To me, nothing compares to the satisfaction of eating fresh berries right off the bush – an experience I believe everyone should have the opportunity to try.

As I began my career in landscape architecture, I often found myself designing public greenspaces such as parks, schoolyards, and streetscapes – but the designs rarely included edible plants. Edible plants have a reputation for being unattractive, high-maintenance, or unnecessary. And yet, as I reflected on the joys of harvesting fruits and vegetables as a child, I couldn't help but wonder whether an opportunity was being missed by neglecting edible plants in public greenspaces. What if public greenspaces gave people the chance to develop a personal connection to the food they ate? Can public greenspaces be beautiful *and* productive? What if food were a public resource, similar to public education or healthcare? How can landscape architects contribute to urban food production?

This practicum is my exploration of those questions. Through my research, I learned how important urban agriculture can be for individual and social wellbeing, and I analyzed different methods and practices to determine which forms of urban agriculture are best suited to public parks. My research led me to design a public food forest in a city park in Winnipeg. The design is supported by lessons learned through three descriptive case studies, key insights on community

relationships and best management approaches, a contextual mapping analysis of Winnipeg, a detailed site analysis, and long-term strategies for construction phasing and community engagement.

I believe that a well-designed public food forest can serve as a transformative demonstration site, showcasing the immense potential for future parks to be places that not only provide recreational opportunities, but that also feed our citizens, support our ecosystems, bring our communities together around a common purpose, and empower people to build a more just and sustainable food system. My hope is that this practicum will provide the evidence, reasoning, and inspiration to convince designers, government agencies, and communities to also believe this – and to act on it.



Fig. 1.1.1 Myself and my brother at my family's organic vegetable farm, circa 2012.





Fig. 2.1.1 Canola field in rural Manitoba. (Credit: Mike Swim)

# 02 OUT OF SIGHT, OUT OF MIND: A DISTANT FOOD SYSTEM

**“Food shapes cities, and through them, it moulds us – along with the countryside that feeds us.”**

– Carolyn Steel, cited in Gorgolewski, Komisar, and Nasr (2011, p. 17)

## 2.1 INTRODUCTION

For many Canadians, a drive through the countryside entails an encounter with agriculture. Whether the lemon-yellow blooms of canola fields, the geometric rows of corn, or the whispering waves of wheat fields, food production has an iconic presence in rural landscapes. Back in the city, however, agriculture is largely absent: other than a few small vegetable gardens scattered among backyards or the odd community garden, the urban landscape is dominated by lawns, ornamental flower beds, and rows of street trees. In the city, urbanites acquire food not by harvesting it from the land, but by purchasing it from the grocery store – pre-washed, pre-packaged, and often processed into a product that looks nothing like its original form.

While this contrasting experience of food in urban and rural contexts may feel like the norm, it is actually a relatively recent phenomenon. For centuries, food production was not solely a rural phenomenon; food was commonly produced in cities as well. However, beginning in the mid-nineteenth century, cultural forces, technological advances, and economic

developments began to separate food production from urban settings, which has led to many environmental, social, and psychological issues. This chapter provides an overview of the major changes and developments in the food system and the resulting repercussions.

## 2.2 THE EVOLUTION OF THE FOOD SYSTEM

The invention of agriculture around 11,000 years ago transformed human civilizations (Standage, 2009). By establishing a food source that was more reliable and controllable than hunting and gathering, agriculture – the selection and cultivation of plants for human use – allowed humans to stay in one place, paving the way for the modern world (2009). Agriculture enabled the development of civilizations, cities, and political institutions, and it led to population growth and general prosperity (Olsson et al, 2019). In many civilizations, agricultural plots were interspersed within the developed area, and early cities often protected agricultural lands within their walls (Viljoen, Bohn, and Howe, 2005). The lack of transportation and food preservation technology limited the distance between producer and consumer, so more by necessity than by choice, most civilizations were self-sufficient in food production through a mix of urban and local rural agriculture (2005).

For thousands of years, agriculture met civilizations’ nutritional needs while also serving cultural and

social purposes. Culturally, food contributed to the development of customs and practices, cuisines, and ways of life. Socially, food production was often done as a communal activity, promoting social ties and a sense of belonging. According to Vivero-Pol et al, for most of history, throughout the world, food was “cultivated in common and considered a mythological or sacred item; it was allocated according to need, rather than on the basis of the ability to pay” (2019, p. 4). Food commons – communally managed and shared food resources – coexisted alongside more capitalistic or trade-based operations, contributing to a diverse food system that ultimately served to meet the needs of the community. Food commons were a staple for food production in civilizations around the world, as seen in historic records from the early Babylonian Empire, ancient India, the Roman Empire, medieval Europe, and early modern Japan (Vivero-Pol et al, 2019).

The practice of producing food in common spaces began to fade, however, as ideas of property ownership, individualism, and capitalism took root in the Western world (Vivero-Pol et al, 2019). Beginning in the 13th century, England’s enclosure movement divided what was once common land into private properties, thereby preventing the practice of common grazing that had existed for centuries (Dyer, 2006). By the mid-19th century, with the onset of the Industrial Revolution, the rest of Europe had also adopted the principles and practices of the enclosure movement, resulting in the privatization of many common lands (Ricoverti and Shiva, 2013).

The Industrial Revolution – or the shift from an agrarian and handcrafting economy to a focus on manufacturing, mass production, and mechanization – physically and conceptually changed humanity’s relationship with food. As scientific advances began to push the Western world towards an industrialized food system, food and land were increasingly conceived as commodities that primarily served to make a profit, obscuring their non-economic, cultural, and social dimensions (Vivero-Pol et al, 2019). Physically, as factories were built and urbanization progressed at unprecedented rates, cities intensified their development inwards, which then pushed agriculture out into the rural landscape (Viljoen, Bohn, and Howe, 2005). The cities, deprived of their local food sources and no longer self-sufficient, built new systems –

such as steam trains and rail networks – to support their citizens by shipping and importing food from increasingly distant and rural lands.

The same scientific advances that enabled the Industrial Revolution’s shift towards mass production and mechanization also led to changes in agriculture. During the late nineteenth and early twentieth centuries, agriculture became a scientific endeavour, focusing on technology and methods that would render it more controllable and productive (Clapp, 2015). Plows and hand tools were exchanged for fuel-powered tractors, which could manage much larger areas of land than ever before, allowing for further expansion of agricultural lands. Chemical applications, such as artificial fertilizers and pesticides, were explored.

As agriculture continued to expand into rural areas and European cities became increasingly crowded, polluted, and poverty-stricken, many people immigrated to Canada in pursuit of a better life, and thus the individualistic mindset of privatization and property ownership, as well as industrialized agriculture, spread to North America. The understanding of land and food as commodities to control and exploit was completely foreign to Indigenous peoples, who had cooperatively and sustainably managed their common lands for centuries (Bukowski and Munsell, 2018). Land was unjustly taken from Indigenous groups and was tilled, drained, and deforested by settlers, transforming Canada’s mosaic of prairies, wetlands, and forests into a grid of privately owned farms.

As North American cities continued to outsource their food needs to rural farms, urban food production was reduced a small-scale, subsistence activity limited to small vegetable gardens at private home properties. However, urban food production did experience a brief resurrection during the world wars, as food shortages and economic frugality demanded a more local and cost-efficient food system. Through the creation of “Liberty Gardens” in WWI and “Victory Gardens” in WWII, plots of urban land – in any available space, from yards to parks – were transformed into food production sites that were maintained communally by citizens (McClintock, 2010). By 1944, an estimated 209,200 Victory Gardens were in operation in Canada, producing around 57,000 tonnes of vegetables annually (Levenston, 2016). In the US, Victory gardens



Fig. 2.2.1 Girl Scouts learn how to transplant vegetables at an urban Victory Garden in San Francisco, 1943. (Credit: U.S. National Archives and Records Administration)

produced around 40% of the nation's vegetables during the war (McClintock, 2010). Once the war ended, however, urban agriculture dissipated once again, resuming its position as a rural activity – but this time, it was transformed into something more industrialized and commodified than ever before (Gorgolewski, Komisar, and Nasr, 2011).

The post-war food system experienced massive shifts of intensification and globalization (Clapp, 2015). With goals of increasing yields, improving food security, lowering food prices, and reducing hunger, rural agriculture was further intensified through scientific advances and technological improvements. Small, diverse farms transformed into massive monocultures of genetically identical crops such as corn, wheat, or soy, efficiently managed by large machines and chemical inputs. Mass production of artificial fertilizers spurred rapid crop growth; automated irrigation systems ensured sufficient watering; and pesticides, herbicides, and insecticides, such as DDT

and neonicotinoids, prevented weeds and pests from affecting yields. During the 1960s and 1970s, as economies became increasingly globalized, agriculture entered the global trade market, enabling different regions to specialize in certain types of production and eliminate perceived inefficiencies, further promoting monoculturation and industrialized methods (2015). Advances in agricultural science and globalization enabled the Green Revolution of the 1960s, wherein improved crop varieties and industrial methods were spread to new parts of the world, increasing yields and decreasing widespread hunger. During the 1980s and 1990s, transnational corporations became involved, developing into powerful agencies with increasing control over the food system through market-based mechanisms. The food system became more complex, consisting of a long and complicated process of product development, patenting, production, processing, shipping, packaging, and distribution to markets (2015).

These changes to the food system were also reflected in cities. After the Second World War, supermarkets became dominant fixtures in urban areas, providing a convenient way to acquire food that was pre-washed, pre-packaged, and often processed into new and unrecognizable forms (Nordahl, 2014). Through supermarkets, agribusinesses and commercial corporations could control where, how, and at what price food was sold. In the expanding residential suburbs, home properties trended towards larger houses on smaller lots, offering less room for vegetable gardens (Creasy, 2010). With more women entering the work force, fewer families had time for gardening and increasingly relied on supermarkets and convenience meals (2010). The busy lifestyle of urbanites was reflected in the suburban landscaping standard: ornamental foundation plantings and a monoculture of lawn grass, which required little time and effort to maintain through the power of gas-fueled lawnmowers, irrigation systems, and chemical applications (2010). Further solidifying residents' dependence on supermarkets, many cities developed zoning bylaws and ordinances that limited or forbid urban food production – many of which are still in

place to this day (Gorgolewski, Komisar, and Nasr, 2011).

From the Industrial Revolution to the post-war era to today, our world has come to depend on an industrialized, commodified, globalized, and rural food system largely governed by global trade markets, agribusinesses, and large corporations. Though this food system provides cities with affordable and convenient food, it has also come with great environmental, social, and psychological costs.

## 2.3 ENVIRONMENTAL CONSEQUENCES

The separation of cities from their food sources is one of the most profound impacts of the global industrial food system, leading to issues on a variety of levels. Marx's theory of the "metabolic rift," developed during the Industrial Revolution, offers a lens for understanding the problematic relationship between cities and their distant food sources (McClintock, 2010). Drawing on the idea of metabolism or energy



Fig. 2.2.2 American grocery store selling conveniently pre-cut chicken in 1960. (Credit: Library of Virginia)

cycles – wherein living organisms consume food and emit waste, which is then recycled to support new life – Marx observed that the rural nutrients used to produce food were exported to cities only to be wasted in disease-spreading sewers, rather than being recycled as fertilizer to produce new crops (2010). He described this process as a rift in the “metabolic cycle” of the city, warning of its inevitable consequences for soil health – which were unfortunately realized. The soil fertility crisis in nineteenth-century Europe and North America resulted in a scramble for new sources, leading to soil extraction in South America and the development of the artificial fertilizer industry – thereby geographically displacing the ecological issues caused by the “rift” to other regions and creating a snowballing cycle of new rifts (2010).

In addition to its disruptions to the energy cycle, the global industrial food system has contributed to many other environmental issues. The nine “planetary boundaries,” originally developed by Rockstrom et al (2009), quantify the limits for the “safe operating space” of major processes on Earth; crossing these limits is predicted to have catastrophic effects for all life on Earth, including humans (Campbell et al, 2017). Campbell et al (2017) found that agriculture is responsible for pushing the limits of all nine of these planetary boundaries, especially land-system change, freshwater use, biogeochemical flows (specifically nitrogen and phosphorus cycles), biosphere integrity (i.e. functional and biological diversity), and climate change. The IPCC Report confirms this, declaring agriculture to be a major driver of land degradation and climate change (Olsson et al, 2019). In unfortunate irony, while industrial food production is one of the greatest contributors to environmental problems, it also relies on the continuous functioning of those same environmental systems and processes – thereby contributing to its own demise (Willett et al, 2019).

Agricultural land is created by clearing and converting natural ecosystems, leading to a myriad of other problems. Agricultural activity has converted about 40% of all ice-free terrestrial land into croplands and pastures, making agriculture the largest biome on Earth (Campbell et al, 2017) – and it is expanding every year to feed a growing global population, expected to reach between 8.5 and 10 billion by 2050 (Willett et al, 2019). Agriculture’s impact on ecosystems is profound: 80% of all deforestation is

caused by land clearing for agricultural expansion (Campbell et al, 2017); about 55% of all wetlands have been drained since 1900 (Olsson et al, 2019); and more grasslands have been lost than any other biome (2019). The loss of natural ecosystems has reduced biodiversity and perpetuated the planet’s sixth mass extinction, with extinction rates 100 to 1000 times faster than in previous extinction events (Willett et al, 2019). When ecosystems are cleared, carbon sequestered in the soil and stored in plant matter is released into the atmosphere, contributing to climate change (Olsson et al, 2019). In summary, agricultural expansion drives habitat loss, biodiversity loss, and climate change.

Agriculture’s use of resources has also created issues. Freshwater, for instance, comprises only 0.003% of the water on earth, and yet over 70% of freshwater withdrawals are used for agriculture (Campbell et al, 2017) – and a large amount of that water is lost due to evaporation off the bare, exposed soil between rows, which lacks the shade of vegetation to hold in humidity (Food and Agriculture Organization of the United Nations, 2017). Through its excessive use of artificial fertilizers, agriculture has significantly altered the nitrogen and phosphorus cycles, leading to the pollution of air, soil, and water (Campbell et al, 2017). Agricultural use of nitrogen increased by over 800% between 1960 and 2000; however, only about half of the nitrogen applied to crops is actually absorbed by plants, with the rest lost through soil erosion, gaseous emission, and leaching into the water system – leading to eutrophic algae blooms and oxygen-deprived “dead zones” in aquatic ecosystems (2017). The toxic pesticides used to keep fields weed- and pest-free harm and kill insects, animals, and microorganisms, disrupting complex ecosystem food chains and threatening the pollinators on which agriculture depends (Olsson, 2019; Hladik et al, 2016). Residual pesticides on industrially-produced food can also harm human health (Nicolopoulou-Stamati et al, 2016). The global industrial food system is heavily reliant on fossil fuels for powering machinery, fertilizer production, packaging, and shipping. The concept of “food miles” describes the distance food travels from origin to plate – and in Canada, the average meal travels 3,000 kilometres before being eaten (Caritas Canada, 2017). With climate change on the rise, this dependency on fossil fuels – a non-renewable resource and source of greenhouse gases – is an



Fig. 2.3.1 Spraying pesticides and insecticides at an industrial farm in Utah. (Credit: Aqua Mechanical)



Fig. 2.3.2 Depleted soil at an industrial agriculture site in California. (Credit: Lorena)

unsustainable model.

If agriculture poses such a serious environmental threat to the planet, ecosystems, and itself, why do these harmful and unsustainable practices continue? Clapp (2015) uses the concept of “distance” to describe the dynamics of a system where food is separated from the landscape on which it was produced – either geographically (far away or “out of sight”) or mentally (through complex/unknown processes or “out of mind”). In such a system, feedback loops that would normally create pressure for more sustainable methods are weakened because the negative effects of bad practices are not necessarily felt directly by those performing the bad practices. This makes it difficult to identify the precise causes and effects of problems, pinpoint responsibility on a certain actor, and target efforts for change. As a result, even though the problems associated with the global industrial food system are well known, there has been relatively little change in practices. The concept of distance also relates to the theory of metabolic rift, where the effects of ecological rifts are often geographically displaced (McClintock, 2010).

In summary, the processes of industrialization, urbanization, intensification, and globalization that led to the separation of city from country and producer from consumer have enabled the perpetuation of an unsustainable and environmentally harmful food system.

## 2.4 SOCIAL CONSEQUENCES

In addition to the environmental issues associated with the global industrial food system, there are also social consequences. McClintock (2010) expands on the theory of metabolic rift, describing the rift between city and country as not only a biophysical process, but also as a process of alienation from the land at social and individual levels.

The “social rift” was initiated by the commodification of land and food (2010). The dispossession of common lands forced farmers and herders to urbanize, separating them from their traditional livelihood, ways of life, and social connections. In North America, this separation was felt deeply by Indigenous peoples, as described by writer Robin Wall Kimmerer (2013), a member of the Citizen Potawatomi Nation:

In the settler mind, land was property, real estate, capital, or natural resources. But to our people, it was everything: identity, the connection to our ancestors, the home of our nonhuman kinfolk, our pharmacy, our library, the source of all that sustained us. Our lands were where our responsibility to the world was enacted, sacred ground.

As agriculture continued to industrialize, human labour was replaced with a new commodity – fuel-powered machines – that were capable of much more work, further reducing the need for farmers and further driving urbanization (McClintock, 2010). This “social dislocation” of farmers led to poverty, loss of morale, and unrest during the Industrial Revolution (2010). During the intensified commodification of the nineteenth century where everything from seeds, water, soil, packaging, and knowledge became proprietary, the “culture and traditions surrounding food consumption and production [were] gradually obscured by the market-based ideology of cheap food” (2010, p. 200). The convenience of commodified food came at the expense of cultural and social connections.

The social rift also perpetuates environmental problems. Land that is treated purely as a commodity for capitalistic gain tends to become over-exploited with little regard for its long-term viability (McClintock, 2010). Demonstrating this tendency, many of the resources – bison, salmon, forests, grasslands – that were sustainably managed by Indigenous groups for thousands of years through a culture of respect, reciprocity, and interdependency (Martens, 2018) were quickly exploited by European settlers who did not understand or participate in the social structures that protected those resources. Without the socio-cultural ties to the land that preserve its non-economic values, the fate of the land trends toward exploitation and degradation.

## 2.5 INDIVIDUAL CONSEQUENCES

A food system that is largely removed from the everyday lives of urbanites also has negative repercussions for individuals. This is highly relevant for Canada, where over 80% of the population lives in cities (Plecher, 2020). When our food “comes from places we don’t know and is distributed through

complex systems we don't recognize," a psychological disconnect is created. This disconnect has led to a decrease in food literacy (an understanding of how to identify, prepare, and consume healthy food) and eco-literacy (an understanding of natural systems) in recent decades (Reid and Besanger, 2018 p. 165; Remiarz, 2017).

The widespread decrease in food- and eco-literacy is concerning. One study showed that kids can recognize over 1,000 corporate logos, but they couldn't identify more than 10 plants or animals native to their area (Artmitage, 2010). A lack of direct connection with nature has been shown to impact children's cognitive, affective, and evaluative development, which can lead to mental fatigue, criminal behaviour, and other behavioural issues associated with "nature deficit disorder" (McClintock, 2010; Louv, 2008). In terms of food literacy, a 2016 study showed that 25% of children surveyed did not know that apples grow on trees or that potatoes grow underground (Medibank, 2016). When food illiteracy carries into adulthood, individuals' capacity to make healthy and sustainable food choices can be limited or impaired. A 2015 study

showed that Canadian young adults transitioning to independent living lacked the food literacy necessary to make healthy food decisions on their own (Colatruglio, 2015). The reduction of food literacy is connected to the climbing rates of obesity and diet-related diseases (Willett et al, 2019). Today, unhealthy diets pose a greater risk to mortality than drugs, tobacco, unsafe sex, and alcohol combined (2019).

Clapp's (2015) concept of "distance" can help to explain the decrease in food literacy and eco-literacy. When separated from the processes of food production, consumers can become "distanced" from basic agricultural knowledge and skills, such as the rhythms of growing cycles and seasons, how to grow and care for edible plants, or how to harvest and cook what is grown – in other words, basic food literacy (2015). Highly processed or packaged foods can create an additional level of cognitive distance by transforming a simple food item into something new and unrecognizable, limiting consumers' ability to evaluate the product's healthfulness.

The individual effects of the global industrial food system can also be understood through the lens of the

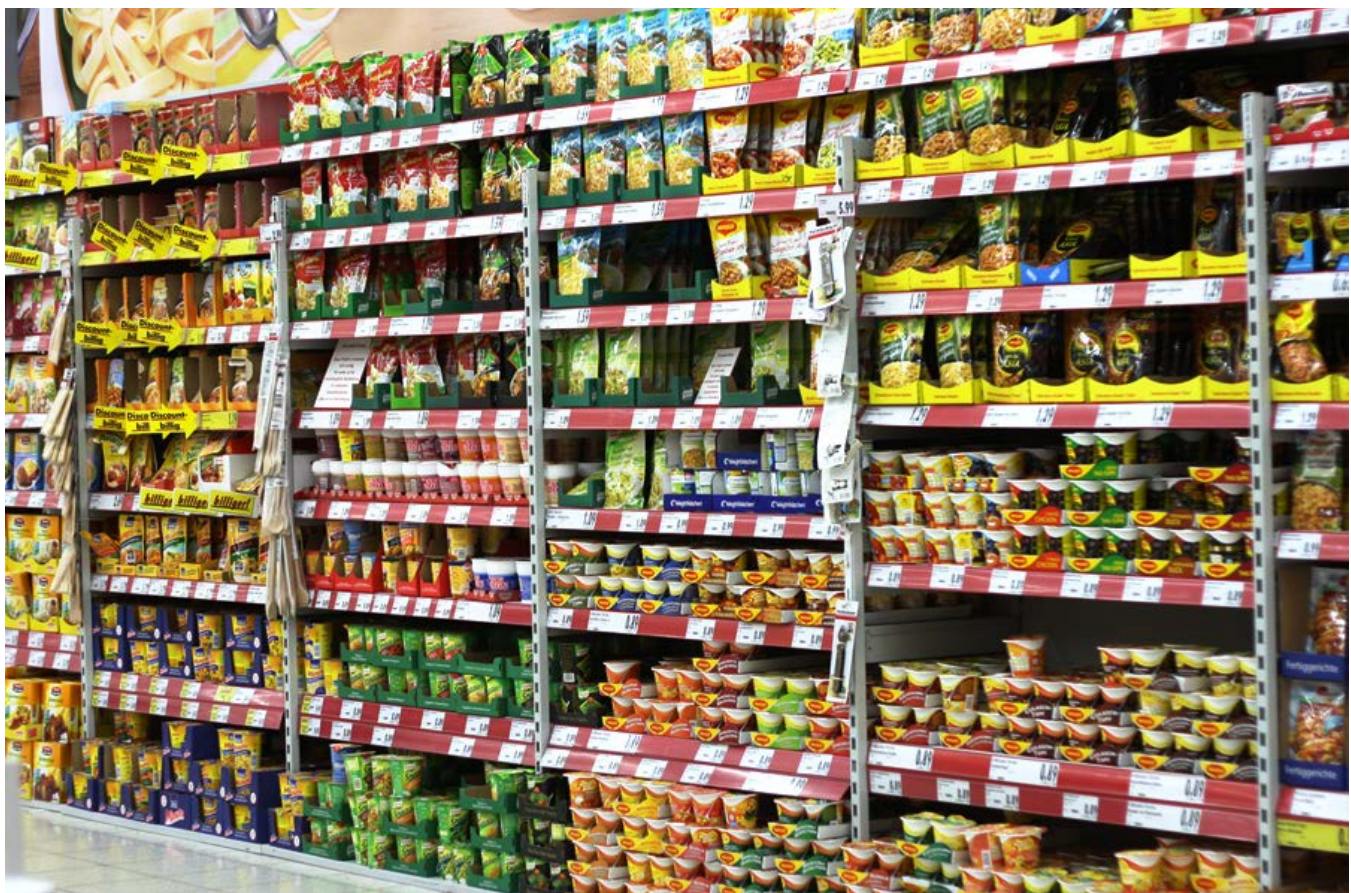


Fig. 2.5.1 Pre-packaged convenience food at a grocery store increases the "distance" between producer and consumer (Credit: Mapped-CN)

metabolic rift. McClintock's (2010) third use of the metabolic rift addresses the cognitive or "individual rift" that occurs when individuals become personally alienated from nature and from labour. As more people move to cities, they become alienated from nature (i.e. natural ecosystems and agriculture), leading to the perception that they are no longer connected to these landscapes (2010). In reality, of course, cities are entirely dependent on the products of rural agriculture and the ecological services of natural ecosystems. This perception of separateness is exacerbated by the alienation from labour. Since the Industrial Revolution, an increasing emphasis on intellectual labour over manual labour has disconnected many workers from the "fruits of their labour." Today, the output of many people's work is not a finished product that they own or use for their own purposes, but rather an intangible commodity used to support a larger capitalistic system (2010). For example, while a retail worker may sell many products, they do not personally experience the "fruits" of their labour other than through regular paychecks (an abstracted commodity), which are then exchanged to purchase food. The individual's energy input (food) and output (labour) – or their "metabolism" – are part of entirely different processes, resulting in the perception that one is external to the natural environment in which food production occurs (2010). Together, alienation from labour and from nature leads to "a loss of recognition of human dependence on the land and nature, and with it the capacity to imagine possibilities for building sustainable food systems" (Bowness and Wittman, 2020).

In summary, the separation of urban consumers from rural producers leads to a cognitive disconnect that leaves consumers unaware of their dependency on the land, unfamiliar with the processes of food production, and less able to make healthy and sustainable food choices.

## 2.6 CONCLUSION

The global industrial food system has obscured and severed the connections between food production and consumption, leading to negative effects on the environment, social wellbeing, and the physical and mental wellbeing of individuals. This can be illustrated through the concept of "distance" and the three dimensions of the metabolic rift. To reduce the environmental problems associated with this food system, the "ecological rift" must be closed by re-integrating cities with a more cyclical, regenerative food system, and the "distance" that enables bad environmental practices must be lessened by exposing and increasing the visibility of food production. To close the social rift, opportunities to interact with the food system in non-commodified, culturally significant, and socially connected ways must be emphasized. To mitigate the harmful effects of food- and eco-illiteracy, the geographical and cognitive "distance" separating consumers and producers must be reduced through education and exposure, and the "individual rift" caused by alienation from nature and labour must be mended through personal engagement in food production. Essentially, food production, communities, and consumers must be reconnected.



**Fig. 3.1.1 Gardening together at Beacon Food Forest. (Credit: Jonathan H. Lee / Subtledream)**

# 03 URBAN AGRICULTURE: A MEANS OF RECONNECTION

**“We are not only what we eat, but how we eat, too.”**

– Michael Pollan (2006)

## 3.1 INTRODUCTION

Urban agriculture (UA) is simply agriculture within an urban context. It occurs in many different forms, such as community gardens, food forests, edible street planters, market-oriented urban farms, rooftop gardens, and backyard vegetable gardens. Though urban agriculture generally occurs at a smaller scale than rural agriculture, the basic processes are the same – planting seeds, tending to plants, and harvesting the produce. In response to the issues discussed in the previous chapter, this chapter provides an overview of the environmental, social, and individual benefits of UA, as well as its history and limitations.

## 3.2 HISTORY

As discussed in the previous chapter, UA was common practice until the rapid urbanization of the Industrial Revolution, which pushed food production to rural and distant lands and led to crowded and polluted cities. The idea of formally reintroducing food production to cities has its origins in the Garden City

movement. At the end of the nineteenth century in crowded, polluted England, urban planner Ebenezer Howard sought to integrate the positive aspects of rural life – food production, fresh air, open space, and quiet – into the aesthetic of city life, creating self-sufficient, breathable “Garden Cities” where citizens could enjoy the best aspects of urban and rural living (Livesey, 2011). Several towns were created under the Garden City model, such as Letchworth in England and Greenbelt, Maryland in the US (2011). Unfortunately, these towns tended to prioritize ornamental gardens over productive ones, and Howard’s original intentions of food self-sufficiency were largely unrealized (2011).

The concept of Continuous Productive Urban Landscapes, or CPULs, is a contemporary reworking of the Garden City movement, but it is motivated more by food security than by urban crowdedness and pollution. Concerns over the availability of arable land, loss of biodiversity, habitat destruction, shortages of water and fossil fuels, and a lost social connection to the land motivated architects Andre Viljoen and Katrin Bohn to envision an urban landscape of CPULs where food production is completely integrated into the urban fabric (2005). In this ideal world, balconies and street planters grow a portion of the city’s food, restaurants harvest their vegetables from a few blocks away, and parks become places to snack (2005). An excellent example of a CPUL is Havana, Cuba, where urban agriculture fills parks, streets, abandoned lots, urban farms, and home gardens (Bohn and Viljoen, 2014). In 2012, Cuba produced 70% of its fruits and

vegetables locally (Leitgeb, Schneider, and Vogl, 2016), and many of these urban production sites are still in operation today (Gorna and Gorny, 2020). Although Cuba's localized food system was born out of necessity due to the collapse of the Soviet Union and increased American trade embargoes, it nonetheless demonstrates the vast potential for UA (2020).

Ten years after developing the CPUL concept, Viljoen and Bohn observed that UA had begun to transform "from a theoretical concept with occasional, exceptional, experimental manifestations to a common phenomenon" (2014, p. 26). Canada's International Development Research Centre (IDRC) played a key role in this through its extensive study *Cities Feeding People* (1996-2005), which "provide[d] the hard facts needed to convince governments that urban agriculture should have a larger role in feeding the urban population" (International Development Research Centre, n.d.). In Canada, numerous UA initiatives have emerged over the last two decades. Quebec City's parliament building boasts a large potager or ornamental vegetable garden; a food bank

in Saskatoon operates through a community garden model; a rooftop at Toronto's Ryerson University has been transformed into an edible garden; the rooftops of Fairmont Hotels throughout Canada are used to produce food for the hotel restaurants; chickens can legally be kept in residential yards in Vancouver, Victoria, Kelowna, Surrey, Montreal, Gatineau, Moncton, and Whitehorse; and Inuvik, Nunavut, has created "the most northerly greenhouse in North America" (Levenston, 2016). Community gardens are likely the most popular and ubiquitous forms of UA, appearing in the majority of Canadian cities.

### 3.3 ENVIRONMENTAL BENEFITS

Urban agriculture is an environmentally beneficial practice. By using already-transformed urban land, UA can somewhat reduce the need for agricultural expansion into natural ecosystems, thereby preserving biodiversity and ecosystem health. Studies have shown that UA increases the environmental sustainability of cities by increasing urban biodiversity, reducing urban heat island effect, acting as a carbon sink, and diverting wastewater through soil and plant absorption (Valley and Wittman, 2019).

UA can also help to close some ecological rifts (McClintock, 2010). By producing food locally, UA can help to reduce a city's dependency on imported fossil fuels, thereby improving energy cycles, promoting shorter supply chains, and reducing "food miles" (2010). By using environmentally friendly practices such as organic gardening and permaculture, which emphasize nutrient-cycling methods such as composting and cover cropping, UA can help to rescale and restore a city's nutrient cycle (2010). However, it should be noted that the nutrient loop cannot be completely closed unless human waste is incorporated into the system (2010).

Since food grown in cities is highly visible, UA reduces the "distance" that enables poor environmental practices to continue unnoticed, thereby strengthening the feedback loops that promote responsibility and stewardship (Clapp, 2015). While UA does not decrease the geographical distance between consumers and rural/global producers, it can reduce cognitive distance by increasing general awareness of global food production practices. UA



Fig. 3.2.1 Potager at Quebec Parliament Building. (Credit: Eduardo Fonseca Arraes)

can open up conversations about the “differences between conventional and ecologically-grown foods [and] the role healthy ecosystems play in growing food,” potentially increasing consumers’ sense of responsibility and encouraging more intentional purchasing decisions (Bowness and Wittman, 2020, p.10). For example, after learning about sustainable food production through UA, a gardener may decide to purchase CSA boxes from a local farm that engages in regenerative practices, or they may purchase organic vegetables from the grocery store. In this respect, UA participants can indirectly promote better global food practices by creating a demand for more sustainably produced food.

### 3.4 SOCIAL BENEFITS

UA can strengthen social and cultural ties, thereby addressing the “social rift” associated with the dispossession of land and the commodification of food. Studies have shown that community-based UA can promote social connections, strengthen a sense of community, and increase social wellbeing (McClintock, 2010; Valley and Wittman, 2019). Traditional and cultural food-related knowledge and practices can be sustained and shared through UA, as they are often places of “interaction between various age groups and ethnic groups, where knowledge about food production and preparation is shared and community ties strengthened” (McClintock, 2010, p. 200). UA can also somewhat prevent further enclosure of land by physically occupying space, although securing long-term access to land can be a challenging task for many UA projects (Bowness and Wittman, 2020).

UA can also help to mend the social rifts caused by the commodification of the food system (McClintock, 2010). Since the rise of capitalistic agriculture, subsistence UA has served as a social safety net by creating an alternative, non-commodified food system based on basic human needs rather than the ability to pay. This is particularly evident during times of crisis. During the Industrial Revolution, in response to rising concerns over the reliability of the new industrialized food system to feed growing cities, subsistence UA arose as a “protective counter-movement,” reassuring anxious urbanites that they could still access locally grown food despite rural soil crises or price fluctuations (2010). During

the world wars, local Liberty Gardens and Victory Gardens ensured that citizens would be fed despite any unforeseen disruptions to the larger food system. During the recession of 2008, economic uncertainty and heightened food costs led to a proliferation of UA initiatives (McClintock, 2010; Bukowski and Munsell, 2018). Today, UA can still act as a social safety net by affording all urban residents the opportunity to grow fresh, healthy food regardless of their financial situation or whether they own land (McClintock, 2010). Many UA efforts also promote food justice, ensuring that everyone in the community has equal access to healthy food (Bowness and Wittman, 2020).

### 3.5 INDIVIDUAL BENEFITS

UA is highly effective for increasing food literacy, leading to numerous benefits for individuals. UA promotes hands-on education and interaction by providing “a direct and tangible means to learn about and participate in farming production, distribution, and consumption practices” (Valley and Wittman, 2019, p. 41). As food literacy increases, cognitive “distance” is reduced, empowering consumers through food-based knowledge and skills (Clapp, 2015).

Food literacy enables consumers to take control of their consumption and make informed food decisions, leading to positive health outcomes. Studies have shown that UA can improve health by increasing fruit and vegetable consumption, which is critical for a healthy diet (McClintock, 2010; Valley and Wittman, 2019; Willett et al, 2019). Increased consumption of locally and sustainably produced fruit and vegetables can also promote a more sustainable, plant-based diet, which is environmentally beneficial (Springmann et al, 2018; Willett et al, 2019). UA has shown to benefit physical health through exercise (Valley and Wittman, 2019). UA can also improve mental health and create a sense of purpose. For instance, many immigrants to North America engage in UA to alleviate boredom and to feel useful and empowered in a new country where they might otherwise feel powerless and dependent (McClintock, 2010).

UA is highly effective for closing the individual rift caused by alienation from labour and the land. McClintock (2010) explains that “by physically labouring the soil, sowing seeds, cultivating,



Fig. 3.5.1 Children gaining food literacy at The People's Garden in Washington, DC. (Credit: Campus Kitchens)

harvesting, and preparing food, UA mends the individual rift by reengaging individuals with their own metabolism of the natural environment” (p. 202). By “metabolizing” the landscape and literally experiencing the fruits of their labour, consumers can form personal connections to the land, leading to a renewed recognition of human dependency on the land and natural systems. Bowness and Wittman (2020) confirm this, stating that engagement with UA can lead to “a sense of appreciation of nature, land, and food that is otherwise inaccessible to urban residents” (p. 10). McClintock (2010) argues that the desire for a sense of personal connection to food lies at the heart of the UA movement in the Global North, which has been disconnected from its agrarian roots for much longer than elsewhere in the world.

### 3.6 CHALLENGES AND LIMITATIONS

While UA has many environmental, social, and individual benefits, it also has a number of challenges and limitations. First, UA has limited capacity for increasing food security, mainly due the limited availability of urban land relative to the size of urban populations (Bowness and Wittman, 2020; Valley and Wittman, 2019). CPUL advocates Viljoen and Bohn acknowledge this limitation, stating that “it is neither desirable nor optimal to feed a city solely through urban agriculture,” and that “coordinated and well-managed interrelationships between urban, rural and international agriculture can lead to an environmentally optimal and equitable urban food system” (2014, p. 7). By creating a supplemental, alternative food network that complements rural and international production, UA can help to build a more

diversified urban food system, but overall, it has a minimal effect on food security.

The limited availability of urban land also calls into question whether UA is an effective use of that limited space, given that densified urban developments, such as high-density housing, could prevent urban sprawl from spreading into rural areas where the majority of food is produced, thereby protecting existing sources of food security (Valley and Wittman, 2019). Moreover, limited urban land is typically expensive to acquire, making food produced in market-oriented urban farms more expensive than conventional food (2019). This goes against the goals of equity and social inclusion purported by many UA advocates (2019).

While UA typically uses sustainable methods, its overall environmental impact is minimal (Valley and Wittman, 2019), and it is limited in its capacity to address the large-scale environmental problems associated with the global industrial food system. While UA can encourage participants to make more sustainable food purchases, ultimately, reducing the environmental impact of the global industrial food system is a complicated task well beyond the scope of UA. The most effective measures for actually addressing the negative environmental impact of the food system include improving agricultural technologies, reducing food waste, and shifting to more plant-based diets (Springmann et al, 2018).

So if UA does not significantly improve food security, increase food affordability, or reduce environmental problems, one may ask, *What's the point?* Valley and Wittman (2019) address this question by highlighting the multifunctionality of UA – particularly its social, educational, and health-related functions, but also its function as a demonstration site to reinvigorate engagement with the food system:

By transforming urban landscapes to produce food, increase food literacy, and dialogue about the role of food in urban communities, urban agriculture demonstrates how food matters to urban residents and provides a pathway for discussions about food production and food security to be brought back to the urban political arena (2019, p. 42).

While UA initiatives may seem like a “drop in the bucket,” these small-scale initiatives can spread into a larger movement, demanding the attention

of governments and corporations – as they already have (McClintock, 2010). By promoting food literacy, civic engagement, and a sense of connection to food, land, and each other, UA can create an undercurrent of support and motivation for the creation of a more just and sustainable food system at local, regional, and global scales (Valley and Wittman, 2019).

## 3.7 CONCLUSION

While UA can somewhat help to close the ecological rift and mitigate environmental problems, the argument made here is that its greatest potential lies in its effectiveness as a means of reconnection – to the land, to each other, and to ourselves. By acting as a social safety net, promoting food-related traditions and cultural practices, and bringing people together through a common activity, UA can reconnect us to our communities and our cultural roots. Through hands-on learning, direct contact with nature, and experiencing the fruits of our labour, UA can teach us food literacy and eco-literacy, improve our mental and physical health, and remind us that we are inherently connected to the land. In a food system that is physically and cognitively distanced and disjointed, UA allows us to reconnect some of the puzzle pieces, enabling us to see the bigger picture and empowering us to build a more just and sustainable food system.



Fig. 4.1.1 – Colourful blooms at Maymoor Park Community Garden in Redmond, Washington. (Credit: King County Parks)

# 04 URBAN AGRICULTURE IN PUBLIC PARKS

## 4.1 INTRODUCTION

Urban agriculture can occur in a variety of forms, places, and contexts, but as a student of landscape architecture, I seek an approach particularly suited to landscape architects. Landscape architects are trained to design urban, environmentally friendly, aesthetically pleasing, and publicly accessible greenspaces, and because of this expertise, they are often hired to design public parks. Therefore, this practicum aims to integrate urban agriculture into a public park in Winnipeg – my own urban context.

Public parks have great potential for food production. Landscape architect Catherine Bukowski believes that food production can attract new interest and create new programming opportunities for public parks (Baker, 2019). Landscape architect Darrin Nordahl argues that municipal land, such as a public park, is ideal for growing food because “municipalities have land, staff, irrigation, and all of the resources required to maintain parks and gardens; thus edibles can be grown assuming a redirection of resources” (cited in Reid and Besanger, 2018, p. 157). Edible public parks have already proven to be viable and successful. At an edible park in Atlanta, Georgia, for instance, “residents can do all of the usual park things – walk, play, sit, read – but can also gather food” (Schuler, 2019). Edible public parks are a real possibility and an incredible opportunity for landscape architects.

By designing edible public parks, landscape architects

can help make a positive impact on communities and individuals. Showcasing edible plants in public greenspaces offers an easy and accessible way for the general public to see and interact with the process of food production, thereby promoting food literacy, eco-literacy, and many other benefits.

However, practicing urban agriculture within a public park also comes with unique challenges. First, parks typically place high value on aesthetic appeal – particularly visual appearance – while urban agriculture is often a more utilitarian activity. Second, public parks are open and accessible to the general public, provoking concerns about theft, vandalism, or abuse of the food production areas.

## 4.2 AESTHETIC CHALLENGES

Aesthetic appeal – particularly visual appearance – is a major priority for public parks. In any given park, the dominant planting strategy is likely to exhibit two main characteristics:

1. **PLANT TYPE:** Ornamental (i.e. flowering, textural, non-edible)
2. **LAYOUT:** Attractive, creative planting arrangements that showcase the beauty of the various plants

The dominant planting strategy for urban agriculture, however, is the opposite:

1. **PLANT TYPE:** Edible (e.g. corn, broccoli, tomatoes)

2. **LAYOUT:** Utilitarian, repetitive rows in rectilinear arrangements that allow for easy maintenance and harvest

In addition to prioritizing utility over beauty, urban agriculture can also struggle with a reputation of being messy, haphazard, or simply uninteresting. As Michaels explains:

[Urban agriculture] projects tend to share some common characteristics, which sit outside of the dominant approaches to the design of the urban environment by landscape and urban design professionals. These characteristics include a fine grain, an introverted and often unplanned character... To some, they are perceived as detractors to the quality of urban landscape (2005, p. 218).

In this way, urban agriculture may seem incompatible with the aesthetic standards for public parks. However, this need not be the case. First, edible plants *can* be used in ornamental, park-like settings – history has demonstrated this. Traditional French potager gardens such as the one at Versailles, Middle Eastern paradise gardens, and medieval cloister gardens all combine ornamental and edible plants to create spaces that were aesthetically appealing in terms of sight, smell, sound, touch, and taste. In this way, edible plants can actually increase the aesthetic appeal of parks by offering opportunities to engage all five senses – including taste.

Second, edible plants *do* have ornamental qualities, and they *can* be arranged in an attractive and creative manner – edible landscaping has demonstrated this. Since the 1980s, there has been a rise of interest in the ornamental qualities of edible plants, leading to the emergence of the edible landscaping trend. Rosalind Creasy’s 1982 bestselling book, *The complete book of edible landscaping*, made a case for the aesthetic potential of edible plants by showcasing her own beautifully and edibly landscaped property. Since then, edible landscaping has become increasingly popular – even declared to be “the hottest trend in horticulture” in 2010 (Palmer, 2010). Today, edible landscaping can be found in many different urban settings, from public institutions – such as the University of Minnesota’s edible campus (Palmer, 2010) or the City of Hamilton’s municipal office (Levenston, 2016) – to



Fig. 4.2.1 Ornamental gardens at Kildonan Park, Winnipeg. (Credit: Travis Rudolph)

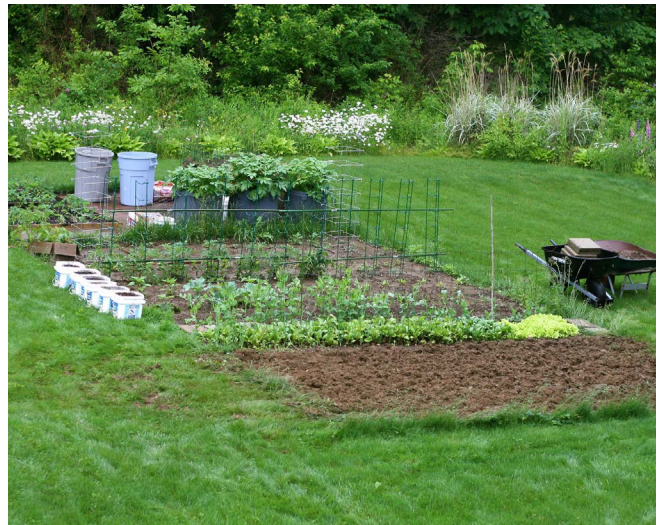


Fig. 4.2.2 A typical vegetable garden. (Credit: Susy Morris)



Fig. 4.2.3 An edible landscaping transformation in a residential front yard. (Credit: Sue St. Jean)

lawn-to-food transformations at private homes, driven by movements such as architect Fritz Haeg’s “Edible Estates” and H.C. Flores’ “Grow food not lawns” (Haeg and Balmori, 2008; Flores, 2006). The last decade has also seen the emergence of specialized edible landscaping companies (Oberst, 2018). Through edible landscaping, food production can be adapted to meet the dominant aesthetic expectations for public parks.

Aesthetically mindful food production, such as edible landscaping, is important for gaining public acceptance of urban agriculture in public greenspaces. Remiarz (2017) argues that “people are more likely to engage with a space they find beautiful” (p. 87), and that “aesthetics are as important as productivity, especially when working in the public realm” (p. 169). Bohn and Viljoen argue that “if urban agriculture is to be widely adopted, its other functions and benefits such as ... urban ornament also require articulation” (2011, p.161). This was demonstrated in Geneva after World War II when urban agriculture was “no longer needed” for supplemental food production, leading to plans to demolish the city’s urban allotment gardens to make way for new developments (Frauenfelder, 2018). The only reason the gardens were saved was because the gardeners transformed them into tidy and attractive spaces, using their aesthetic value to justify their preservation (2018). Regardless of its social and individual benefits, urban agriculture can only be successfully integrated into public parks if it meets the dominant aesthetic standards of its context.

However, this must be tempered by the fact that our aesthetic preferences are not fixed – they are personal perceptions that can change and adapt. As Bukowski and Munsell explain, “perceptions of acceptable landscapes are formed by cultural and socioeconomic backgrounds and transformed or refined over time through exposure to new sights, ideas, or education” (2018, p. 123). People who are accustomed to tidy, ornamental gardens may initially reject an unconventional landscape because they do not understand its purpose or how it works (2018). This is particularly relevant for more “natural” methods of food production, such as permaculture gardens, whose ecological aesthetic may be perceived as a “messy.” On the other hand, someone with an agricultural background may find urban agriculture in public parks to be beautiful and meaningful.

To expand aesthetic values, education and exposure are key. Studies have shown that increased interaction and exposure to the natural environment can lead to positive perceptions of biodiverse habitats (Riboulot-Chetrit, Simon, and Raymond, 2018). Educational elements and programs such as signage, workshops, and tours can help to promote understanding of unfamiliar features. Research has shown that a gain in ecological knowledge can lead to an increased tolerance of “spontaneous vegetation” and less orderly gardens (Riboulot-Chetrit, Simon, and Raymond, 2018). In other words, improved eco-literacy can change someone’s aesthetic perception of a garden



Fig. 4.2.4 These “messy” gardens may have more ecological complexity and higher wildlife value than “tidy” gardens. (Credit: Stacy Philpott)

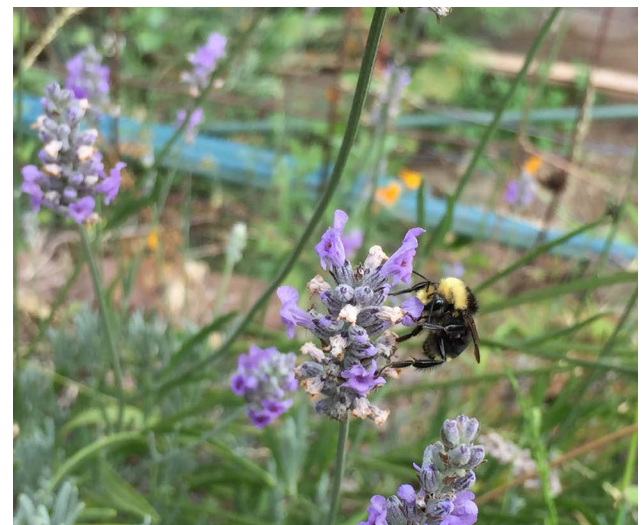


Fig. 4.2.5 A bumblebee pollinates a lavender flower at Salinas Community Garden in Santa Cruz, California. (Credit: Stacy Philpott)

from “disorderly / neglected / messy” to “beautiful / important / useful for supporting insects” (2018). In the same way, an understanding of urban agriculture’s importance for supporting communities, individuals, and non-human species can lead to an increased appreciation of food production spaces and improved tolerance of unconventional aesthetics.

To conclude, integrating urban agriculture into public parks will require finding a balance between meeting existing aesthetic norms and providing opportunities to expand aesthetic values. Landscape architect Joan Iverson Nassauer recommends using the locally accepted aesthetic language to frame new concepts in a way that people will understand (1995). For example, permaculture gardens (an unfamiliar ecological aesthetic) could be introduced by confining them within neat stone borders and clearly defined pathways (an existing aesthetic), providing cues that the gardens are intentional and cared for. As long as new ideas are presented sensitively and intentionally, aesthetic concerns need not be a barrier to the creation of edible parks.

### 4.3 CHALLENGES WITH PUBLIC ACCESS

Another challenge for urban agriculture in public parks is that parks are publicly accessible, while food production is typically an individual activity performed on privately owned or rented land. It would be inappropriate to simply fence off the edible parts of the park or provide access only to certain individuals; that would go against the spirit of public parks, which are intended for the common use and enjoyment of all people. And so, edible public parks inevitably become a sort of food commons. Food commons can vary in their degree of openness – for instance, a community garden may encourage visitors to walk through the space but ask them not pick anything they did not grow, or a public produce project may operate through a model of shared maintenance and open harvest – but ultimately, both are shared spaces that rely on the trust of others to guard against abuse.

We have lived in a world of commodified agriculture and private property for hundreds of years, making the notion of creating a publicly accessible food commons a challenging and unfamiliar idea. As

Bukowski explains, “the notion of creating an agricultural common where all are free to gather – and *gather* – runs counter to the dominant narrative of the past 250 years of [North American] history, which centers on private land ownership and free-market capitalism” (cited in Schuler, 2019). Illustrating this, researchers documenting the Public Produce Project in Kamloops noted the public’s initial confusion towards the project, explaining that “the concept of *public* produce is new to most people, the concept of *free* is foreign to many, and the practice of *communal* is not something that our society practices very often” (Reid, Besanger, and Klohn, 2013, cited in Reid and Besanger, 2018).

Our unfamiliarity with food commons can manifest in problematic behaviours. Garrett Hardin’s famous 1968 essay describes the “tragedy of the commons,” a situation wherein the commons is inevitably destroyed as each community member takes advantage of it for their own individual gain until there is not enough left for anyone; an example of this is overfishing in international waters. Vandalism and theft are also common concerns that can become challenging issues for many food commons projects (Remiarz, 2017). However, according to commons advocate Jonathan Rowe, food commons are generally only abused when there are inadequate or insufficient social structures to govern their use (Rowe and Barnes, 2013). In other words, with sufficient cooperation among those sharing the space, food commons in public parks are less likely to experience abuse.

This is confirmed through William H. Whyte’s studies of human interactions in public places during the 1960s, wherein he found that undesirable behaviour is



Fig. 4.3.1 A fenced community garden in San Antonio, Texas. (Credit: U.S. Department of Agriculture)

best controlled through social means (e.g. being seen by others) rather than physical means (e.g. installing a fence to prevent access to a certain area) (Bukowski and Munsell, 2018). Whyte concluded that “the way people use a place mirrors expectation” (cited in Bukowski and Munsell, 2018, p. 129) – so as long as the expectations for behaviour in food commons are clearly established, people will generally adhere to those expectations. Many recent food commons initiatives have verified this, finding that behavioural issues can be prevented through clear communication (e.g. signage explaining the rules) and a strong sense of shared community ownership, leading to cooperation and respect of the space (Bukowski and Munsell, 2018). A certain degree of theft is inevitable, but some food commons projects have reframed theft as an indication of hunger rather than a crime, allowing the hungry to harvest as needed (Philadelphia Orchard Project, 2021). In addition to recent projects, the survival of some ancient food commons – such as the shared irrigation systems in Spanish *Huertas*, and the community-owned forests and pasture lands known as *Baldios* in Portugal and as *Crofts* in Scotland

– shows that with adequate cooperation, commons can endure for centuries (Vivero-Pol, n.d.).

To conclude, since agriculture has been understood as a private activity for hundreds of years, there may be concerns regarding the suitability of urban agriculture for publicly accessible parks. However, the success of many historic and recent food commons indicates that behavioural issues can be managed through social means. Some of these strategies, such as signage and community ownership, will be further elaborated in Chapter 5: Community Relationships.

Now, after having discussed some of the unique aesthetic and access-related challenges for integrating urban agriculture into public parks, one may ask, *What form of urban agriculture can best respond to these challenges?* In my experience, I have seen community gardens, edibly landscaped planters, and food forests in various public greenspaces, and although strategic design can make any of these options work, I believe that public food forests are especially well suited for public parks.



Fig. 4.3.2 People fill a public park in Toronto. (Credit: Hwan Hong)

## 4.4 BACKGROUND: PUBLIC FOOD FORESTS

### What is a food forest?

A food forest is a perennial garden modeled after a young forest ecosystem that provides humans with food and other benefits. As a mindful, ecological alternative to conventional agricultural methods, food forests can provide food in a way that benefits humans, non-human organisms, and the natural environment. While an experienced forager might be able to find food in any natural food forest, a *food forest* is different from a natural forest in that it is designed and maintained by humans, for human purposes. This means that it is managed to optimize yield, ease of harvest, aesthetic value, and other beneficial qualities, and that there is a higher density of edible plants compared to a natural forest (Crawford, 2010).

Food forests are an excellent example of permaculture. Derived from the amalgamation of the words *permanent* and *agriculture*, the term permaculture refers to “consciously designed landscapes which mimic the patterns and relationships found in nature, while yielding an abundance of food, fibre and energy for provision of local needs” (Holmgren, 2011, p. xix). Permaculture is similar to organic farming in that uses environmentally friendly techniques, resources, and methods; however, it is different from organic farming in that it deliberately mimics natural cycles, patterns, and mechanisms to create self-sustaining, closed-loop food “ecosystems.”

Food forests specifically mimic young forest ecosystems. Based on the structure, patterns, and cycles found in healthy mid-succession forests, they are designed to capture and reuse water and nutrients through closed cycles; their soil is protected by duff and plant growth; they provide food, habitat, and microclimates for a diverse range of plants and organisms; they contain multiple vertical plant layers



Fig. 4.4.1 A young, temperate food forest in France. (Credit: Irene Kightley)

– roots, groundcovers, perennials, shrubs, vines, and trees; and they offer a variety of horizontal patches of differing densities and compositions, creating a variety of niches and microclimates for a range of species (Hemenway, 2009). By mimicking the patterns and processes of natural forests, food forests can become balanced, resilient, and relatively self-sustaining food ecosystems.

Several key terms and concepts are frequently employed in permaculture and food forest discourse. A plant's *role* refers to its ecological or human function within the permaculture system. Plants with human roles include those that are edible, medicinal, useful for energy or crafting, or aesthetically pleasing (Frey and Czolba, 2017). Plants with ecological roles include (Whitefield, 1996; Frey and Czolba, 2017):

- Soil builders (plants that improve soil quality through nitrogen fixation or by creating “green mulch” through biomass production)
- Dynamic accumulators (plants that can absorb less-available nutrients, making those nutrients available once the plant decomposes)
- Insectaries (attractors of pollinators and beneficial insects)
- Nurse species or windbreaks (fast-growing plants that create shelter and microclimates for other plants)
- Habitat providers (plants providing food or shelter for wildlife and insects)
- Pest deterrents (plants that deter unwanted animals or insects through their undesirable texture or confusing scents, or by attracting a pest's natural predator).

*Stacking* refers to the ability of a plant to perform more than one role, as well as ensuring that each role is performed by more than one plant (Hemenway, 2009). For example, a plant that only provides food for humans and has no other ecological function is not well-stacked; and, relying on a single species to provide food creates an unreliable, insufficiently stacked system.

In permaculture discourse, a *guild* is a rather loosely defined concept that has no correlation to the ecological understanding of guilds (i.e. a group of species that is similar in their use of resources, niche occupation, or roles). Guilds, in this case, are more



Fig. 4.4.2 Traditional “Three Sisters” guild of corn, beans, and squash. (Credit: Sarah Braun)

closely related to the ecological understanding of plant communities, which are groupings of *complementary* plants found together in nature due to positive associations or a lack of competition (Hemenway, 2009). In permaculture, guilds are human-made groupings of three or more complementary plants that may or may not be associated with one another in nature. Hemenway defines a guild as “a group of plants and animals harmoniously interwoven into a pattern of mutual support, often centered around one major species” (2009, p. 183), and Holmgren simply defines guilds as “mutually beneficial plant communities” (Holmgren, p. 165). An example of a simple guild is the traditional Native American “Three Sisters” of corn, beans, and squash, where the beans fix nitrogen, the squash foliage shades out weeds, and the corn roots nourish the beans’ nitrogen-fixing bacteria. Essentially, guilds are human-made groups of plants that thrive and perform well together.

## History

Food forests are an ancient method of food production practiced for over 8,000 years all over the world, most notably in tropical regions such as South and Central America, India, Polynesia, and southeast Asia (Frey & Czolba, 2017). In pre-Columbian South America, the Amazon rainforest was far more inhabited than it is today, and large areas of the region were cultivated as food forest ecosystems (2017). In late 18th-century North America, sophisticated food forests

were documented by early European explorers. In the Eastern woodlands of the US, Indigenous groups cultivated forest crops such as hazelnuts, raspberries, crabapples, and wild plums (2017). Throughout North America, Indigenous people used strategic burning techniques to manage forests, whether suppressing tree saplings to promote prairie grasses to attract game, or burning small clearings to enhance biodiversity and productivity of berries, roots, seeds, and medicinal plants (Kimmerer and Lake, 2001).

The history of contemporary, temperate food forests is relatively short. Food forests were re-introduced in the 1980s by Robert Hart, a writer and horticulturalist from the United Kingdom, who was inspired by India's edible forest gardens. His own forest garden and passionate writing inspired many to consider forest gardening as a way to sustainably produce food and "become a part of their local ecosystem" (Remiarz, 2017, p.13). Hart popularized edible forest gardening in the UK, leading to the first published works and technical guides in the 1990s (2017). Meanwhile in Australia, the creators of the permaculture concept, Bill Mollison and David Holmgren, were inspired by Hart's writing, and so they began to study forest ecosystems as a way to further develop permaculture (Frey and Czolba, 2017). The permaculture forests promoted by Mollison and Holmgren were termed "food forests," a term that later spread to North America and began to take root in the early 2000s (Remiarz, 2017).

Since then, food forests have gained popularity in North America, Europe, and worldwide, as part of the wave of interest in alternative food production. Food forests have been developed for commercial purposes, such as for shade-grown coffee or cocoa beans (Frey and Czolba, 2017); for private use, such as home forest gardens; and for public or shared use, such as public food forests, which a kind of food commons. In the US, many community food forests were created in response to the economic uncertainties of the 2008 recession (Bukowski and Munsell, 2018). Momentum increased further after the recession, leading to the creation of more than seventy community food forests across the US by 2018. In Canada, community food forests have been planted in British Columbia, Ontario, Edmonton, and Winnipeg. Government agencies have responded to this interest in food forests; for instance, the US Forestry Services department has developed

a food forest start-up grant, and the city of Kingston, Ontario has created a community orchard and edible forest policy. However, since most contemporary, temperate food forests have only been planted within the last thirty years and have not reached full maturity, the knowledge and expertise surrounding food forest methodology is still developing.

## 4.5 SUITABILITY OF PUBLIC FOOD FORESTS FOR PUBLIC PARKS

Although theoretically any form of urban agriculture could be successful in a public park, I find public food forests to be particularly advantageous for a number of reasons. Below are some advantages of public food forests that respond specifically to the aesthetic and access-related concerns of public parks.

**AESTHETIC INTEREST:** Compared most urban agriculture projects that emphasize annual, herbaceous plants, food forests offer additional aesthetic interest due to the incorporation of trees and shrubs. Trees' solid trunks, umbrella-like canopies, and larger scale provide visual structure, and they can be manipulated to enhance sight lines, define spaces, and create a sense of enclosure. Trees and shrubs provide seasonal interest in fall and winter, as well as in spring and summer, and thus can transform greenspaces into permanent, year-round destinations for nature lovers. Since public parks also use trees and shrubs to enhance aesthetic appeal, food forests can incorporate the common aesthetic language of typical public parks, making them more culturally accessible.

**ECOLOGICAL AESTHETIC:** Public food forests use permaculture methods to mimic a natural forest ecosystem, leading to a more "natural" or ecological aesthetic. This provides opportunities for visitors to expand their aesthetic standards by learning about how the food forest ecosystem works, thereby promoting eco-literacy and food literacy. When this ecological aesthetic is married with the visual structure provided by trees and shrubs, an ideal aesthetic balance can be found, allowing visitors to feel comfortable in the space while also providing a learning opportunity.

**PUBLIC ACCESS:** Public food forests are intended to be used by communities rather than specific individuals, which aligns with the intentions of public parks.



Fig. 4.5.1 Trees, like these rows of walnuts, have aesthetic interest in winter. (Credit: Phil Roeder)



Fig. 4.5.2 This public planter with edible landscaping in Fort Worth, Texas is not intended to be harvested by the public.

While community gardens have been successful in public parks, the emphasis on individually rented plots creates a space that is geared more towards individuals than to the general public. Fears about theft lead many community gardens to be fenced, which goes against the intentions of public parks. Public food forests, on the other hand, are a very open kind of food commons, with the food forest community often welcoming visitors to the space and inviting them to learn about the project and harvest the produce (so long as they follow the rules). This open access to them well suited to public parks.

**PUBLIC HARVEST:** To increase food literacy and promote connections to food, it is important that the food produced in edible public parks can be harvested by the public. Community gardens generally do not allow for this, as they are privately maintained. Edibly landscaped planters are also ineffective in this respect, as they provide more “food for thought” than food for eating. While planters filled with beautiful arrangements of purple cabbage and rainbow chard can be attractive and thought-provoking, they are usually not intended to be harvested by the public, as removing a plant from the carefully orchestrated planting scheme would leave an obvious gap and negatively affect the garden’s visual composition. Just as one would not harvest the flowers from an ornamental flower bed, no one would dare harvest the food in those planters – and so edible planters are effectively ornamental flower beds in disguise. With food forests, however, harvesting from fruit trees and berry bushes does not harm the food forest aesthetic – in fact, it is aesthetically advantageous to harvest because unpicked fruit can fall and become unattractive. Food forests can also easily incorporate some of the design principles of edible landscaping, as illustrated in Toby Hemenway’s popular guidebook, *Gaia’s Garden: A guide to home-scale permaculture* (2009).

In addition to these aesthetic and access-related advantages, public food forests also offer some additional benefits and challenges:

**PERMANENCE:** The differing lifespans of annual vegetables and perennial trees and shrubs come with different perks: annual plants grow quickly and can be harvested in the same growing season, whereas shrubs and trees can take years to reach mature productivity – but once they are full grown, they promise

continuous food production year after year. The continuous production of perennial plants can help to “establish agriculture as a permanent part of the city’s environment, economy, and culture,” allowing food forests to become permanently integrated with the urban fabric and increasing and strengthening their long-term impact (Philadelphia Orchard Project, 2021). When starting a food forest, some strategies to quell harvesting impatience include interplanting annual plants with immature perennials, or planting some semi-mature trees and shrubs.

**SHARED ABUNDANCE:** Fruit trees in private backyards often produce too much fruit for a single family, potentially becoming more of a burden than an asset. In a common space, however, this abundance can be shared and can bring people together. As architect Christopher Alexander explains,

Fruit trees on common land add much more to the neighbourhood and the community than the same trees in private backyards: privately grown, the trees tend to produce more fruit than one household can consume. On public land, the trees concentrate the feeling of mutual benefit and responsibility. And because they require yearly care, pruning, and harvesting, the fruit trees naturally involve people in their common land. (cited in Moncrieff, 2018, p. 77).

However, this abundance must be well managed. Unharvested fruit can drop to the ground, where it rots, produces unattractive sights and smells, and attracts pests like wasps. Fruit drop is one of the main reasons why many city bylaws forbid fruit trees from urban streets. Fruit trees must therefore be strategically sited away from walkways and benches, and harvesting must be well-organized.

**MAINTENANCE:** Like any form of agriculture, food forests require maintenance like pruning, weeding, watering, and harvesting. However, municipal budgets often have limited budgets for park maintenance, which can create a barrier for urban agriculture in public parks. Food forests offer two advantages in this respect: first, the maintenance decreases over time as the food forest ecosystem becomes increasingly self-sustaining; and second, public food forests are often best managed by communities of volunteers, which takes some pressure off of municipal budgets. The importance of relationships between municipal

governments and communities for managing a food forest in a public park will be further elaborated in the next chapter.

## 4.6 CONCLUSION

Public food forests are an ideal candidate for urban agriculture in public parks: they respond to the aesthetic and access-related challenges of public parks, and they also offer a number of other benefits related to permanence, abundance, and maintenance. Yet, despite these advantages, public food forests represent only a small portion of urban agriculture projects in Winnipeg: there is currently one public food forest at Sustainable South Osborne and one public orchard at The Forks, compared to the 30+ community gardens throughout the city. Therefore, I believe that public food forests should be more strongly considered in the development of public parks and urban agriculture initiatives. This belief is what led me to design a food forest for a public park in Winnipeg for this practicum.



Fig. 4.6.1 Sharing the abundance of apples. (Credit: Bob Jagendorf)



Fig. 5.1.1 Community relationships at Beacon Food Forest. (Credit: Jonathan H. Lee / Subtledream)

# 05 COMMUNITY RELATIONSHIPS

**“Restoring land without restoring relationship is an empty exercise.”**

– Robin Wall Kimmerer (2013)

## 5.1 INTRODUCTION

Landscape architects’ experience in designing public greenspaces can make them valuable contributors to the success of public food forests – especially those in public parks. As design professionals, landscape architects are familiar with codes and regulations, construction processes, and considerations for aesthetics, safety, and accessibility. For instance, at Beacon Food Forest, one of the earliest and most well-known community food forests, a landscape architect’s professional involvement gave the project more clout and credibility when the idea was first proposed to City officials (Bukowski and Munsell, 2018). The landscape architect ensured that the design followed applicable codes and met requirements for the site’s particular water conservation land status, saving the community potential future frustration and hassle (2018). Many other public food forests have involved landscape architects, such as Browns Mill Food Forest in Atlanta, Georgia (Schuler, 2019); Festival Beach Food Forest in Austin, Texas (Toon, 2014); and Growing Goodwill Community Garden in Roanoke, Virginia (Baker, 2019). Landscape architects’ involvement in public food forest design demonstrates the value of their

expertise.

However, while the idea of public food forests being initiated by professionals such as landscape architects, urban planners, and city officials is progressive and promising, how this is done requires careful consideration. Regardless of good intentions, a “top-down” approach, where the project is more or less imposed on a community, risks failure of the public food forest – but so does a “bottom-up” approach that neglects to include governing officials and professional support. Moreover, a design approach that prioritizes functional food production over people undermines the social ties that hold a community food forest together. This chapter discusses the importance of relationships *with* and *within* the community, which are critical to the success of public food forests.

## 5.2 RELATIONSHIPS WITH COMMUNITY

Projects initiated from the “top” (i.e. design professionals or government agencies) can indicate a genuine desire for positive change and food system reform. However, Remiarz explains that

... a disadvantage of [projects with a top-down approach] is their technocratic ring, which makes them palatable to authority but not accessible to everyone. Their origin among landscape professionals and property

developers can lead to a danger of leaving out ‘the people’. All too often, designers of grand urban schemes forget that someone actually has to live with the results of their imagination, and it usually isn’t them (2017, p. 115).

Regardless of logical reasoning, professional know-how, or theoretical basis (such as the content presented in the previous sections), the actual design and implementation of a public food forest should not be realized by designers or governments alone. In the case of Kamloops Public Produce Project, a successful grassroots food commons initiative inspired the city government to initiate its own municipally run project. However, the lack of effort to garner community input resulted in a project that was initially not well received by the community it was meant to serve, sparking questioning and controversy (Reid and Besanger, 2018). Broad-scale implementation of top-down food initiatives on public land could resemble a new, subtle sort of feudalism, which is not desirable in a democratic society (Holmgren, 2011).

On the other hand, food initiatives that emphasize a “bottom-up” approach while excluding government bodies or design professionals can be problematic as well. Guerilla gardening, for instance – a subversive practice where food is secretly planted on public land, or fruit tree branches are illegally grafted onto public street trees – can create tensions between governing agencies and citizens, potentially resulting in the government’s reluctance to allow or participate in future food initiatives (Reid and Besanger, 2018). Projects that do not follow codes and bylaws, or that use vacant land without acquiring the proper permits, can be easily shut down or bulldozed. Reid and Besanger have found that “grassroots-level projects often lack the kind of research that is so critical to the success and longevity of citizen-led projects” (2018, p. 150), which is why communication with professional designers, governing bodies, and other key stakeholders is crucial.

Even with the proper leases and permits, there is always risk in leasing public land or renting any urban lot. For instance, at the grassroots-initiated Hazelwood Food Forest in Pittsburgh, after five years of hard work on a vacant lot to remediate the lead-contaminated soil and establish fruit trees and berry shrubs, the food forest community was simply asked to leave the site to make way for a new commercial development

(Frey and Czolba, 2017). While no project is immune to possible changes in development plans, a shared vision and mutual understanding between the community and the city or landholder aids in securing the land over the long term.

Public food forests and other urban food initiatives are most successful when civilians and governing agencies or professionals work together – what Holmgren describes as “top-down thinking, bottom-up action” (2011, p. 80). Viljoen and Bohn define this as the power of partnering: “where city governments enter into mutually beneficial collaborative partnerships with local businesses, social enterprises, and civil society groups to achieve in concert what they could not hope to achieve alone” (2014, p. 22). They go on to explain:

Food system planners will need to draw on such partnerships because urban design concepts... need support from the whole community, not just the planning community, if they are to be successfully realised as an integral part of a health-promoting foodscape for the many and not the few. Without community support and participation, the [urban food initiative] could find itself assimilated into the wealth-generating repertoires of the rich, furnishing a green veneer to the gentrification of urban areas designed for the few not the many (Viljoen and Bohn, 2014, p. 23).

Creating a strong relationship between citizens and governments or design professionals has proven to be possible and successful. At Henteleff Park in Winnipeg, a shared vision for the park and a shared land use agreement between the City and the community has resulted in a successful and impactful reforestation project. In Toronto and Vancouver, food policy councils were created to enable future urban food initiatives, and their success “is seen to depend not a zero-sum power struggle between city government and civil society, but rather on a judicious combination of ‘top-down’ support from the key institutions of the city government allied to the ‘bottom-up’ energies of civil society” (Viljoen and Bohn, 2014, p. 19). When both parties “share the burden of reform” in this way, change becomes possible and viable over the long term (2014, p. 19).

Since public food forests are generally small-scale



Fig. 5.2.1 A design charette in Springfield, Oregon involving designers, community members, and government officials. (Credit: Erik Bishoff)

projects intended to be used by the local community, it is imperative that public food forests are designed and implemented with the desire, support, and participation of that community. Public food forests, or any food commons, are “*participatory* landscapes where community and environment become one,” and so community participation in the creation process is key (Bukowski and Munsell, 2018, p. 170; emphasis mine). Examples of participatory design processes include public design charettes, surveys, and open house meetings to gauge interest. A food forest designed *with* the community ensures that the forest will meet actual community needs, such as including plants that community members would actually want to harvest and use (Baker, 2019). An inclusive design process also helps to create a sense of connectedness among participating community members, which means that “they will be more likely to use and steward the resulting place” (Bukowski and Munsell, 2018, p. 129). Without a collaborative design process, the project risks being irrelevant, unwanted, or neglected.

Even if the food forest is situated on land that is not owned by the community itself, it is still critical to establish a sense of community ownership. In their research on public food forests, Bukowski and Munsell found that food forests created through a grassroots or community-based approach are typically more successful due to the participants’ heightened sense of ownership and pride (2018). At the Dr. George Washington Carver Edible Park, for example, the designers instilled a sense of ownership by involving the community in every step of the design and installation, which enabled the community to feel proud of what they had created together (2018). Holmgren (2011) says that food commons are more likely to be managed well within intentional communities where common ownership is understood, rather than through bureaucratic management. A sense of community ownership has also shown to reduce the risk of vandalism, theft, and exploitation as discussed in the previous chapter.

## 5.3 RELATIONSHIPS *WITHIN* COMMUNITY

Not only is it important to develop a positive working relationship *with* the community when designing a public food forest at the start of the project, but it is also important to promote the development of ongoing relationships *within* that community as the project continues. Because work is done collaboratively, public food forests require consistent community involvement and support in order to endure over the long term – and regular participation is difficult to sustain without genuine relationships among participants.

To promote relationships within the community, Bukowski and Munsell emphasize fostering a sense of camaraderie, similar to an intramural sports team (2018). When people work together for a specific cause, they can feel a sense of belonging and unity with the group. For instance, at Beacon Food forest, a public food forest where the participation is consistently high, many people felt that they were “a

part of something larger” (2018, p. 228). The project needs participation not only within the “core group” of volunteers, but also with the community beyond. It needs to foster an inclusive “culture of participation” between people of different ages, genders, ethnicities, and backgrounds (Reid and Besanger, 2018). When people spend time together in the food forest, tell stories about it, and care for it, they begin to transform the space into a place, thereby cultivating relationships with each other and also with the place itself (Reid and Besanger, 2018). Similar to the complex web of relationships in healthy ecosystems, this web of food forest relationships creates a resilient social network that sustains the health and vitality of the food forest as a “socio-ecologic space” (Schuler, 2019) for years to come.

While relationships are somewhat intangible, designers can still work to promote their development through the physical design of the food forest – through the design of gathering places, incorporating strategic signage, and creating places that are accessible, inclusive, safe, and beautiful.



Fig. 5.3.1 Volunteers working together at The People's Garden in Washington, DC. (Credit: U.S. Department of Agriculture)

**GATHERING SPACES:** The importance of gathering spaces is clear in the title of Bukowski and Munsell's book – *The community food forest handbook: How to plan, organize, and nurture edible gathering spaces* – which essentially defines public food forests as a type of gathering space (2018; emphasis mine). When asked which design elements most contribute to the “magic” of a community food forest, Bukowski replies:

Having a community gathering space is huge. It can be as simple as a picnic table, with protection from wind or really hot conditions. It's good to have a place where people can sit down or rest. And it's important to include space for community celebration, such as a seasonal festival or potluck that incorporates some of the harvest from the site, so people become connected to the space (Baker, 2019).

Gathering spaces provide key places for rest, socialization, celebration, and events, which can foster the development of relationships. Browns Mill Food Forest, for instance, promotes relationships through multiple gathering spaces, including an outdoor classroom, seating areas, and a pavilion for events (Schuler, 2019). It is important that gathering spaces are flexible, multi-functional, and able to accommodate a variety of events, activities, and uses. For example, Beacon Food Forest invites the public to a large, celebratory feast at the end of the year, so a large, open space to accommodate occasional public events was an important design consideration



Fig. 5.3.2 Gathering areas and picnic tables accommodate events at The People's Garden. (Credit: U.S. Department of Agriculture)

(Remiarz, 2017). The pavilion at Beacon Food Forest is also designed to serve a number of purposes, such as lunch breaks, meetings, shelter, and public educational workshops (2017). Designers should also consider the support spaces necessary to enable the food forest's various functions. Browns Mill Food Forest offers public washrooms, storage areas for supplies, and a water bottle and wash station (Schuler, 2019), and Beacon Food Forest includes a kitchen area to prepare food for public feasts (Bukowski and Munsell, 2018). The types of gathering and support spaces best suited for a particular food forest should be determined with the community through a collaborative design process.

**SIGNAGE:** Signage is another important design component. Clear and well-designed signage can help to establish common understanding, minimize confusion and frustration, and promote community engagement – all of which serve to support positive relationships within the food forest community. As Bukowski explains:

Without signage, people walk by and don't really understand what they're looking at. They don't understand that the food is free or that they can become involved. Signage can foster some of the deeper and more important conversations about how the space serves community, and get people thinking about how they can become involved in other places within the community to bring about change (Baker, 2019).

Festival Beach Food Forest created educational



Fig. 5.3.3 Signage at Wayne Community Gardens in Wayne, Nebraska. (Credit: Ali Eminov)

signage to help people understand what food is available for harvest, when it is ready, and how to harvest it, thereby preventing early harvest and damage to the plants (Toon, 2014). They also include signage that displays the rules, such as “Take what you will eat today,” which encourages cooperation and discourages overharvest (2014). Beacon Food Forest has a chalkboard map that can be updated to direct visitors to harvestable areas of the site and areas in need of maintenance (Bukowski and Munsell, 2018). Its educational signage describes how permaculture works, and its entrance signage displays the park name, vision, and rules so that newcomers know what to expect (2018). A covered kiosk or signage board can communicate information such as rules, vision, maps, and harvesting guidelines while also offering a participatory way for the community to post about events, meetings, or other notices (2018). Public food forests can use signage to promote cooperation and mutual understanding, which can support the development of positive relationships.

**ACCESSIBILITY & INCLUSIVITY:** Accessible and inclusive design is also important. If certain community members are excluded due to physical ability, age, ethnicity, or other factors, the food forest cannot truly become a community space – and so the formation of meaningful relationships, as well as the potential impact of the project, will be hindered. As Remiarz explains:

Accessibility is an issue that has so far not been explicitly considered in many forest gardens, but it is an important part of their

social functionality. If the edible landscaping approach is to spread beyond a small niche and become more mainstream, accessibility will have to become a consideration as important as ecological functionality, productivity, and aesthetics (2017, p. 87).

Accessible design can be understood as physical access, like ensuring that paths are wide enough to accommodate wheelchairs, wheelbarrows, or strollers, and that they are made of an accessible material (Remiarz, 2017). Accessibility can also be understood in terms of special needs, such as providing wheelchair-accessible planters and site furniture (Alberta Health Services, 2019). Inclusive design anticipates the different needs of people and works to accommodate those needs. Beacon Food Forest accommodates the needs of different ages by including a kids’ play area in its design, anticipating that some parents may have no choice but to bring their kids along when working in the food forest. Since Beacon Food Forest is located in a very diverse area, they also translate all their signage into multiple languages to make the site more inviting to recent immigrants (Bukowski and Munsell, 2018). Designs that meet the diverse needs of their community make the space more inviting and enjoyable, promoting higher levels of interaction, participation, and relationship development.

**SAFETY:** Safety is important for the design of any public greenspace. If people do not feel safe in the food forest, they will be less eager to engage with it. Bukowski explains that “if the space isn’t created



Fig. 5.3.4 Wheelchair accessible gardens. (Credit: Gerry Thomsen)



Fig. 5.3.5 Community art installed on the fence at Barracks Lane Community Garden in Oxford, England. (Credit: Karen Blakeman)

with public use in mind, there can be conflicts later on in terms of questions such as, Was it designed with enough lighting for people to feel safe walking through it in the evening? Is there enough visual openness within it?” (Baker, 2019). When people feel safe and comfortable in a space, they are more likely to spend time in it – and in turn, the more people spend time in the park, the safer it will feel (Tate, 2015). Many safety issues can be mitigated through the application of CPTED (Crime Prevention Through Environmental Design) principles, which are used by many landscape architects.

One particular safety concern with food forests is a lack of visibility due to trees and shrubs that are too densely spaced. This happened at Dr. George Washington Carver Edible Park in Asheville, Carolina, the oldest public food forest in North America and therefore one of the few that actually has mature tree canopies. Bukowski and Munsell explain that the type of shaded, enclosed space created by dense tree canopies may “feel like a secret garden for some, [but] it also blocks line of sight in several locations, making it feel unsafe for others” (2018, p. 107). Eventually, some of the trees that were planted too close together were removed to minimize potential hiding places and to make room for night-time lighting (2018). These safety enhancements – lighting, restoring visual sight lines, and minimizing dark, enclosed spaces – made the park more inviting, creating a place that was safe for relationships to develop.

**AESTHETICS:** An aesthetically pleasing space can also support the development of relationships. Successful food forests invite people into the space through the use of aesthetic strategies, such as intriguing sight lines or the creation of comfortable “outdoor rooms,” as well as through attractive visual elements, such as clearly delineated pathways, attractive site furniture, or art installations (Baker, 2019). Art installations can provide opportunities for community participation, and objects that incorporate locally significant materials or forms can enhance the sense of place. For example, at the Bloomington Community Orchard in Iowa, sculptural art features created by local artists instill a sense of community pride, and the limestone benches symbolize the area’s geological history (2018). Oftentimes, design features can serve both aesthetic and functional purposes. At Henteleff Park in Winnipeg, for example, the storage shed has

beautifully carved wooden panels depicting traditional farm tools, and at Dr. George Washington Carver Edible Park, a wooden boardwalk created an attractive aesthetic element while also preventing trampling of the groundcover plants (Bukowski and Munsell, 2018). A design that is aesthetically pleasing and meaningful can help to draw more people into the space, thereby creating more opportunities to form relationships, memories, and a sense of connection to that place.

## 5.4 CONCLUSION

In summary, public food forests are most successful when they are designed and managed *with* the local community and when they support and promote relationships *within* that community. A bureaucratic, top-down approach risks rejection by the community it is situated in, which can result in a poorly maintained project or outright failure. A bottom-up approach that doesn’t include governing agencies or professional designers, on the other hand, risks rejection or opposition by the governing agencies that own that land. The ideal approach involves a collaborative partnership between the community and the governing agencies or professionals. A collaborative design process can promote a positive relationship between these two parties, establish a shared vision, and create a sense of community ownership.

For a public food forest to endure over the long term, it is important to establish social ties among community members to create a sense of belonging to each other and to the project. While landscape architects are typically not involved in the ongoing management of the public food forest, they can help to foster these relationships at the onset of design by considering the use of gathering spaces, strategic signage, accessibility and inclusivity, safety, and aesthetics. These design considerations create a foundation that allows opportunities for interaction, participation, communication, cooperation, and connections to be built, both within the community and with the space itself.



Fig. 6.1.1 Map showing case study locations. (Credit for base map: Agyle)

# 06 CASE STUDIES

## 6.1 INTRODUCTION

This chapter provides descriptive case studies of three projects relevant to the design of a public food forest in Winnipeg. The first case, Beacon Food Forest, demonstrates what a successful public food forest can look like in terms of its design elements, community engagement strategies, and design process. The second case, Kamloops Public Produce, deals with two food commons initiatives, focusing on the challenges of ownership and government-community partnerships. The third case, Henteleff Park, shows how joint government-community management of a reforestation project in a public park can be successful, providing a model for future public food forest projects in Winnipeg.



Fig. 6.2.1 Aerial image of Beacon Food Forest. (Credit: Jonathan H. Lee / Subtledream)

## 6.2 BEACON FOOD FOREST

**Location:** 15 Avenue South and South Dakota Street, Seattle, Washington, USA

**Established:** Site preparation in 2012. Planting and Phase 1 in Fall 2013-2014. Phase 2 in Summer 2019.

**Size:** 2.8 hectares or 3.5 acres total (1.75 acres completed in Phase 1 and 1.5 acres completed in Phase 2)

**Owner:** Seattle Public Utilities

### Sources

All information was compiled from Bukowski and Munsell (2018), Remiarz (2017), and the official website of Beacon Food Forest (n.d.).

### Objectives

The Beacon Food Forest aims to:

- Serve as a demonstration site that reimagines how public greenspaces can be used;
- Build a local, community-based, just, decolonized, and sustainable food ecosystem that exemplifies permaculture principles;
- Build community through inclusive participation;
- Promote education and learning; and,
- Provide the community with fresh, healthy food that is free to harvest.

### The story

Beacon Hill is a neighbourhood in Seattle, Washington located two miles from the city centre and halfway between the Duwamish River and Lake Washington. The neighbourhood is very ethnically diverse, with the local public school's newsletter translated into fifty languages. In 2008, the City of Seattle made a public commitment to improve local food security, setting the stage for alternative food production initiatives.

The inspiration for Beacon Food Forest began in 2009 when four friends completed their final project for a permaculture course. They envisioned how the seven-acre, underutilized lawn space at Jefferson

Park in the Beacon Hill neighbourhood could be transformed into a permaculture park and edible arboretum that served the community. After the course ended, the group decided to see whether the community might share their interest and vision for the project. Their first public meeting in February 2010 received positive responses from the public, local organizations, and the city's parks department, which led to the establishment of a core group and steering committee for the project known as Beacon Food Forest (BFF). Support was bolstered when the City of Seattle declared 2010 the "Year of Urban Agriculture." BFF used this momentum to justify support for their project.

For the rest of 2010, BFF worked to garner public and political support for the project while navigating the challenges of using public land. One complication was that the Parks Department could not justify what might be seen as "preferential treatment" by allowing one community group rather than another to install a project on public land. This issue was resolved in two ways: first, the steering committee worked earnestly to gain even more public support, demonstrating that this project was different from others in terms of shared interest. Second, BFF formed a non-profit organization and then partnered with the City of Seattle's official P-Patch program, which is an established, forty-year-old community gardening program. This partnership with a reputable organization gave the project more credibility, support, and access to funding and other important resources such as liability insurance.

Another complication was that the park was connected to a water reservoir, which classified the site as water conservation land. The Public Utilities department, which owned the land, had no experience with agricultural projects on water conservation land, and the municipal codes and bylaws were not set up to allow a community-run project with edible plants. To resolve this, the BFF group raised funds to hire a state-approved landscape architect who could navigate these challenges with the City of Seattle. The Harrison Design team won the bid in 2011 and began a collaborative design process with the City and the community.

The design team held three public meetings to gather community input regarding layout, design, and plant species. The meetings were well advertised and well attended, indicating strong community interest. As

the Beacon Hill neighbourhood is very diverse, the meetings were translated into the four most commonly spoken languages. This inclusive design process resulted in a well-crafted master plan design that the community wanted and supported.

By 2012, the site had been prepared for planting, but the plants had not yet been installed. At this point, the media caught wind of the project and the news spread rapidly, resulting in a huge increase of volunteer interest. Knowing the importance of community ownership for managing food commons, the leadership group organized a series of public events in which the volunteers themselves installed trees, shrubs, planting beds, sheet mulching, and irrigation trenches.

In 2013, BFF received a grant for signage development. Once again, the design was developed through a collaborative process between designers and the community. The final signage contained information about rules, harvesting maps, and educational information on permaculture. The signs were translated into multiple languages to make the space inclusive and to ensure common understanding.

By 2014, the project had become even more well known. Over 35 local organizations, associations, educational institutions, and private companies had partnered with BFF, and over 2,000 volunteers had participated in the completion of Phase 1. The committee placed a strong emphasis on education, offering a number of training workshops and educational classes that empowered volunteers to contribute to the site development in an informed, intentional way.

Phase 2 construction began in 2019, and in 2020 during the economic fallout of the COVID-19 pandemic, the community focused on donation gardens to increase local food security. Today, the site contains over 100 edible plant species.

Excluding the individual garden plots, the park is open to public harvesting under the assumption that people will take only what they need and leave some for others, as instructed by the signage. There have been no issues with this so far, indicating a successfully managed food commons. Fruit drop is rarely a problem as the produce is consistently harvested by foragers and well-organized volunteer teams. The project continues to see high levels of participation and

serves as a community, ecological, and educational hub in Beacon Hill. The success of BFF has inspired the creation of other public food forests, such as the Festival Beach Food Forest in Austin, Texas (Toon, 2014).

## Design:

Design elements include:

- Food forests: edible arboretum, permaculture orchard, native food forest, and nut grove
- Berry patch
- P-Patch individual garden plots
- “Common Thread” – a communally-maintained donation garden
- Gathering plaza for events, teaching, and feasts. The pavilion structure includes rainwater harvesting barrels, a kitchen area, and chalk paint door that serves as a messaging board.
- Children’s garden
- Community playfields
- Pollinator patches
- Mushroom & hops hut
- Composting area
- Herb spiral
- Beehives
- Medicinal garden
- Trellis
- Benches
- Wheelchair-accessible pathways & raised beds
- Educational, wayfinding, and informational signage translated into multiple languages

Washrooms and trash cans are not allowed due to water conservation land restrictions.

## Management

**GOVERNANCE:** Beacon Food Forest (BFF) is a non-profit organization with a core committee of approximately 15 people. The committee is divided into subcommittees including steering, site development, education, community development, beehive maintenance, plants and pruning, and food

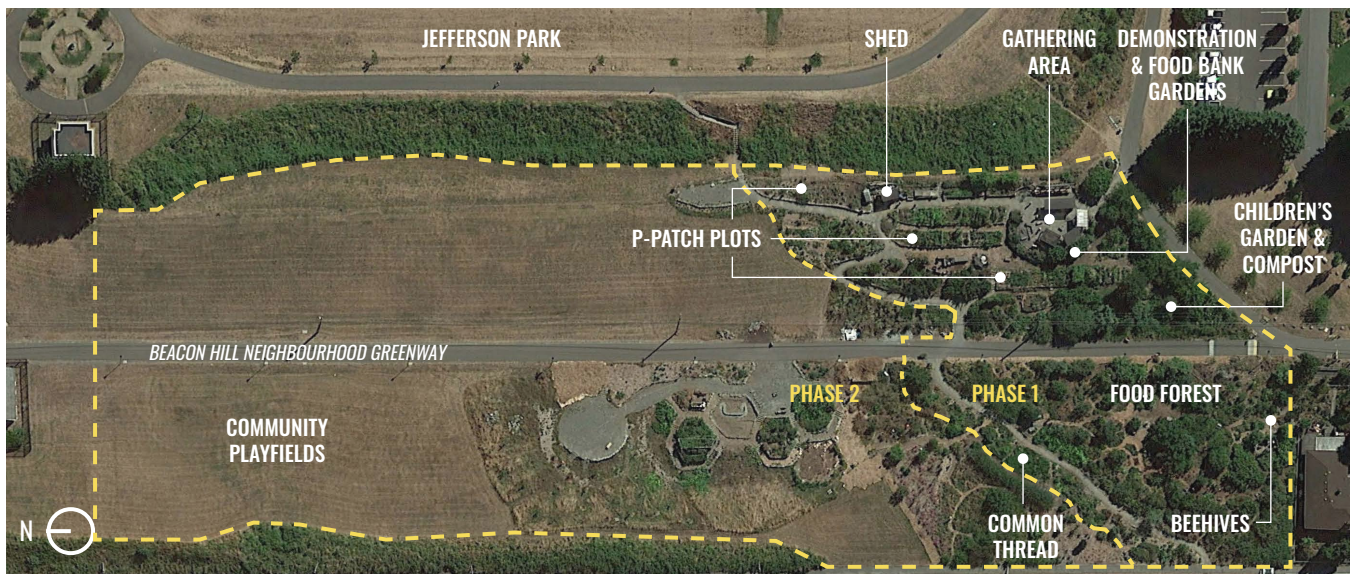


Fig. 6.2.2 Site plan showing early Phase 2 expansion in 2020. (Map data: Google © 2021 Maxar Technologies, US Geological Survey, USDA Farm Service Agency)



Fig. 6.2.3 Educational signage about permaculture translated into 5 languages. (Credit: Jeff Wright)



Fig. 6.2.4 Teaching about composting. (Credit: Jonathan H. Lee / Subtledream)



Fig. 6.2.5 The gathering area is used for hanging out, classes, meals, and celebrations. (Credit: Jonathan H. Lee / Subtledream)



Fig. 6.2.6 The site functions as public park and gathering place. (Credit: Jonathan H. Lee / Subtledream)

acquisition/donation. Most of the subcommittees meet biweekly. BFF's primary partner is the City of Seattle's Department of Neighbourhoods (DON), which runs the P-Patch program and also provides water to the site. BFF pays rent to use the land, which is owned by Seattle Public Utilities.

**LABOUR:** BFF is entirely run by volunteers. The site is maintained on a regular basis by approximately 50 core volunteers, but the larger public events have been attended by hundreds to thousands of volunteers. Volunteers are divided into teams to establish a sense of camaraderie. The general public is welcome to join any work event or team meeting without formal registration, as well as offer voluntary labour on a casual, unscheduled basis.

**FUNDING:** As a non-profit organization, BFF is entirely supported by grants and donations from organizations, public agencies, and individuals. BFF's focus on sustainability, education, and food justice has made them the recipient of many grants from the City of Seattle. Their website includes a link to set up monetary or material donations.

## Public engagement strategies

**COLLABORATIVE DESIGN PROCESS:** Every aspect of the design was determined through an open and inclusive process. The overall plan was designed collaboratively with a landscape architect, the steering committee, and members of the community. Phase 2 was designed over the course of a year by providing maps that community members could draw on at every work party, which were then compiled, adjusted, and integrated into a final plan by the landscape architect. The design was constructed by volunteers rather than contractors, which fostered a sense of community ownership.

**EVENTS AND EDUCATION:** The Food Forest aims to include as many community members as possible in the project by providing multiple ways to get involved regardless of physical ability; by translating all events and communication into multiple languages; and by hosting public events for all community members regardless of whether they are regular participants.

BFF hosts many gatherings, celebrations, and potlucks throughout the year to reflect on the work accomplished, practice sharing the bounty of food, and build friendships. A free harvest dinner at the

end of every year invites the public to engage with the project. Scheduled maintenance events are advertised using the positive-sounding term "work party," and they offer food and music to make them fun rather than tedious.

Leaders deliberately foster a sense of belonging to the project by regularly engaging with other volunteers and inviting them to take ownership of small projects. As volunteers see the fruits of their labour contribute to the success of the food forest, they become personally invested in the project and its vision.

BFF strongly emphasizes education. Signage throughout the site teaches about permaculture and ecology. Self-guided audio tours are available to visitors to learn more about the site and how the project works. Peer-to-peer learning is available for new gardeners to learn how to start a garden, how permaculture works, or how to otherwise get involved. This makes permaculture gardening less intimidating and promotes an inclusive learning environment.

BFF also runs a full calendar of workshops and teaching events. Local permaculture experts run a program that covers ecological theories and food forest techniques. Participants in the program are required to put their new knowledge to use by adopting a leadership position at future work parties. This improves the organization of events and also promotes sustainable leadership succession. In addition, volunteers and experienced members of the public can apply to host a training session on relevant topics such as collaborative social change, cooking, container planting, seed saving, how to start a garden, or tree pruning. Training sessions allow hosts to share their knowledge, empower volunteers to make informed food choices, and help participants to develop skills and expertise that support and strengthen the food forest.

**OUTREACH AND COMMUNICATION:** BFF hosts a website, manages social media accounts, and receives frequent media attention as one of the most well-known public food forests. Scheduled work and events are communicated via email, social media, the website, and on-site messaging boards. On-site signage communicates the project's vision, rules, and harvesting information.

## Conclusion

Beacon Food Forest is an excellent example of a well-planned and well-executed public food forest project. The design process was inclusive and meaningful for the community, creating a sense of ownership and establishing a shared vision. There is a strong working relationship between the community, government agencies, and design professionals. This has created an impactful, effective, and long-lasting project.

There are a variety of design elements beyond just the food forest, such as individual garden plots, food preparation spaces, and a kids' play area. This creates a multi-functional space that supports a variety of programs, projects, and events, and that will meet the diverse needs of the community for years to come.

The BFF community is very intentional about public engagement and inclusivity, which fosters a sense of belonging, breaks down cultural barriers, builds relationships, and promotes consistent participation. The project's educational focus empowers individuals, increases food and eco-literacy, and expands knowledge of sustainable food production.

BFF demonstrates the transformative power and positive impact that one relatively small, but well-implemented project can have – not only for the local community, but also for the global community, which has been influenced by the project through news and media connections. It serves as an excellent example of a successful food common, demonstrating the potential for public parks to become places that build community, foster learning, restore the land, and promote a more just and sustainable food system.



Fig. 6.2.9 A sense of camaraderie at work parties. (Credit: Jonathan H. Lee / Subtledream)



Fig. 6.2.7 The inclusive design process welcomes community participation. (Credit: Jonathan H. Lee / Subtledream)



Fig. 6.2.8 Work parties begin with a group yoga session. (Credit: Jonathan H. Lee / Subtledream)



Fig. 6.2.10 Work parties involve food, music, and celebration. (Credit: Jonathan H. Lee / Subtledream)



Fig. C.8.1 The original Kamloops Public Produce site at Victoria Street. (Credit: Elaine Sedgman)

## 6.3 KAMLOOPS PUBLIC PRODUCE

**Location:** Various locations in Kamloops, BC – original site at 121 Victoria Street in downtown Kamloops; later at McDonald Park at 151 McDonald Avenue.

**Established:** The original site operated from 2011 to 2013. The McDonald Park project was established in 2012.

**Size:** 121 Victoria Street lot: 15 x 120 ft, or 1,800 ft<sup>2</sup> (4.6 x 36.6 m, or 167 m<sup>2</sup>).  
McDonald Park: Park is 3 hectares; the Public Produce Demonstration Garden within the park is 1,600 m<sup>2</sup>.

**Owner:** The original site at 121 Victoria Street is owned by a private landowner. McDonald Park is a public park owned by the City of Kamloops.

### Sources

All information comes from Reid and Besanger (2018), Sedgman (2013), the Kamloops Food Policy Council official website (n.d.), and the Kamloops Public Produce official blog (2011-2013).

### Objectives:

The objectives of the original project at 121 Victoria Street were to:

- “Act as a demonstration project for public produce;
- Increase awareness about local food security and healthy food;
- Act as a tool to educate residents about growing edibles;
- Encourage the creation of municipal policy that would support urban agricultural initiatives on public and private land” (Reid and Besanger, 2018).

### The story

Kamloops, a small city located in south-central BC, was once known as an agricultural hotspot. By the 1990s, however, local food production had begun to

decline due to a shift in economic trends, and many people in Kamloops were unable to afford fresh, healthy food. This led to the development of the Kamloops Food Policy Council (KFPC) in 1995, one of the oldest independent food policy councils in Canada. In 2009, the City of Kamloops’ Social Plan acknowledged the need to increase urban agriculture and local food production in order to improve the city’s food security.

Ideas surrounding urban agriculture began to stir. Anonymous food activists engaged in guerrilla gardening by planting edible plants at City Hall – an effort that was not well received by the municipality. In 2011, the KFPC invited Darrin Nordahl – a landscape architect and promoter of edible landscaping on public land, or “public produce” – to speak at a workshop. The event included a visioning workshop, which gathered public input regarding the future of urban agriculture in the city. The event was inspirational and motivating, leaving participants with a desire for change in Kamloops.

Shortly thereafter, a building at 121 Victoria Street in downtown Kamloops was torn down, leaving a large, empty lot. Some residents and members of the KFPC met to discuss the potential for a “garden oasis” of public produce at the site. The site owner generously agreed to allow the group to use the lot for their project. A core working group called Kamloops Public Produce (KPP) was formed, and to gain public support, KPP formed official partnerships with two established local organizations – the Thompson Shuswap Master Gardeners Association and the KFPC – which helped them to successfully apply for a \$4500 provincial grant and provided sufficient funding to start the project. These partnerships provided KPP with valuable connections to organizations and agencies that could support the project – especially the City of Kamloops, with which KFPC had worked for many years. The partnerships also gave the project credibility, legitimacy, and name recognition when community support was sought through posters and canvassing.

Using these connections and community support, KPP’s project coordinator rallied volunteers to help plan out the project, draw the design, acquire materials, and build raised beds. In June 2011, volunteers planted the site with vegetables, herbs, and wildflowers. These volunteers included Master

Gardeners, members of the KFPC, community organizations, business owners and employees, students, and residents of varying ages, ethnicities, incomes, and backgrounds. Local organizations and businesses participated by donating resources such as plants, irrigation, and labour. This diverse group of people who would normally not interact built relationships and connections that helped to transform the space into a place.

The project was a huge success. The produce was harvested daily by community members, including low-income residents, chefs, volunteers, passersby, and homeless people. People used the space for lunch breaks, celebrations, events, and educational workshops. The space was well respected and there was no abuse, vandalism, or exploitation. Volunteers and visitors maintained the space communally. Entrance signage explaining the project's mission and guidelines helped create a common understanding of the project's significance and appropriate use of its space. The size and shape of the narrow, 15-foot-wide lot promoted high levels of interaction among participants.

The site's proximity to City Hall allowed government staff to watch the project progress and witness its success. KPP convinced them that public produce and edible landscaping could make a positive impact and beautify the city. Edible landscaping entered the lexicon of City staff and conversations began. In 2012, the City added edible landscaping into its budget and announced the development of a new, municipally led and maintained project at McDonald Park that would serve as a demonstration site for public produce. The project was established through a partnership between the City of Kamloops and Interior Community Services, a local non-profit agency.

Though the McDonald Park initiative was an exciting and unprecedented municipal project, its top-down approach and lack of community collaboration created problems. In particular, the City received \$5000 in funding and \$5000 worth of products through a grant from Scotts Canada, a pesticide producer associated with the well-known and controversial company Monsanto. The KFPC and the grassroots community that had embraced the sustainable, environmentally conscious values of KPP were deeply uncomfortable with this controversial association. In addition, since all community gardens in Kamloops are organic by

regulation, none of the Scotts Canada products could be used.

Even though the \$5000 grant was a very small contribution to the \$70,000 project, Scotts Canada was able to use this involvement to its advantage as a marketing opportunity. At the project's grand opening, staff and volunteers wore shirts with the Scotts Canada logo, and Scotts Canada products were set out on displays. This demonstrated "how corporate donations can often derail the focus and purpose of local public spaces as sites of community collaboration and engagement" (Reid and Besanger, 2018, p. 168). The aesthetic and tone of this arrangement emphasized a business partnership rather than a community effort to combat food security, which negatively affected the project's public perception (2018).

Despite these setbacks, the McDonald Park site still presented real advantages for a public produce initiative, including municipal support and resources, secure land ownership, and a beautiful, multifunctional park space with amenities. Over time, relationships with KPP, the KFPC, local Master Gardeners, and the public were restored; and with the support of these groups and the momentum originally cultivated by KPP, the park was able to develop into a vibrant hub for public produce. The garden has transformed into a permaculture demonstration garden and has expanded to include children's gardens, individual garden plots, a food forest, and a variety of learning programs for kids and adults. The park also hosts public events such as summer concert series, increasing public exposure to food production. Though staff are paid to operate the garden, volunteers and local organizations are also involved in its operation, fostering a sense of community ownership.

What started as a small pilot project in a vacant lot on Victoria Street has evolved into a local movement known as Kamloops Public Produce. Although the original project on Victoria Street was forced to move to new site on Elm Avenue to make room for a private development, the movement has continued to flourish and expand. In addition to the McDonald Park Public Produce Demonstration Garden, other projects fueled by KPP include edible landscaping at Kamloops City Hall by staff, a public orchard at Riverside Park, and public produce planters initiated by many local businesses.

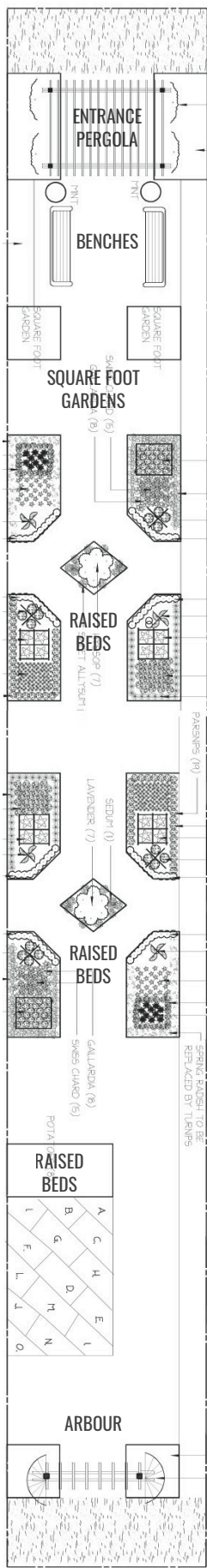


Fig. 6.3.2 Volunteers building planters. (Credit: Elaine Sedgman)



Fig. 6.3.3 Bringing soil to the site. (Credit: Elaine Sedgman)



Fig. 6.3.4 A brightly painted trellis marks the entrance to the site. (Credit: Elaine Sedgman)



Fig. 6.3.5 Cyclists stop by to pick some greens. (Credit: Elaine Sedgman)

Fig. 6.3.6 Concept plan for 121 Victoria Street. (Credit for base maps: Elaine Sedgman)



Fig. 6.3.7 McDonald Park map. (Map data: Google © 2021 Maxar Technologies)



Fig. 6.3.8 McDonald Park's public produce demonstration garden with the park entrance plaza beyond. (Credit: Elaine Sedgman)



Fig. 6.3.9 Edible landscaping at McDonald Park. (Credit: Elaine Sedgman)



Fig. 6.3.10 McDonald park has many other amenities. (Credit: Kamloops North Shore Business Improvement Association)

## Design

Design elements at 121 Victoria Street site:

- Raised planting beds made of wood and painted with bright colours, filled with annual vegetables and herbs, labeled with informational plant signage
- Pergola and arbour at each entrance
- Informational/welcome signage at entrance
- Benches made from salvaged materials and painted in bright colours

Design elements at McDonald Park:

*Public Produce Edible Demonstration Garden:*

- Permaculture / edible landscaping garden with annuals and perennials
- Food forest
- Pollinator gardens
- Children's gardens
- Individual rented garden plots, fenced
- Composting bins, water connections, and storage shed
- Gathering space with gazebo

*Park:*

- Entrance plaza with pavilion structure and ornamental gardens
- Gazebo
- Open lawn / fields
- Paved pathways
- Site furniture including benches, picnic tables, trash receptacles, and lighting
- Washrooms and change rooms building
- Water fountain
- Playground
- Wading pool and splash pad
- Dog run
- Basketball and tennis courts

## Management

**GOVERNANCE:** The original project at 121 Victoria

Street was governed by the core working group, which consisted of members of the KFPC, Master Gardeners, the Kamloops Community Gardens coordinator (who was also a landscape architect), a professor, visual arts students, and Kamloops residents. The core working group partnered with the Kamloops Public Produce working group and volunteers, the KFPC, and the Thompson Shuswap Master Gardeners Association. The project was entirely grassroots-based and volunteer-run. The site was situated on vacant land provided for free by the landowner until 2013 when a development project forced the project to move to a new site. Since then, KPP has transformed into a movement rather than a group of people, and it is more formally governed by the KFPC and informally operated by dedicated volunteers.

Situated on city-owned land, the McDonald Park project is governed by a partnership between the City of Kamloops and the local, non-profit agency Interior Health Services. The public produce garden is run by the city's Community Garden Coordinator, a trained landscape designer. Though the project is officially run by the City, the local Master Gardeners group and the KFPC have strong ties to the project and are heavily involved in its programming. The project is indirectly affiliated with the larger KPP movement.

**LABOUR:** The original KPP was entirely volunteer run. Volunteers were contacted and invited to participate via connections of the KFPC and Master Gardeners. Other than the big public planting day in June of 2011, the work did not appear to be organized and was rather done on a casual, voluntary basis.

The work at McDonald Park is organized by the Community Garden Coordinator, a paid staff member. Volunteers participate in maintenance of the public produce garden and the community garden plots are maintained by individual renters. Programs are largely run by volunteers such as Master Gardeners, who use the site to run workshops. Other park maintenance is done by hired park staff.

**FUNDING:** The original KPP project was funded entirely through grants, private donations, and in-kind donations of materials and labour. It was a low-budget grassroots project that made use of recycled and scavenged materials.

The McDonald Park project was originally funded by grants, including the controversial Scotts Canada

grant, and its ongoing operation and maintenance are funded by the City of Kamloops' budget for edible landscaping and public parks.

## Public engagement strategies

**COLLABORATIVE DESIGN PROCESS:** Volunteers were invited to participate in the planning and design of the original KPP project. A comment/suggestion box at the site allowed visitors and volunteers to share their feedback for the garden and influence its design. Public art installations created by residents, such as a mural, were incorporated into the design. This created a strong sense of community ownership. The project at McDonald Park, however, does not appear to be designed through a collaborative process, although the public was invited to participate in the first planting.

**EVENTS AND EDUCATION:** The original KPP project hosted a number of public events to promote community engagement, including public planting events every June, potluck feasts, and educational workshops. These events served to create a sense of belonging and build relationships. Educational signage, such as how to harvest or what bugs are helpful or harmful, worked to increase food and eco-literacy.

The McDonald Park project regularly hosts horticultural and educational programming for kids and adults, led by the Master Gardeners Association and the KFPC. The non-edible areas of the park host large public events, such as music festivals, which increase visibility and public interaction with the public produce project.

**OUTREACH AND COMMUNICATION:** The original KPP project was documented on a blog and on the KFPC's official website. Information about the project was distributed at events and festivals to encourage public participation. Informational signage explained the project's vision and rules, which promoted cooperation. KPP also initiated an "Adopt an Edible" program, where volunteers provided a small planter with edible plants to local businesses, which encouraged conversations between business owners and customers about public produce. The initiative did not last more than a couple seasons, but many businesses still maintain their edible planters.

The McDonald Park project and its events and programming are displayed on the KFPC website. The project does not appear on the City's official website.



Fig. 6.3.11 Volunteers regularly shared meals made from the produce. (Credit: Elaine Sedgman)



Fig. 6.3.12 Enjoying the community potluck. (Credit: Elaine Sedgman)



Fig. 6.3.13 Team spirit. (Credit: Elaine Sedgman)



Fig. 6.3.14 Signage explains how to harvest different plants. (Credit: Elaine Sedgman)

Advertising and outreach for food-related events appear to be managed by volunteer associations rather than the City.

## Conclusion

The story of Kamloops Public Produce demonstrates the benefits and challenges of bottom-up and top-down approaches to food commons projects. The grassroots approach at the original KPP site gained community support organically and created momentum among community members to rally together around food security. Project participants felt a strong sense of ownership and belonging to the project. However, the project was limited by the insecurity of borrowed land, a small budget, and a lack of on-site amenities, and was eventually forced to relocate due to new private development. The uncertainty regarding securing land for the following year also limited what kinds of plants could be used, meaning that perennial trees and shrubs were not feasible.

The McDonald Park project seemed to piggy-back off the momentum gained through KPP, which might have been the saving grace that allowed it to recover and thrive despite the controversial situation with Scotts Canada. Had KPP not done the community-level groundwork to generate support for public produce in the first place, the McDonald Park project might not have succeeded. This demonstrates the importance of community buy-in and participation, regardless of whether the project is run by the community or the municipality.

Though the McDonald Park project was not designed through a collaborative process, the park's amenities and access to municipal resources created a functional, secure project that is still active today. The security of land ownership allowed the project to expand to include a perennial food forest, and access to existing park amenities such as washrooms, playgrounds, and water fountains is something that temporary, grassroots projects on vacant land could never hope to acquire. In the end, the McDonald Park project eventually found a successful balance between municipal leadership and community support: the City provides staff, resources, and amenities, and the community organizations provide volunteer labour, programming, and public engagement efforts. This

balanced partnership is key to the long-term success of public food commons projects.

Lastly, KPP demonstrates the potential for one successful project to catalyze change at a larger scale. What started on a 15-foot-wide lot led to a movement that created other public produce projects and convinced the municipality that food commons projects were worth their time, effort, and money. Ironically, the movement began with subversive guerilla gardening at City Hall, which was angrily uprooted by staff, and ended with the City willingly transforming their garden beds into an edible landscape. Now, nearly ten years after the original KPP project, the City of Kamloops has a decade of experience with public food commons projects, making it a leader and an example for other Canadian cities seeking to explore similar initiatives.



Fig. 6.3.15 Edible landscaping at City Hall, inspired by KPP. (Credit: Elaine Sedgman)



Fig. 6.3.16 Front planters with public produce at the Kamloops Art Gallery and Library, inspired by KPP. (Credit: Elaine Sedgman)



Fig. 6.4.1 Trees and tall grass prairie at Henteleff Park. (Credit: Leighton Janis)

## 6.4 HENTELEFF PARK

**Location:** 1964 St. Mary's Road, Winnipeg, Manitoba

**Established:** 2002

**Size:** 40 acres

**Owner:** City of Winnipeg

### Sources

All information comes from Kramer (2019), the Henteleff Park official website (n.d.) and Facebook page (n.d.), and Friends of Henteleff Park newsletters and annual reports available on the official website.

### Objectives

The objectives of Henteleff Park are to:

- Preserve the land's natural beauty and return it to its pre-colonial state;
- Educate the public about local natural and cultural history; and,
- Promote engagement with the site and within the community.

### The story

Long before Henteleff Park became a public park, the site was a richly forested riparian habitat along the Red River. A Métis family first purchased the site in 1873, and then in 1923, it was bought by the Henteleff family who had newly immigrated to Winnipeg to escape persecution in Russia. The Henteleffs cleared the site of trees and brush to make way for an extensive farming operation and market gardens. The market gardening operation continued until 1967, when the City of Winnipeg expropriated all but five acres of the land as part of their city-wide "greenbelt" initiative. However, this vision was never realized, and in 1991 the site was converted into a tree nursery.

In 1996 when the property was re-zoned for commercial and residential use, neighbourhood citizens became concerned about the fate of the greenspace. The remnant areas of riparian habitat

were home to a variety of wildlife and plant species, and development along the river could harm both the habitat and the river that was protected and buffered by that habitat. For six years, a group of dedicated volunteers worked to convince the City to re-zone the land as a park. In 2002, their efforts were finally successful, and the site was re-zoned as a passive park, defined as "a place for the public to enjoy quiet reflection and low impact recreation in a natural setting" (Henteleff Park Foundation, n.d.). The group formed a charitable organization called Henteleff Park Foundation (HPF), which formed an official partnership with the City of Winnipeg to jointly manage the park through a cooperative land use agreement. The City would maintain the land as a public park, providing the resources and labour similar to any other city park in Winnipeg, and HPF would lead any additional reforestation efforts, site-specific projects, and programming.

Since 2002, HPF has worked hard to restore riparian habitat and promote public engagement and education. Remnant shelterbelts from the tree nursery were protected and incorporated into the reforested areas, leaving traces of the site's history. In 2007, HPF initiated a tall grass prairie restoration project on the site, provoking more interest and conversation about local ecology and natural history. In 2016, the HPF opened an interpretive centre near the park entrance, complete with interpretive signage and seating for events and educational workshops.

Through volunteer efforts over the last decade, the community has planted over 5,000 trees and shrubs and established over three kilometres of trails through the forest. The annual public tree planting event in June is key to the park's ongoing reforestation efforts. Every spring, HPF invites volunteers to participate in a day of tree and shrub planting with coffee, snacks, music, and conversation. The event is as much about community building and environmental activism as it is about work. The events are well attended by community members of all ages, from toddlers to adults, as well as members of local naturalist and horticultural organizations, Henteleff Park staff and board members, and municipal, provincial, and federal government representatives. The trees, shrubs, and other materials such as mulch, newspaper, soil, and water tanks are obtained through grants and donations. Reforestation efforts have enhanced

riparian habitat, protected the river, and sequestered thousands of pounds of CO<sub>2</sub> from the atmosphere, in addition to building community around a common purpose.

In the future, HPF hopes to continue its habitat restoration efforts as well as develop an arboretum, revive historic market gardening through on-site food production and community gardens, enhance trail systems and connections including winter skiing trails, and repair and stabilize the riverbank to mitigate erosion issues. With consistent volunteer involvement, a knowledgeable and passionate board, and support from all three levels of government, Henteleff Park is poised to make a positive impact on its local ecosystem and the Winnipeg community for years to come.

## Design

Design elements include:

- Restored riparian forest with native trees and shrubs
- Tall grass prairie habitat area
- Interpretive centre with pavilion, interpretive signage, informational panels, supply/storage areas, landscaping, and seating
- Storage shed with decorative panels showing traditional farming tools
- Benches and accessible picnic tables
- Paved paths, informal hiking trails, and winter trails (skiing and snowshoeing)
- Interpretive/educational signage with information about ecosystems and animals found in the park

- Community bulletin board
- Split-rail wood fencing

Future elements:

- Community gardens and market gardens
- Arboretum
- Riverbank stabilization

## Management

**GOVERNANCE:** Henteleff Park owned by the City of Winnipeg and cooperatively managed by HPF and the City through a “Development and Management Agreement.” HPF leads the park’s programming and reforestation efforts, and the City supports the foundation by providing resources, participating in events, and collaboratively planning the future of the park with HPF.

The HPF board is divided into finance, site development, interpretive centre, and marketing and communications subcommittees. Leadership positions within the board include president, vice president, treasurer, site supervisor, secretary, directors, volunteer coordinator, communications managers, and officers. The board meets eight to ten times per year.

**LABOUR:** Labour is divided between the City of Winnipeg and the Henteleff Park community, including the board, hired staff, and volunteers. The City of Winnipeg provides services similar to any City of Winnipeg park, including mowing the lawn areas, grass paths, and “rough cut” areas along the road; herbicide application for troublesome areas, particularly those ravaged by invasive species such as burdock, thistle, tufted vetch, reed canary grass, leafy spurge,



Fig. 6.4.2 Henteleff Park map. (Map data: Google © 2021 Maxar Technologies)



Fig. 6.4.3 Visitors enjoying the forest and trails.



Fig. 6.4.4 Tall grass prairie restoration. (Credit: Leighton Janis)



Fig. 6.4.5 Interactive signage with flip books.



Fig. 6.4.6 Educational signage explaining riparian forest habitat.

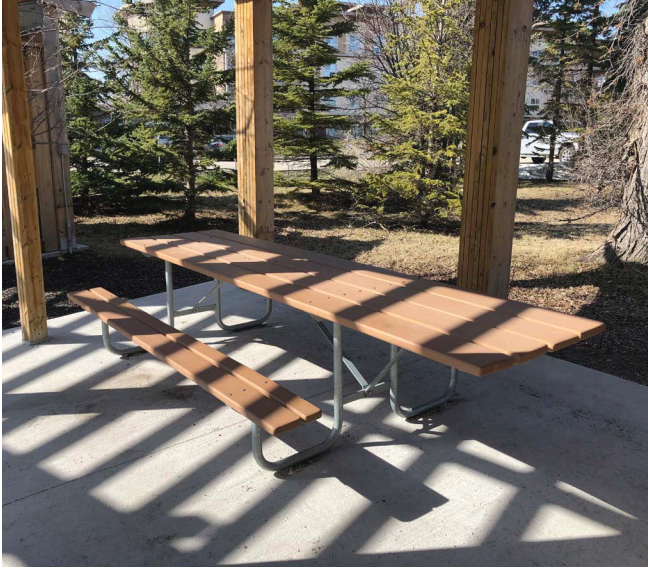


Fig. 6.4.7 Wheelchair-accessible picnic table.



Fig. 6.4.8 A decorative panel on the storage shed teaches about simple farming tools.

buckthorn, and purple loosestrife; and maintaining standard park elements such as parking areas, trash cans, and fence posts.

The community regularly participates in site maintenance and development through volunteer efforts, particularly the June planting events. There is occasional volunteer involvement by non-profit groups and organizations, such as the New Directions youth and young adults program, which helped replant some nursery beds in the summer of 2020. Volunteer work is organized and overseen by the volunteer coordinator and the site supervisor. HPF board members also volunteer at events and help with site maintenance throughout the year.

In addition to volunteer efforts, the HPF typically hires four summer staff every year to plant, water, and maintain the new trees and shrubs, remove invasive species and weeds, tidy the site, mulch the trails, maintain site elements such as the toolshed, benches, and signage, and map tree species on-site to anticipate issues with pests such as Dutch Elm Disease and the Emerald Ash Borer.

**FUNDING:** The City of Winnipeg provides Henteleff Park with basic funding similar to any City of Winnipeg Park. The park also receives annual funding from all three levels of government, including the City of Winnipeg's Land Dedication Reserve Fund. However, this funding is not sufficient to sustain HPF's various projects and initiatives, and so the foundation must apply for grants, organize fundraisers, and solicit private donations. The summer staff are funded through grants such as the Canada Summer Jobs program, the Manitoba Green Team program, and the TD Friends of the Environment grant. Trees and supplies are either purchased, donated by local nurseries, or supplied through the City of Winnipeg's Natural Services Branch.

## Public engagement strategies

**COLLABORATIVE DESIGN PROCESS:** The park is designed collaboratively between the City of Winnipeg and HPF. Every year, representatives from the City and HPF do a site walk-through and plan out the future short-term and long-term projects at the park. For instance, in 2020, the City acquired a ten-acre plot of land immediately west of Henteleff Park, which will increase the park's area and also connect it to the larger park

system in Winnipeg. City and HPF representatives met to discuss initial choices and plans for how to expand and connect the park to this new space.

Although the general public is not explicitly included in the design process, volunteers are able to join the HPF board if they want to commit to the ongoing planning and design of the park. The Annual General Meeting also offers an opportunity to gain public feedback about the park. In addition, the regular presence of board members on site interacting with volunteers and visitors creates opportunities for people to voice their opinions and become more involved in planning the park's future.

**EVENTS AND EDUCATION:** The annual June planting event is the most well-attended public event at Henteleff Park. In addition to the work performed, the event is intended to build relationships by providing refreshments and music. When people plant the trees and shrubs themselves and watch them grow over time, they can gain a sense of belonging and ownership of the park. In addition to the June planting event, HPF hosts an annual Fall Fest, a casual public gathering to celebrate the end of the season with snacks, coffee, conversation, and music.

Education is a strong focus at Henteleff Park. The interpretive centre was built to accommodate educational workshops and lectures. Interpretive signage throughout the site educates the public about the site's cultural and natural history. The June planting teaches volunteers how to properly plant and maintain a tree and familiarizes them with native species. The park itself teaches about the site's history and ecology by restoring natural habitats and preserving remnants of the prior tree nursery. HPF offers guided tours of the site through public events or private bookings.

**OUTREACH AND COMMUNICATION:** HPF maintains a strong online presence through a website and multiple social media accounts. The general public can communicate directly with HPF via email or social media. Events are advertised online, through social media, communicated via email, and posted on the bulletin board on-site. HPF sends out annual newsletters and site development reports to members of the Friends of Henteleff Park group, donors, and interested members of the public. The newsletters and reports are also posted on their official website.

## Conclusion

Henteleff Park sets a precedent in Winnipeg for cooperative, community-government management of a public park. The partnership arrangement – wherein the City provides basic park resources, funding, and support, and the community provides volunteer labour, programming, and project leadership – has proven to be successful and feasible for nearly two decades, suggesting that this management model could be replicated for other Winnipeg public parks.

The consistent volunteer participation and interest in Henteleff Park shows that members of the Winnipeg community have a sustained interest in environmental activism and community-based projects. Through the annual June planting events, the park has gained an average of around 250 trees per year through volunteer efforts alone. This indicates that the Winnipeg community may be able to support similar projects in the future, such as a public food forest.

Lastly, the project suggests what to expect in terms of volunteer participation and ability for other similar projects. At the 2019 June planting event, for instance, 55 people were able to plant 305 trees and shrubs, or an average of 5.5 plants per person. This offers a rough participation target for a future food forest project, and it indicates how much the food forest could reasonably expand each year. This information is useful for creating project timelines and phasing.



Fig. 6.4.9 The interpretive centre is used for teaching and events.



Fig. 6.4.10 Public invitation to visit the new interpretive centre.



Fig. 6.4.12 A bulletin board provides a space for announcements and other community messages.



Fig. 6.4.13 Community-planted trees are caged and flagged.

## 6.5 CONCLUSION

The case studies of Beacon Food Forest, Kamloops Public Produce, and Henteleff Park illustrate the processes, methods, and design elements that are important for establishing a successful public food forest in a Winnipeg public park. First, these projects demonstrate the importance of establishing strong community support prior to initiating a public food forest, as well as a commitment to ongoing community engagement through education, events, and outreach. This indicates that for my project, the implementation plan and community engagement processes are just as important as the design itself.

Second, the case studies offer insight into how a project can be managed collaboratively between communities and professionals/governments. All three projects more or less operate on a model where the community takes the lead and the professionals/governments take a more supportive role. The management model used at Henteleff Park is especially relevant for my design, which will also be located at a public park in Winnipeg. This will affect my project's implementation plan.

Third, the case studies demonstrate what design elements are important for community-based food commons initiatives. Though each project had

a different focus and different design elements, they all emphasized gathering spaces, rest areas, signage, educational elements, and support spaces for community events and programs. They also considered the aesthetic quality of various elements, demonstrating an understanding of the importance of aesthetic considerations for public greenspaces. This will influence my project's design.

Lastly, the case studies shed light onto what the implementation process might look like. Community-based projects are not implemented in the same way as typical landscape projects where a contractor is hired to complete the project within a set budget and schedule. All three of these projects were largely dependent on donations/grant funding and volunteer labour, which makes the implementation process and timeline much less predictable. This will be an important and challenging factor for my design, as I must consider how the project might be phased and how it might look between unfinished phases. In addition, the emphasis on volunteer labour limits the complexity of constructed elements, which means that there should be a clear understanding of which elements are to be constructed by professional/contracted labour and which are best suited for volunteer labour. This will be reflected in my project's implementation plan.



**CHALMERS  
NEIGHBOURHOOD**

**TALBOT-GREY  
NEIGHBOURHOOD**

**SITE:  
EL TASSI PARK**

**RED RIVER**



# 07 SITE ANALYSIS

## 7.1 INTRODUCTION

The site chosen for a public food forest design is Abdo and Samira El Tassi Park (“El Tassi Park”), a 3.01 hectare greenspace located at 100 Elmwood Road between Chalmers and Talbot-Grey neighbourhoods, within the Elmwood-North Kildonan ward of Winnipeg, Manitoba.

This chapter analyzes the site’s context and the site itself. The context analysis section maps social data (diversity, income, transportation use), food access (grocery stores, community gardens, edible trees in parks), park trees at risk, circulation, and neighbourhood features. (Unfortunately, the latest detailed statistics on diversity, income, and transportation use at the neighbourhood level are from the 2006 Census. While this data is fifteen years old, it still offers a general idea of the neighbourhoods’

distinct characteristics. More recent social data is not useful because it lumps these neighbourhoods in with larger areas.)

The site analysis section provides an overview of the site’s history and inventories its features and functions, including important views and circulation connections.

The goals of this chapter are threefold:

1. Understand the site and its context.
2. Justify the selection of El Tassi Park for a public food forest.
3. Identify key strategies and implications for design.

The chapter concludes with a list of the key takeaways of the analysis as related to these goals.

## 7.2 CONTEXT

### Geological, climatic, and ecological context

El Tassi Park is located in Winnipeg, Manitoba, a mid-sized city in south-central Canada. Winnipeg is situated on what was once the bottom of prehistoric glacial Lake Agassiz, which explains its flat topography and its fine clay soils. The Red River flows into this clay plain from the south and the Assiniboine River from the west, with the two rivers meeting at a gradual low point in central Winnipeg. The bedrock of the Manitoban plains is predominantly calcareous, lending to pH neutral to alkaline soils. The black soil is rich, fertile, and excellent for growing crops.

Winnipeg has a humid continental climate with temperatures from -40 degrees Celsius in winter to +30 in summer. It receives an average of 419 mm of rainfall annually, with June being the wettest month (Government of Canada, 2019). Winnipeg's Plant Hardiness Zone falls between 3a and 3b. The growing season lasts from late May to late September. Prevailing winds come from the northwest.

Winnipeg belongs to the Prairies ecozone, which stretches all the way west to Alberta and south to Texas. Within the Prairies ecozone, Winnipeg is situated in the Lake Agassiz Plain ecoregion. Dominant habitats native to this ecoregion include tall grass

prairie, aspen parkland, and riverbottom forest.

Tall grass prairie contains a wide variety of tall perennial grasses, wildflowers, and shrubs situated on rich, fertile soils. Dominant plants include big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), Indian grass (*Sorghastrum nutans*), and switch grass (*Panicum virgatum*). Prior to European settlement, the prairie was sustained by bison grazing patterns and a fire disturbance regime. Most of the tall-grass prairie has been tilled and exploited for growing annual crops, evident in the gridded agricultural landscape of southern Manitoba.

Aspen parkland contains mix of forested areas and openings with prairie plants and shrubs. The dominant tree species is trembling aspen (*Populus tremuloides*), which can be found in pure stands or mixed with bur oak (*Quercus macrocarpa*) and Manitoba maple (*Acer negundo*). Aspen-oak forests are found on drier sites.

Riverbottom forest is found near riverbanks and floodplains and typically contains flood-tolerant plants. Dominant trees include green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), basswood (*Tilia americana*), and Manitoba maple (*Acer negundo*). Many of the elm and ash trees found in Winnipeg's streets and parks were originally taken from riverbottom forests; however, much of this urban canopy is now at risk due to Dutch Elm Disease and Emerald Ash Borer.

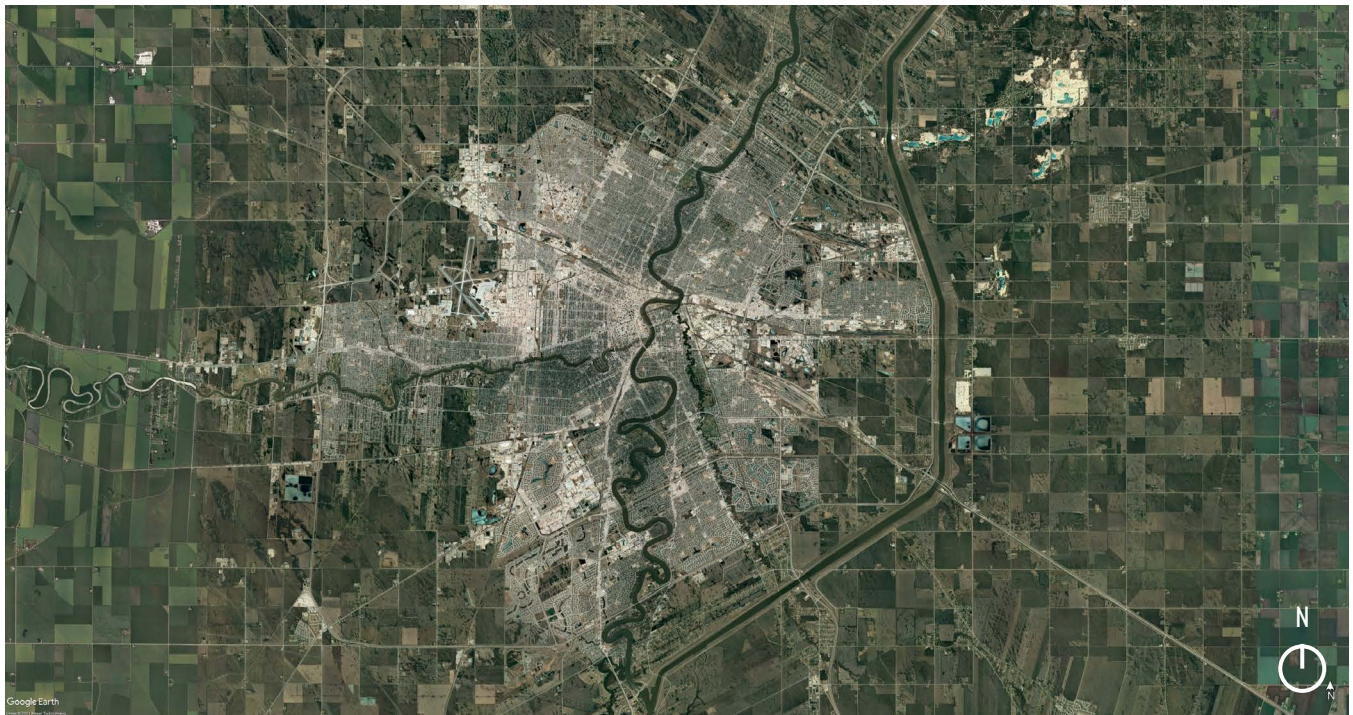


Fig. 7.2.1 Aerial photo of Winnipeg, Manitoba - note the agricultural grid outside the city limits. (Map data: Google © 2015 Landsat / Copernicus)

## Site context

- El Tassi Park is located between Talbot-Grey and Chalmers neighbourhoods, next to the Red River, and close to downtown.
- Chalmers is an inner city neighbourhood. Talbot-Grey falls just outside the inner city limits.
- The Northeast Pioneers Greenway (colloquially known as the Gateway Trail) terminates at the site.

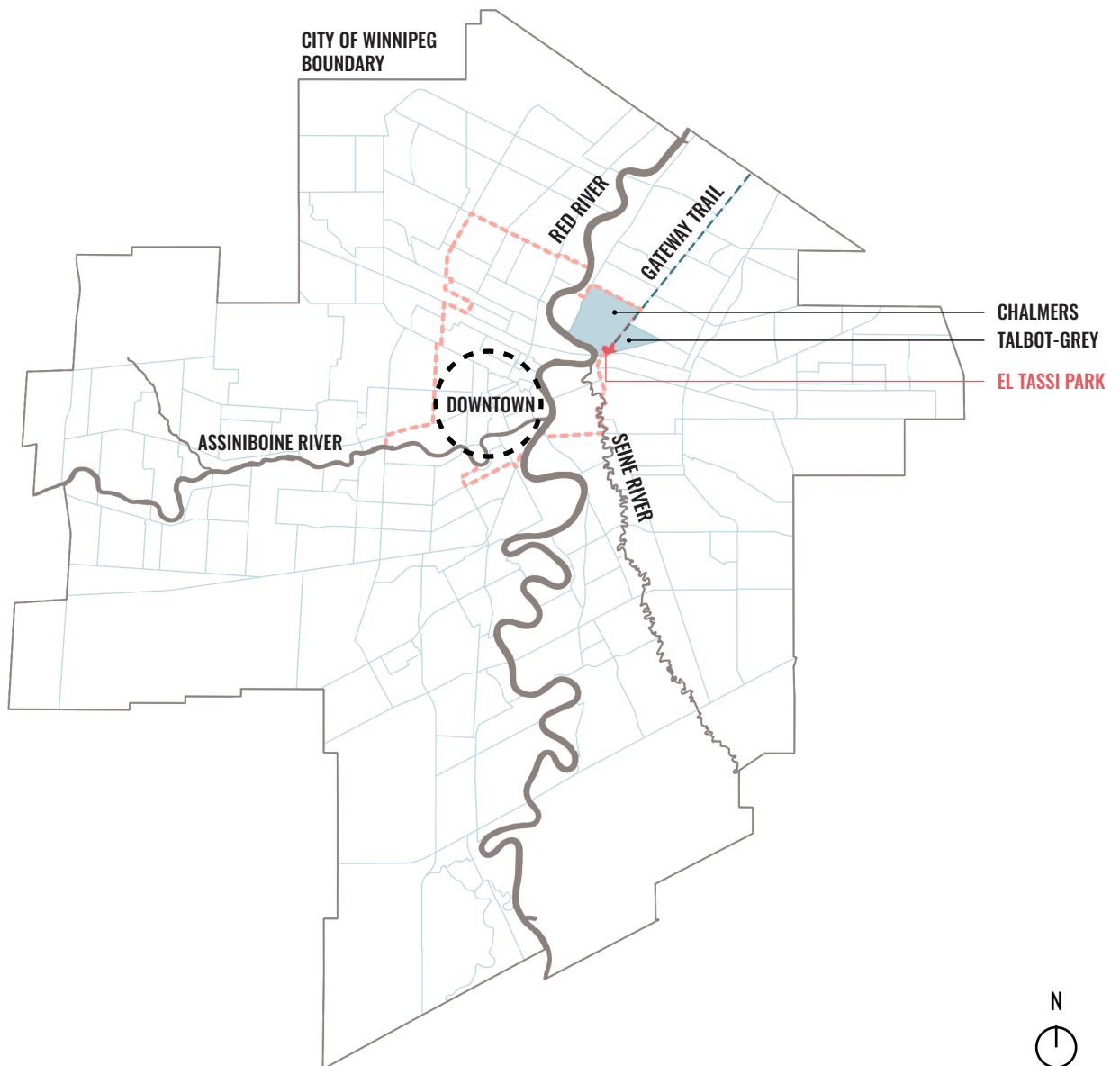


Fig. 7.2.2 Site context.

## DIVERSITY: Immigrants

- 15% of residents in Chalmers and Talbot-Grey were born outside of Canada.
- Immigrant populations in Chalmers and Talbot-Grey are lower than the Winnipeg average of 19%, but higher than many other neighbourhoods.
- Chalmers residents represent over 32 different countries. The most common countries of origin are the Philippines (8%), Vietnam (7%), and Poland, Germany, and the UK (5% each).
- Talbot-Grey residents represent over 13 different countries. The most common countries of origin are Croatia (15%), South Korea, the Netherlands, and the UK (9% each).

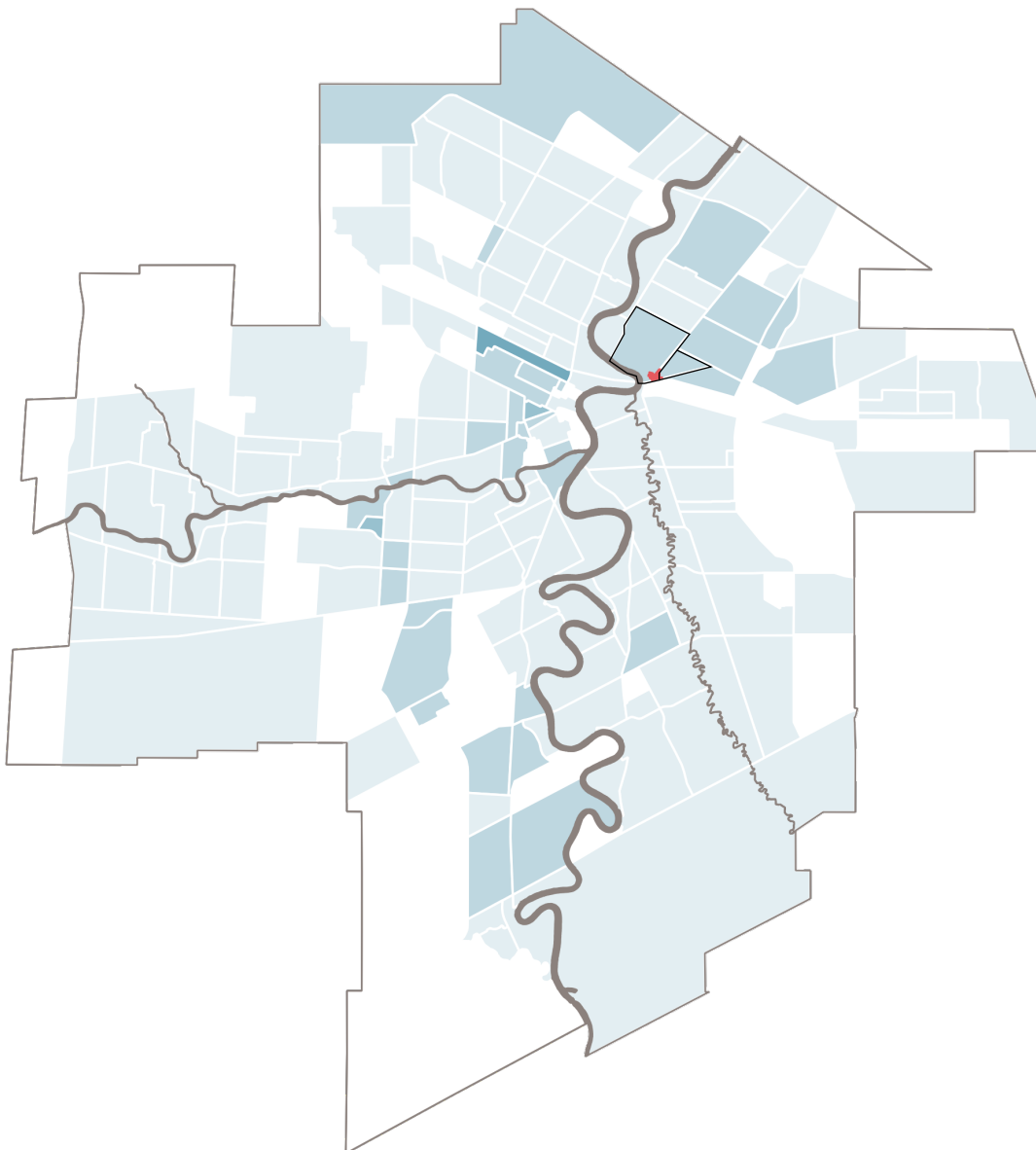
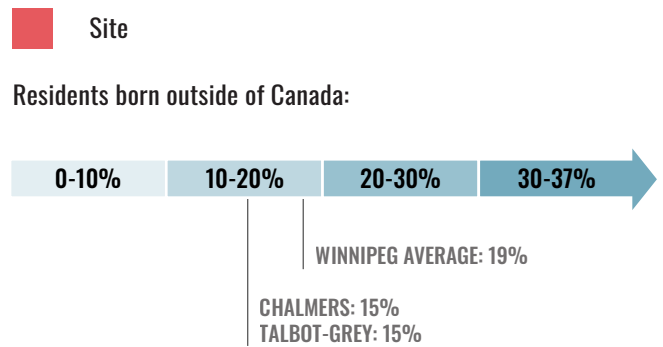


Fig. 7.2.3 Immigrants.

## DIVERSITY: Indigenous identity

- Both neighbourhoods have higher percentages of Indigenous residents compared to the Winnipeg average of 10%.
- 13% of Talbot residents identify as Indigenous. Of that population, 58% identified as Métis, 24% identified as North American Indian, and 18% identified as other.
- 22% of Chalmers residents identify as Indigenous. Of that population, 66% identified as Métis, 29% identified as North American Indian, and 5% identified as multiple identities or other.

 Site

Indigenous identity:

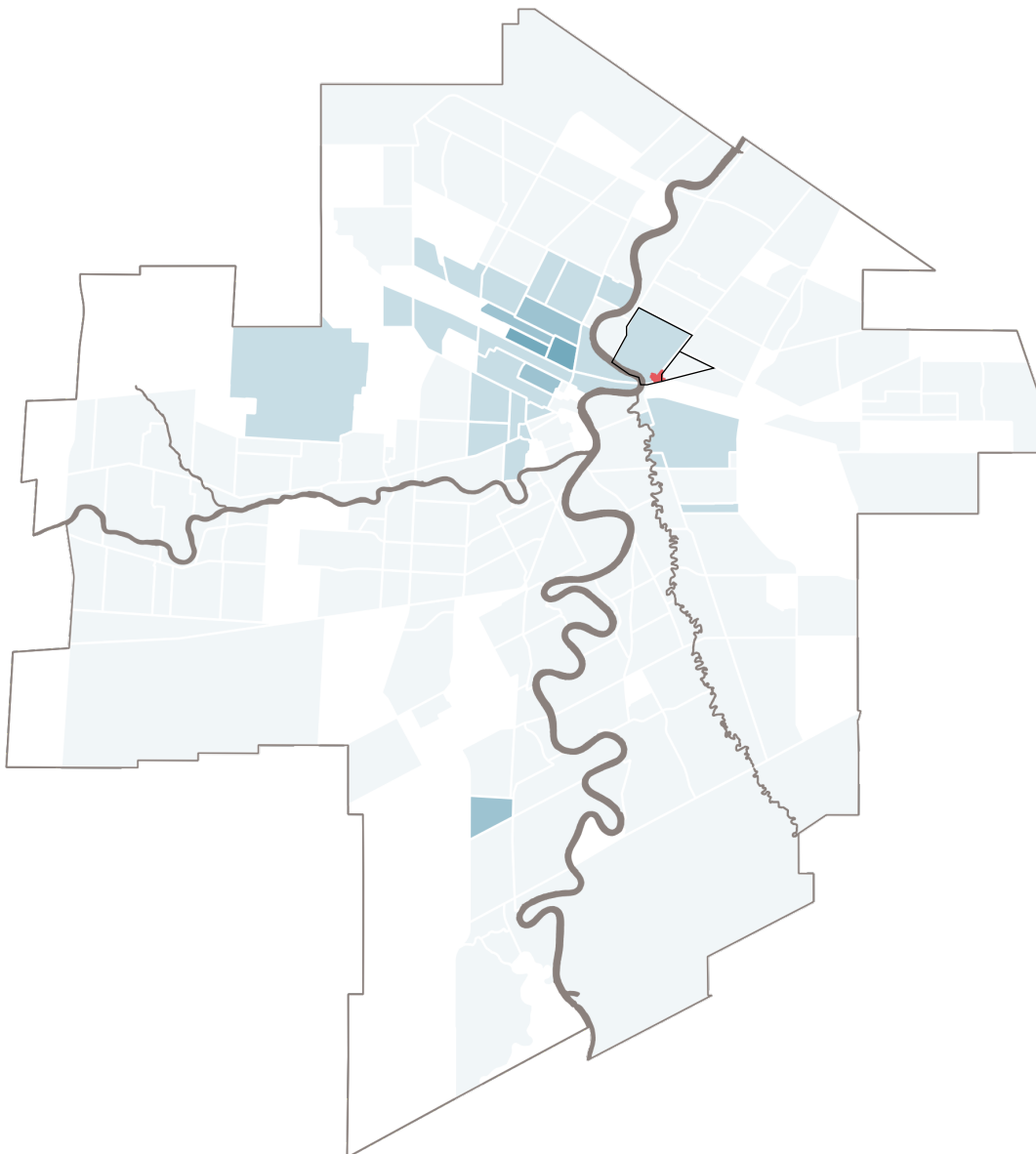
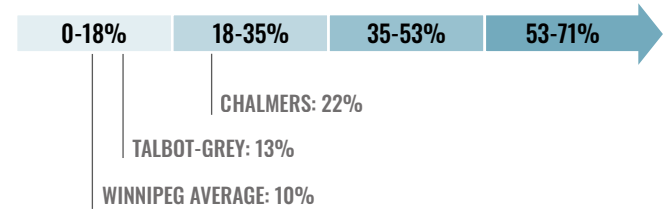


Fig. 7.2.4 Indigenous identity.

## INCOME: Median income

- The median income in Chalmers and Talbot-Grey is lower than the Winnipeg average of \$26,334.
- In Chalmers, the median income is \$22,034, with an employment rate of 96%.
- In Talbot-Grey, the median income is \$23,221, with an employment rate of 94%.

■ Site

Median individual income, after tax:

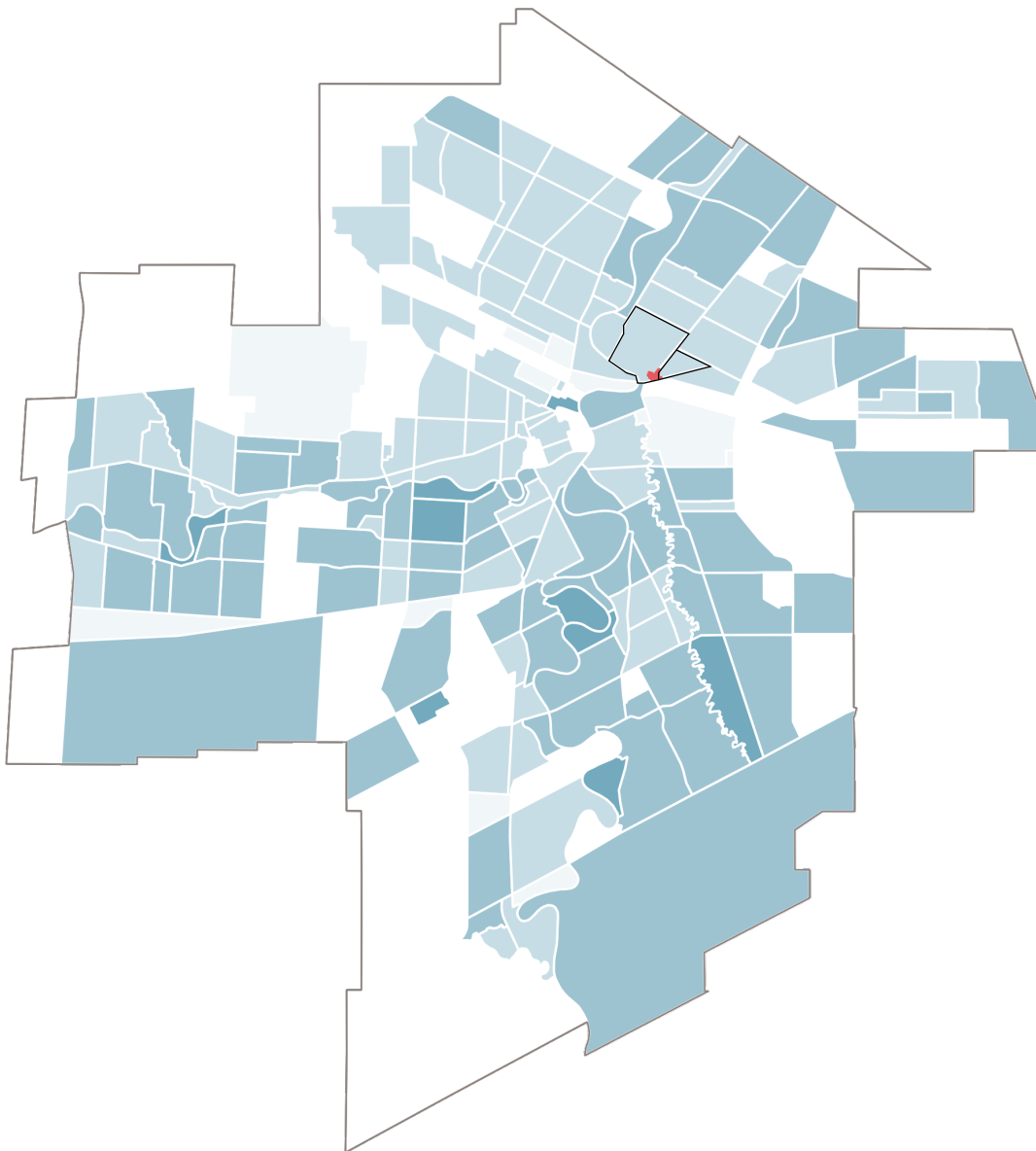
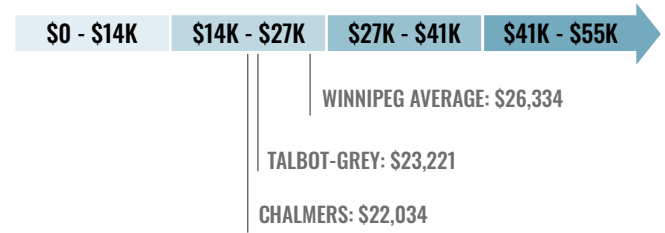


Fig. 7.2.5 Medium income.

## INCOME: Low-income families

- A family qualifies as low-income if they fall below the Low Income Cut-off (LICO), which is an income level below which a family will likely spend 20% more than average families on basic necessities like clothing, shelter, and food. The LICO is adjusted by family size.
- Both neighbourhoods have a higher percentage of low-income families compared to the Winnipeg average of 11%.
- In Chalmers, 25% of families are low-income, and 53% of children live in low-income households.
- In Talbot-Grey, 17% of families are low-income, and 48% of children live in low-income households.

■ Site

Percentage of low-income families (after tax):

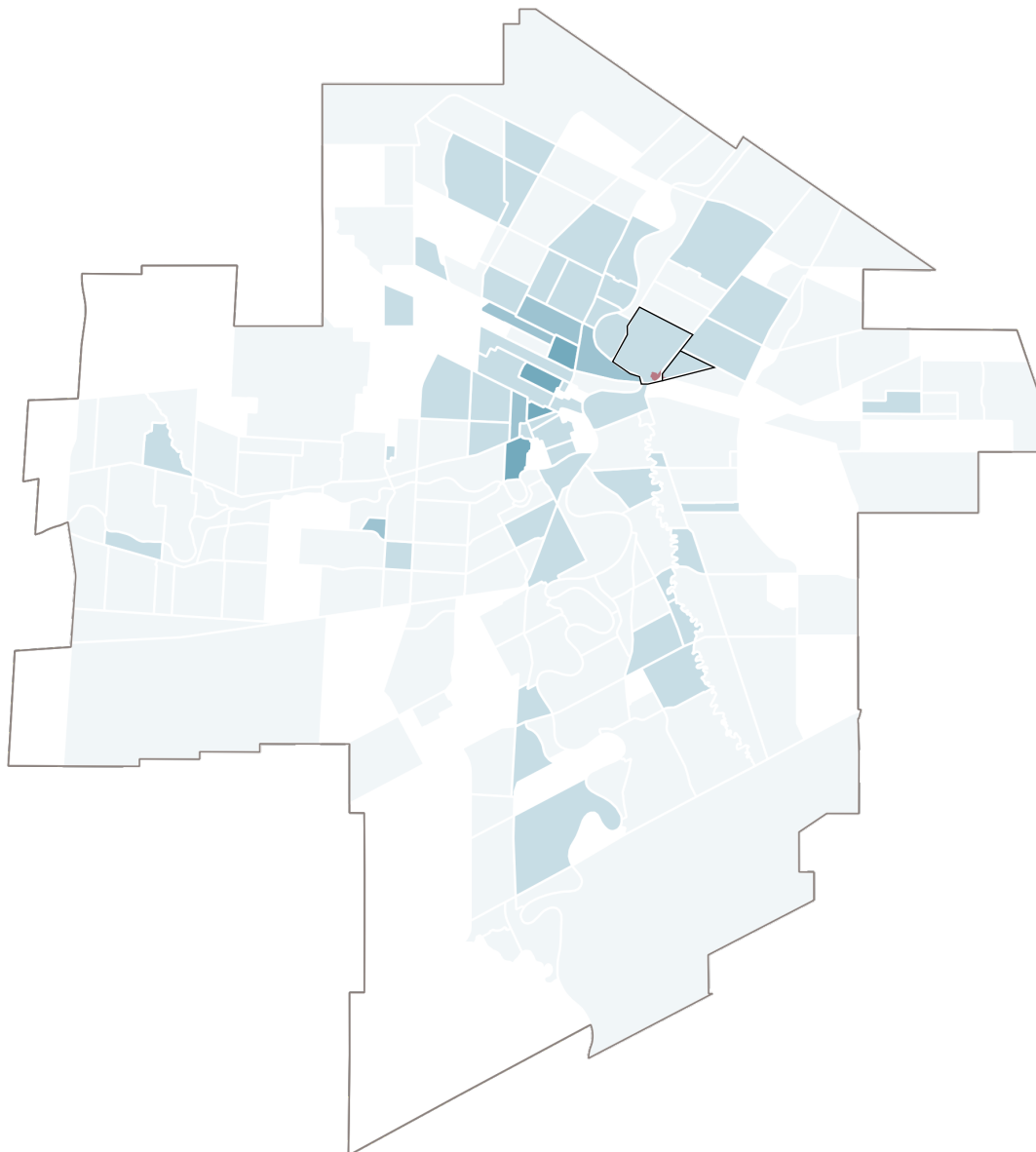
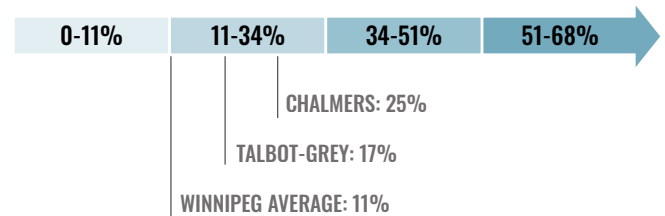


Fig. 7.2.6 Low-income families.

## Transit and pedestrian transportation

- 38% of Chalmers residents do not use a personal vehicle for most of their transportation needs. This is higher than the Winnipeg average of 32%.
- 31% of Talbot-Grey residents do not use a personal vehicle for most of their transportation needs. This is on par with the Winnipeg average.

■ Site

Percentage of the population relying on public transit, bicycle, taxi, carpooling, or walking as their primary means of transportation:

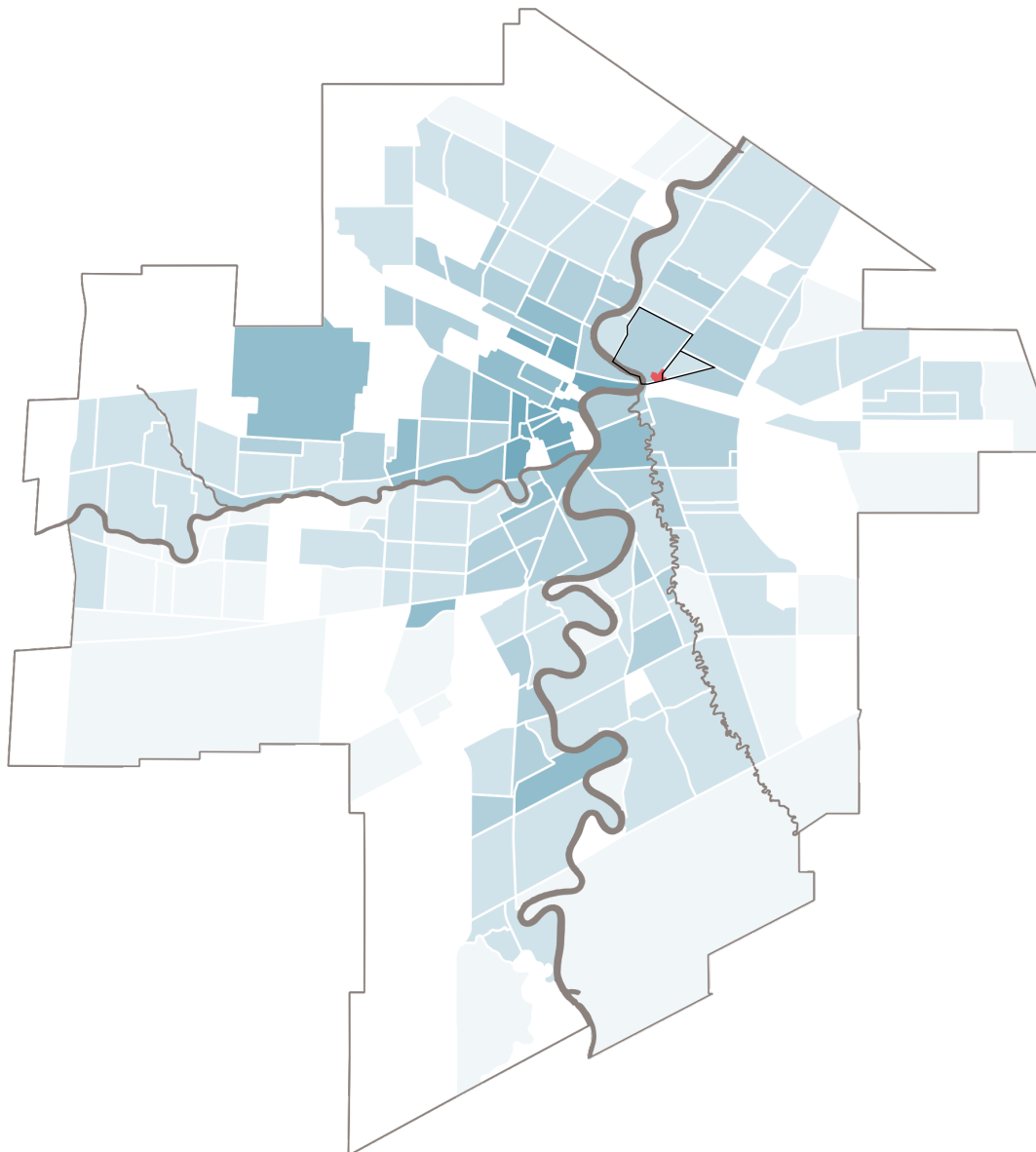
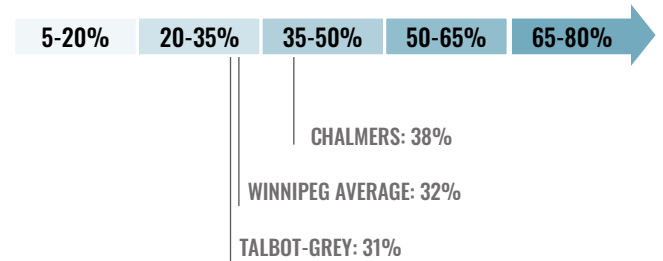


Fig. 7.2.7 Transit and pedestrian transportation.

## Community gardens

- Two community gardens are located near the site: Chalmers Community Gardens and Chalmers Green.
- Both community gardens are within about a 10 minute walk from the site.

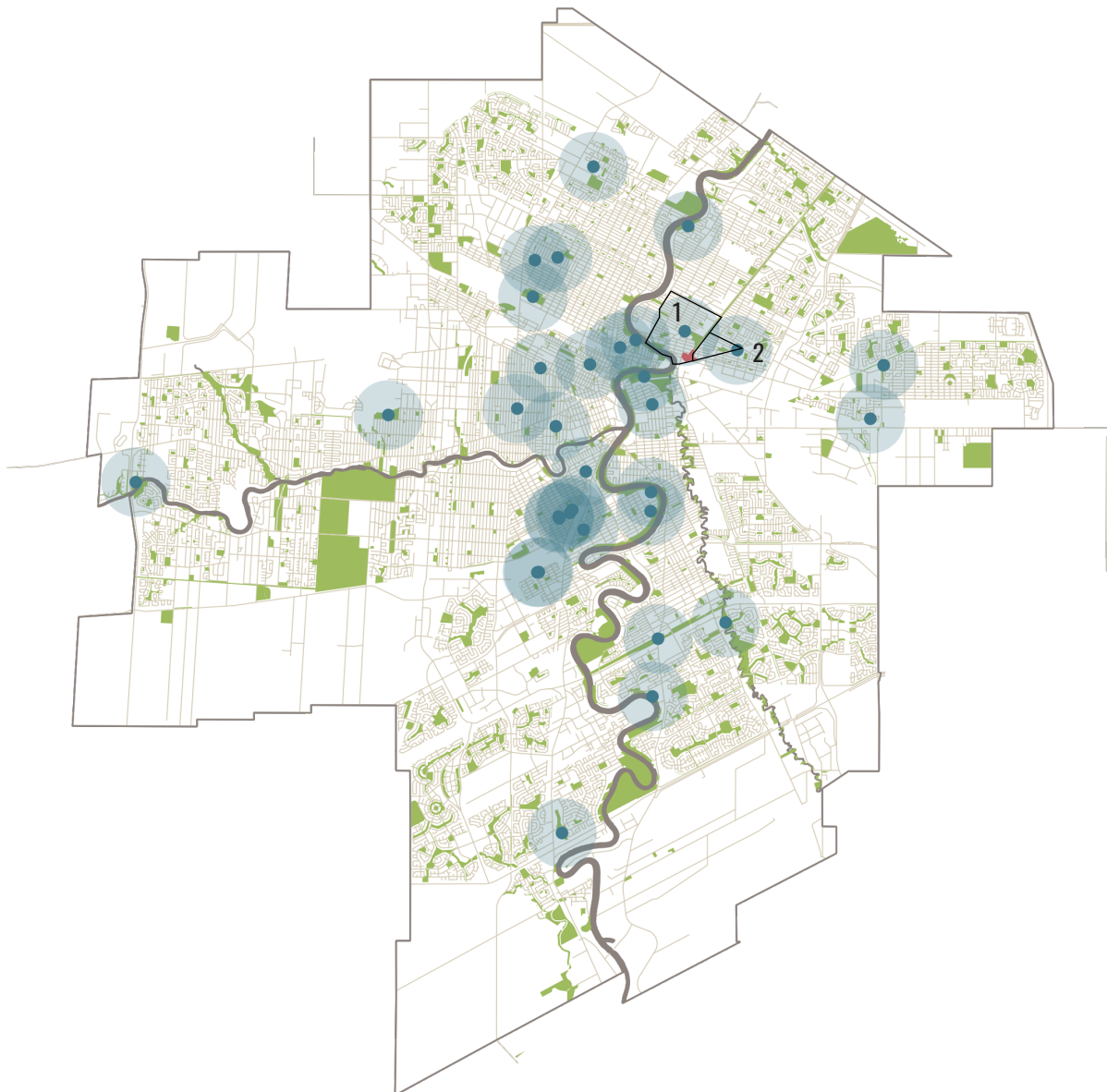
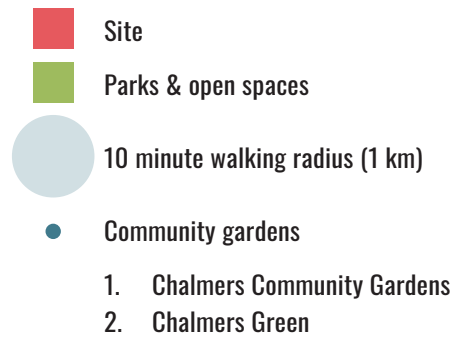


Fig. 7.2.8 Community gardens

## Grocery stores & markets

- There are two small grocery store selling produce in the Chalmers and Talbot-Grey neighbourhoods: Tasse's Balkan Foods and Zip Thru Food Store.
- There are no national chain grocery stores or farmers markets in either neighbourhood. There are, however, some small corner stores (not shown on map).
- The neighbourhoods occupy a mild to moderate food desert.

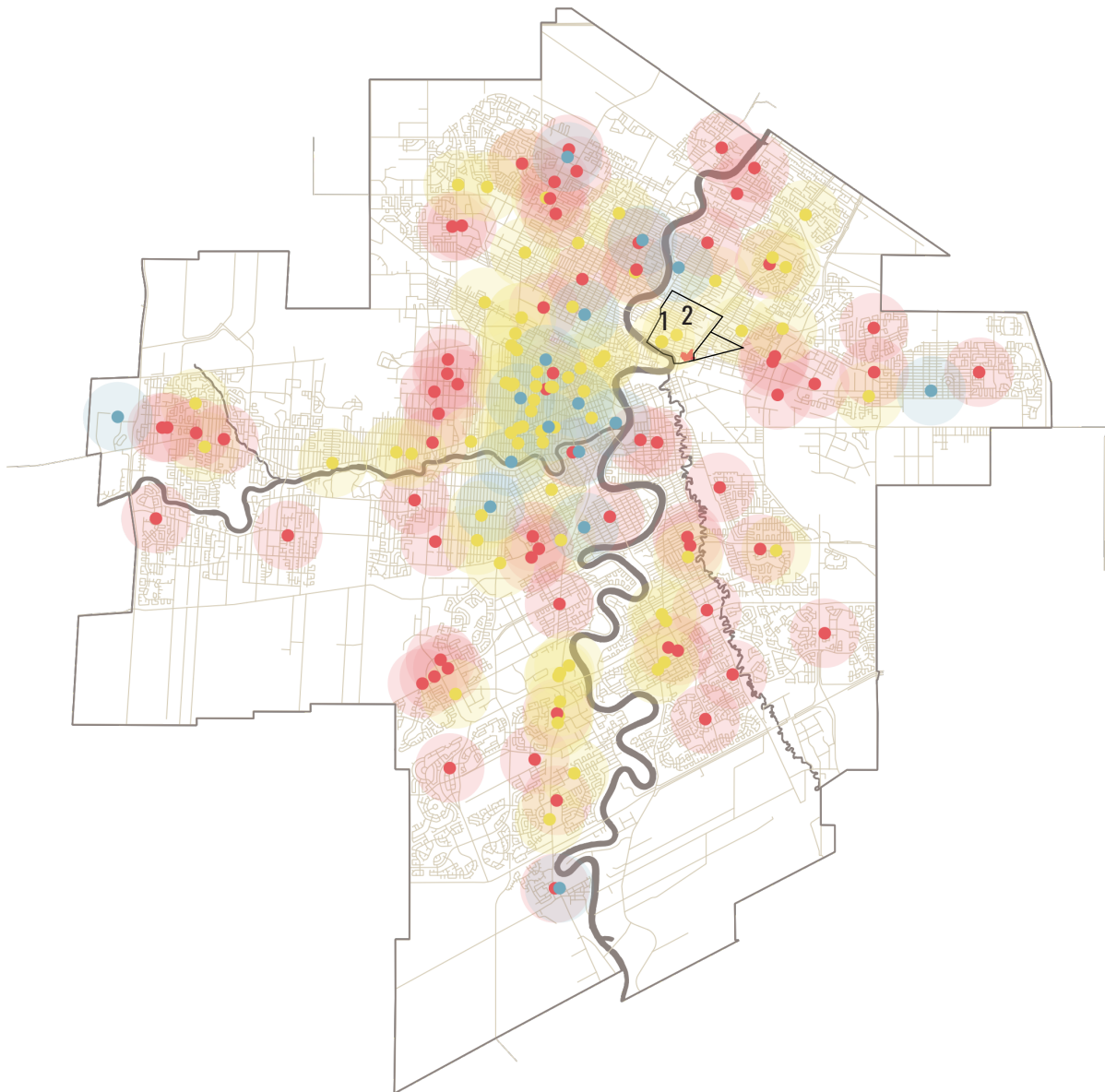


Fig. 7.2.9 Food access.



Tasse's Balkan Foods at 185 Stadacona St.



Zip-Thru Food Store at 52 Stadacona St.



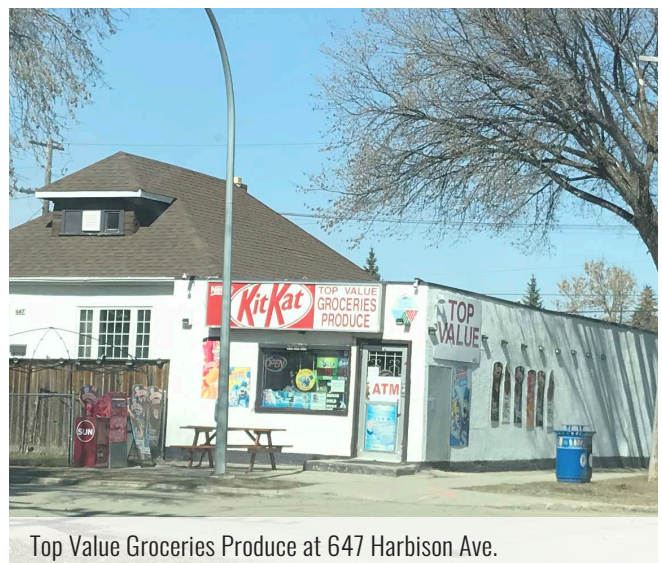
7-Eleven at 456 Talbot Ave.



Fresh Food Plus at 661 Talbot Ave.



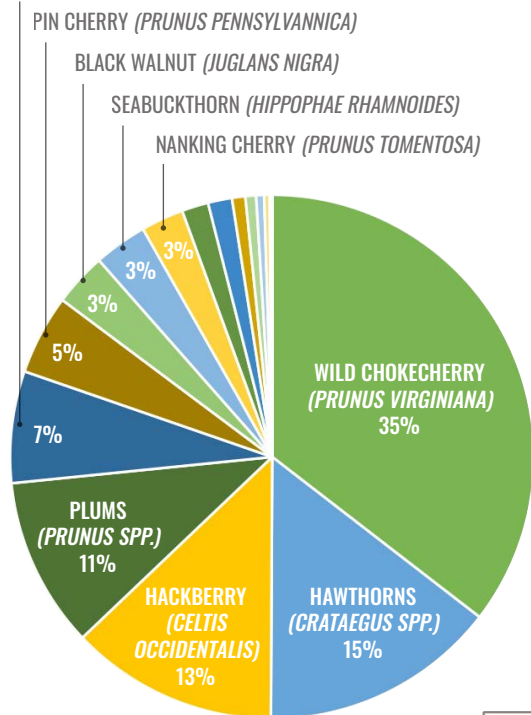
Tasse's Handy Mart at 589 Talbot Ave.



Top Value Groceries Produce at 647 Harbison Ave.

Fig. 7.2.10 Local grocery stores and corner stores.

PEAR (*PYRUS USSURIENSIS*)

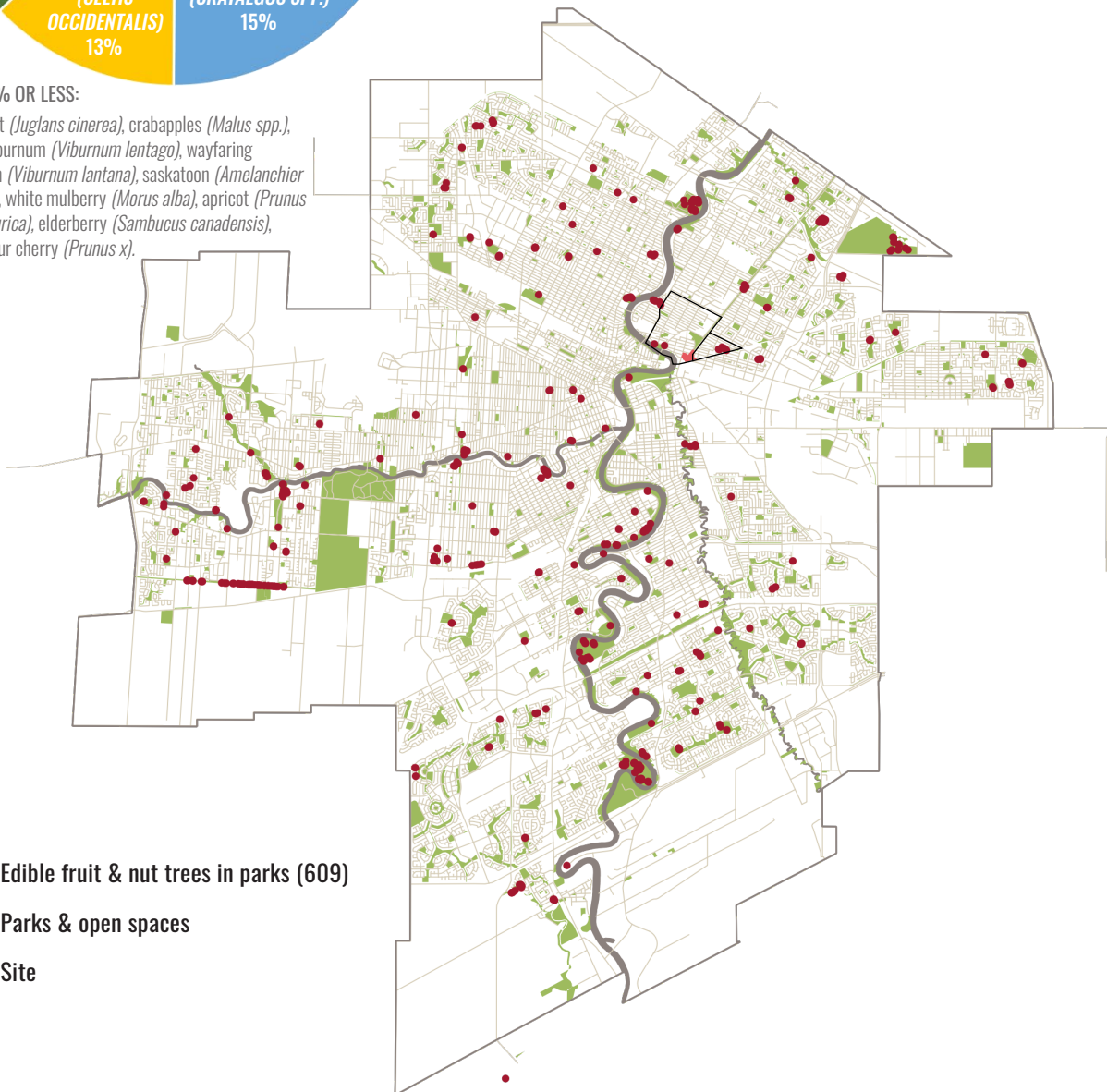


EACH 2% OR LESS:

Butternut (*Juglans cinerea*), crabapples (*Malus spp.*), sweet viburnum (*Viburnum lentago*), wayfaring viburnum (*Viburnum lantana*), saskatoon (*Amelanchier alnifolia*), white mulberry (*Morus alba*), apricot (*Prunus mandshurica*), elderberry (*Sambucus canadensis*), dwarf sour cherry (*Prunus x*).

### Edible trees in parks

- Out of the 299,719 trees in Winnipeg, only 1,253 are edible (0.4%).
- About half (609 of 1,253) of edible fruit and nut species are found in parks.
- The most common edible species found in parks are wild chokecherry (*Prunus virginiana*), hawthorn (*Crataegus spp.*), hackberry (*Celtis occidentalis*), plums (*Prunus americana* or *P. nigra*), and pears (*Pyrus ussuriensis*).



- Edible fruit & nut trees in parks (609)
- Parks & open spaces
- Site

Above: Fig. 7.2.11 Species distribution of edible trees. | Below: Fig. 7.2.12 Edible trees in parks.

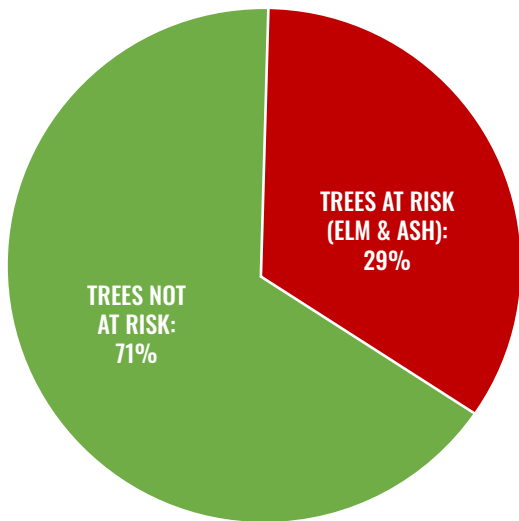
## Edible trees near the site

- There are no edible fruit or nut trees in El Tassi Park.
- In Chalmers, there are two edible trees available for public harvest in Ernie O'Dowda Park.
- In Talbot-Grey, there are seven edible trees - all at King Edward Park.

- Edible fruit & nut trees in parks
- Parks & open spaces
- Site



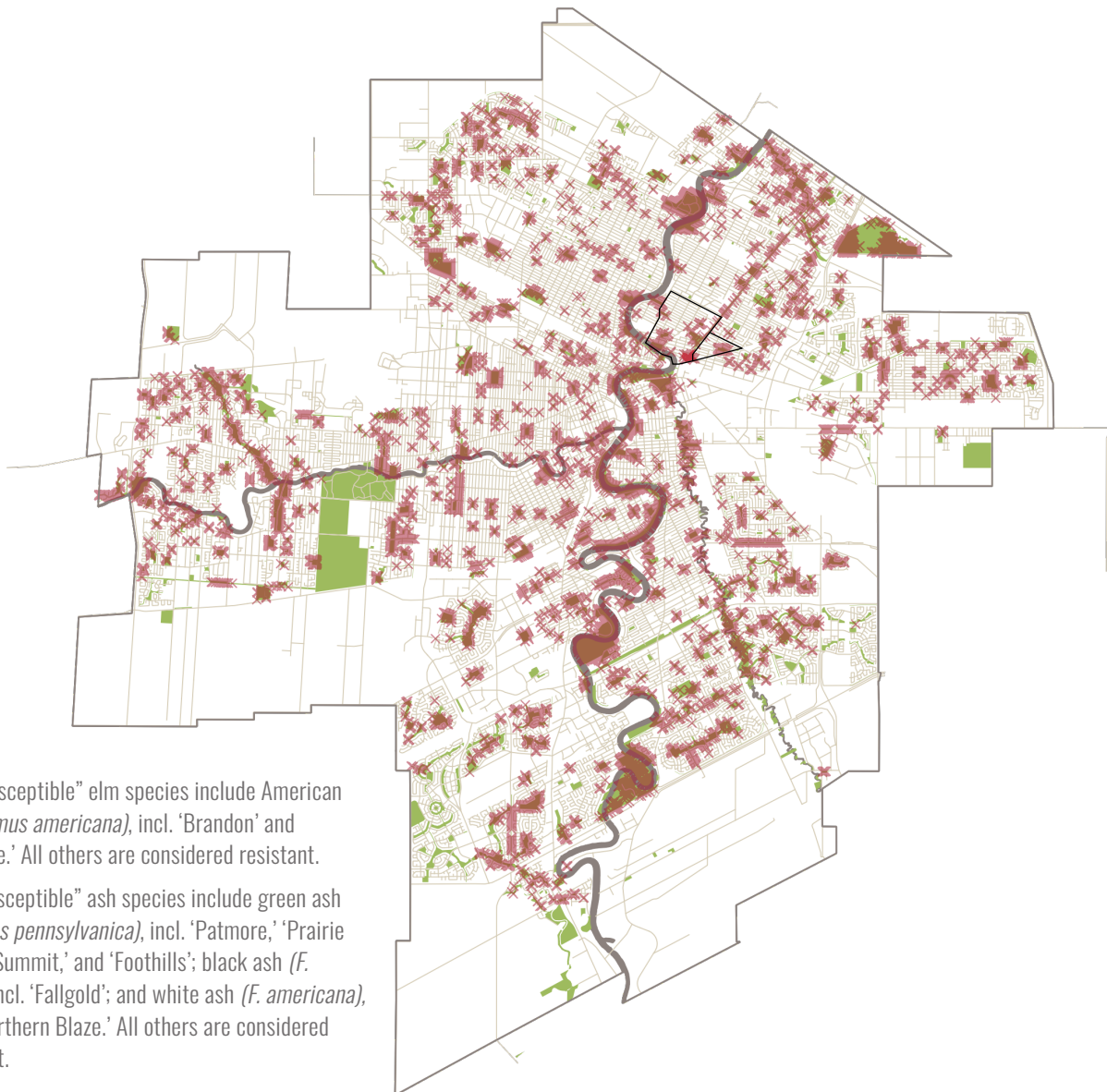
Fig. 7.2.13 Edible trees near the site.



### Park trees at risk

- Out of 85,853 park trees, almost a third (29%) are at risk due to Emerald Ash Borer or Dutch Elm Disease.
- This figure is slightly better than the Winnipeg average: out of all urban trees in Winnipeg, 49% (147,641 of 299,217) are at risk.

- × Trees at risk (Elm & Ash species)
- Parks & open spaces
- Site



Note:

“DED susceptible” elm species include American Elm (*Ulmus americana*), incl. ‘Brandon’ and ‘Patmore.’ All others are considered resistant.

“EAB susceptible” ash species include green ash (*Fraxinus pennsylvanica*), incl. ‘Patmore,’ ‘Prairie Spire,’ ‘Summit,’ and ‘Foothills’; black ash (*F. nigra*), incl. ‘Fallgold’; and white ash (*F. americana*), incl. ‘Northern Blaze.’ All others are considered resistant.

Above: Fig. 7.2.14 Percentage of at-risk trees. | Below: Fig. 7.2.15 Park trees at risk.

## Park trees at risk near the site

- At El Tassi Park, 30 of 83 trees (36%) are at risk due to Dutch Elm Disease or Emerald Ash Borer.
- This is higher than the Winnipeg average of 29%.

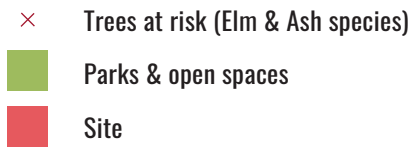


Fig. 7.2.16 Park trees at risk near the site.

## Connections to parks and trails

- El Tassi Park is a major intersection for four bicycle routes: northward via the Gateway Trail, eastward via Herbert Ave, southward via the future Archibald St. connection, and westward via Riverton Ave.
- Via current and future cycling routes, El Tassi Park is connected to many parks, greenspaces, community centres, and trails throughout Winnipeg.
- The following are located within a 10 minute walking radius (1 kilometre) of the site:
  - » Chalmers Community Centre
  - » Northeast Pioneers Greenway (Gateway Trail)
  - » East End Cultural Leisure Centre
  - » Elmwood Winter Club
  - » King Edward Park
  - » Ernie O'Dowda Park
  - » Point Douglas Park
  - » Whittier Park

- Site
- Parks & greenspaces
- Major road
- Bicycle path - separated
- Bicycle path - shared
- Railway
- Existing bicycle connection to site
- Future bicycle connection to site

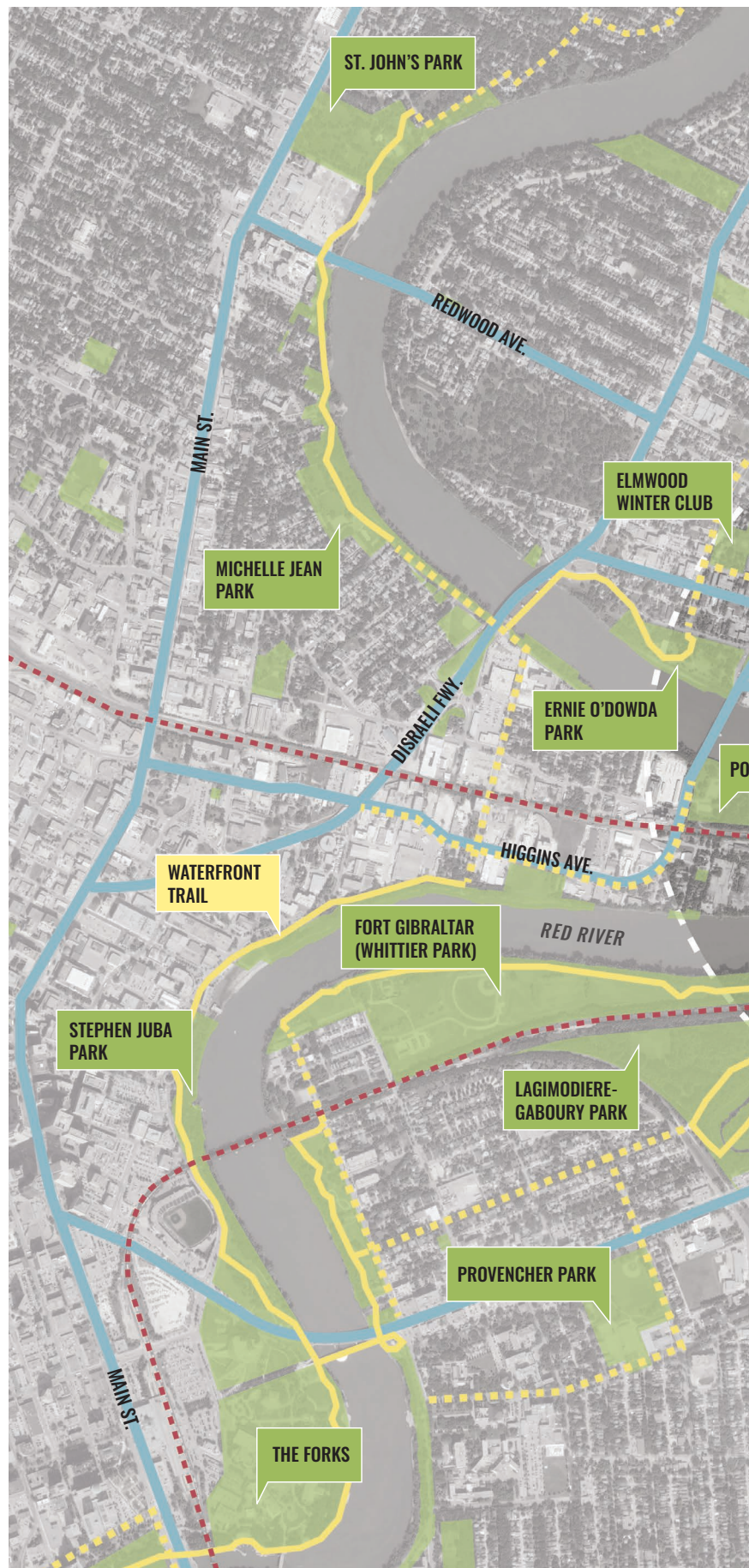


Fig. 7.2.17 Connections to parks and trails. (Map data: Google © 2021 Maxar Technologies)



## Neighbourhood circulation

- The site is surrounded by high-traffic streets, bus stops, and bicycle routes.
- Nairn Avenue and Watt Street are major traffic corridors in Winnipeg, while Talbot Avenue and Gateway Road are important local routes within Elmwood.
- The Nairn Overpass runs through the site, dividing it into two areas.
- The Northeast Pioneers Greenway (or “Gateway Trail”) terminates at the north end of the park near Herbert Avenue. The City of Winnipeg plans to extend the trail through the site (City of Winnipeg, 2019).

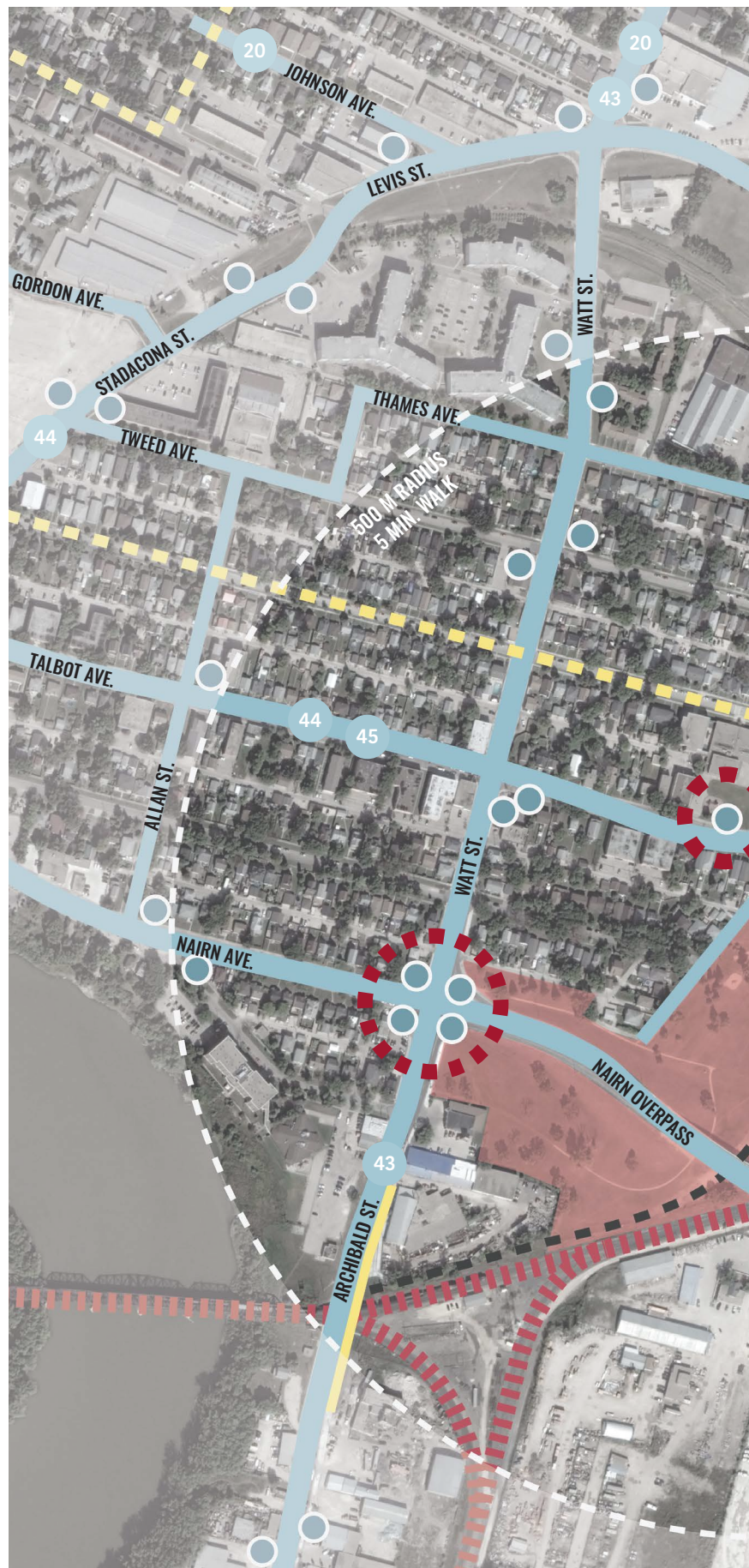
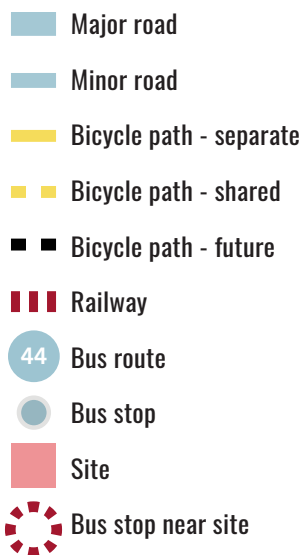


Fig. 7.2.18 Neighbourhood circulation. (Map data: Google © 2021 Maxar Technologies)



## Neighbours and zoning

- The site is bordered by residential, commercial, and manufacturing zones. The site itself is split between four zones.
- The site is close to a number of public institutions including schools, community centres, and places of worship.
- Neighbours such as the Islamic school, Serbian and Spanish churches, and Balkan food store suggest that the neighbourhood is ethnically diverse.
- There are three restaurants near the site, but very few places to acquire groceries – three corner stores within a 5 minute walking radius and two small grocery stores just outside this radius.
- The neighbourhood has several murals, indicating local artistic interest.

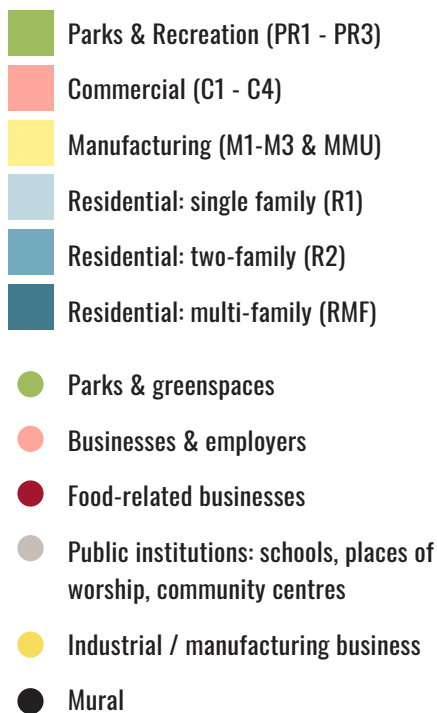


Fig. 7.2.19 Neighbours and zoning. (Map data: Google © 2021 Maxar Technologies)



Fig. 7.2.20 Forestry mural at Talbot Ave. and Watt St. (unfortunately being painted over due to new building ownership)



Fig. 7.2.21 Farming mural at Kildonan MGC Thrift Shop



## 7.3 SITE

### Site history

Before becoming a park, the site was owned by the Canadian Pacific Railway (CPR) as part of the Marconi Spur Line (Kramer, 2020). Constructed in 1878, this railway was an important connection between Winnipeg and Kenora (Winnipeg Trails Association, n.d.). By the mid-1900s, the site was occupied by the active railway, residential homes, and Nairn Avenue, which ran through the south side of the as it crossed over the railway. South of Nairn Avenue, the site was bordered by Montcalm Park at the corner of Nairn Ave. and Watt St., some undeveloped industrial land, and more CPR railways.

When the Nairn Overpass was built in 1967, the Marconi Spur Line had to be diverted to the east side of the site, leading to the expropriation of fifteen houses along Nairn Avenue (Kramer, 2020). The resulting wedge-shaped space between the old and new Marconi Spur lines became a public greenspace known as Nairn Overpass Park (2020). The new overpass cut off Montcalm Park from the rest of the neighbourhood, and at some point that playground was removed. A new playground was constructed in Nairn Overpass Park.

The Marconi Spur Line was decommissioned in 2005, and in 2007 it was converted into an asphalt pedestrian pathway as part of Winnipeg's rails-to-trails program (Winnipeg Trails Association, n.d.). The trail was named the Northeast Pioneers Greenway, which is known colloquially as the Gateway Trail today. At 5.5 km in length, the trail extended from the Nairn Overpass Park to Knowles Avenue to the northeast, connecting to a variety of public greenspaces and trails along the way, including Chalmers Park, Calisthenics Park, Elmwood High School grounds, Centennial Park, the Trans Canada Trail, Michael Hrushovetz Park, and the Bunn's Creek Trail (n.d.). The Gateway Trail intersected with other trail networks and cycling routes, connecting it to The Forks and Birds Hill Park (n.d.). The trail was designed to teach about local ecology through large areas planted with native tallgrass prairie, educational signage, and sculptures illustrating insect life cycles.

In 2015, Nairn Overpass Park was renamed "Abdo and

Samira El Tassi Park" in recognition of the El Tassi couple's contributions to community development, education, and global outreach (Kramer, 2020). The El Tassi couple emigrated from Lebanon to Winnipeg in 1969 and worked hard to establish themselves in their new country. After becoming CEO of Peerless Garments in 2003, Abdo sponsored dozens of immigrants to Canada, created employment opportunities through work at Peerless Garments, offered training in English and marketable skills, and provided interest-free loans for business startup costs, university tuition, and mortgage costs (University of Manitoba, 2013). As a practicing Muslim and a strong believer in education, Abdo helped establish schools in developing countries, a mosque in Thompson, and the Al Hijra Islamic School in Winnipeg, located on Watt Street close to the park. Abdo has worked to promote peace locally and globally by helping to landmines from war-torn countries and participating in inter-faith dialogue groups (2013).



Fig. 7.3.1 The Marconi Spur Line in 1994. (Credit: Morgan Turney)



Fig. 7.3.2 The Gateway Trail is enhanced with signage, native prairie plants, and sculptures by local artists. (Credit: Robert Tinker)



Fig. 7.3.3 1955 aerial photo before the construction of the Nairn Overpass, with approximate current site extents in yellow. (Credit: University of Manitoba Archives and Special Collections)



Fig. 7.3.4 1965 street map before the construction of the Nairn Overpass, with approximate current site extents in grey. (Credit: Wyman Laliberte)

## Railways and contaminated soil

Although the design output of this practicum will only progress to a conceptual level, it is important to acknowledge the potential safety concern of growing a food forest near old railway lines. The scope of this practicum does not include soil tests; however, research on the relationships between railway toxins, soil, and plant uptake can support an educated guess of the potential risk level.

Contaminants commonly found along railways include fossil fuel combustion products known as polycyclic aromatic hydrocarbons (PAHs); lead and arsenic from coal ash and cinder; leaked or spilled liquids such as gasoline, oil, and cleaning solvents; herbicides to control plant growth along the tracks; and chemical treatments for wood railroad ties, such as creosote, which can kill plants, insects, and small animals, or chromated copper arsenate (CCA), which contains arsenic (Rails to Trails Conservancy, n.d.; Wilkomirski et al, 2011).

The heavy metals, herbicides, and PAHs can be toxic, mutagenic, and carcinogenic to living organisms and to humans in sufficient amounts (Wilkomirski et al, 2011). Humans can come into contact with these toxins through direct exposure (such as children accidentally ingesting contaminated soil while playing) or through indirect exposure (such as plants absorbing the toxins and being ingested by humans) (Environmental Protection Agency, 2011). A plant's ability to absorb these chemicals depends on many factors such as the type of plant, the pH of the soil, and the soil texture (2011).

However, while there is a risk of potential adverse effects, it is not necessarily serious enough to restrict food production. Studies have shown that there is generally minimal risk to eating plants grown in contaminated soil, especially for fruiting plants such as berries, squash, tomatoes, and apple trees, which have a very low absorption rate (2011). Root vegetables such as carrots, onions, and potatoes may have a

slightly higher risk, but this can be mitigated through the use of raised beds filled with clean soil, which can be separated from the contaminated soil with a fabric barrier that prevents mixing but still allows water and earthworms to pass through (2011). Since food forests generally focus more on fruiting plants, it may be safe to grow a food forest in or near contaminated soil.

The only way to determine with certainty whether the soil at El Tassi Park poses a health risk is to perform a soil survey of the site. A soil survey would show the level of contamination, the depth of contamination, and how far the toxins have migrated from the original railway. Since the original railway ties and materials were removed when the Marconi Spur Line was decommissioned, it is reasonable to assume that the contaminants were at least partially removed, and anything remaining likely did not spread very far due to the clay texture of the soil. Since the City of Winnipeg plans to expand the Gateway Trail through the site along the old railway line, it is also reasonable to assume that soil tests and appropriate remediation measures would be undertaken at that time.

To conclude, due to the relatively low risk of fruiting plants to absorb toxins, and based on the assumption that the toxins on site have been at least partially removed and will be further removed when the trail is extended, I have determined that it is likely safe enough to proceed with designing a food forest at El Tassi Park. In the event that a soil test showed dangerous levels of contamination, a number of alternative options could be considered: the contaminated areas could be planted with inedible, ecologically supportive plants that enhance the food forest; a phytoremediation strategy could be integrated into the design, such as planting and harvesting sunflowers in the contaminated area every year; or a buffer could be created that is wide enough so that the roots of edible plants and trees cannot reach the contaminated zone. Given the large area of the site, there should still be enough space to plant a food forest regardless of any contaminated areas.

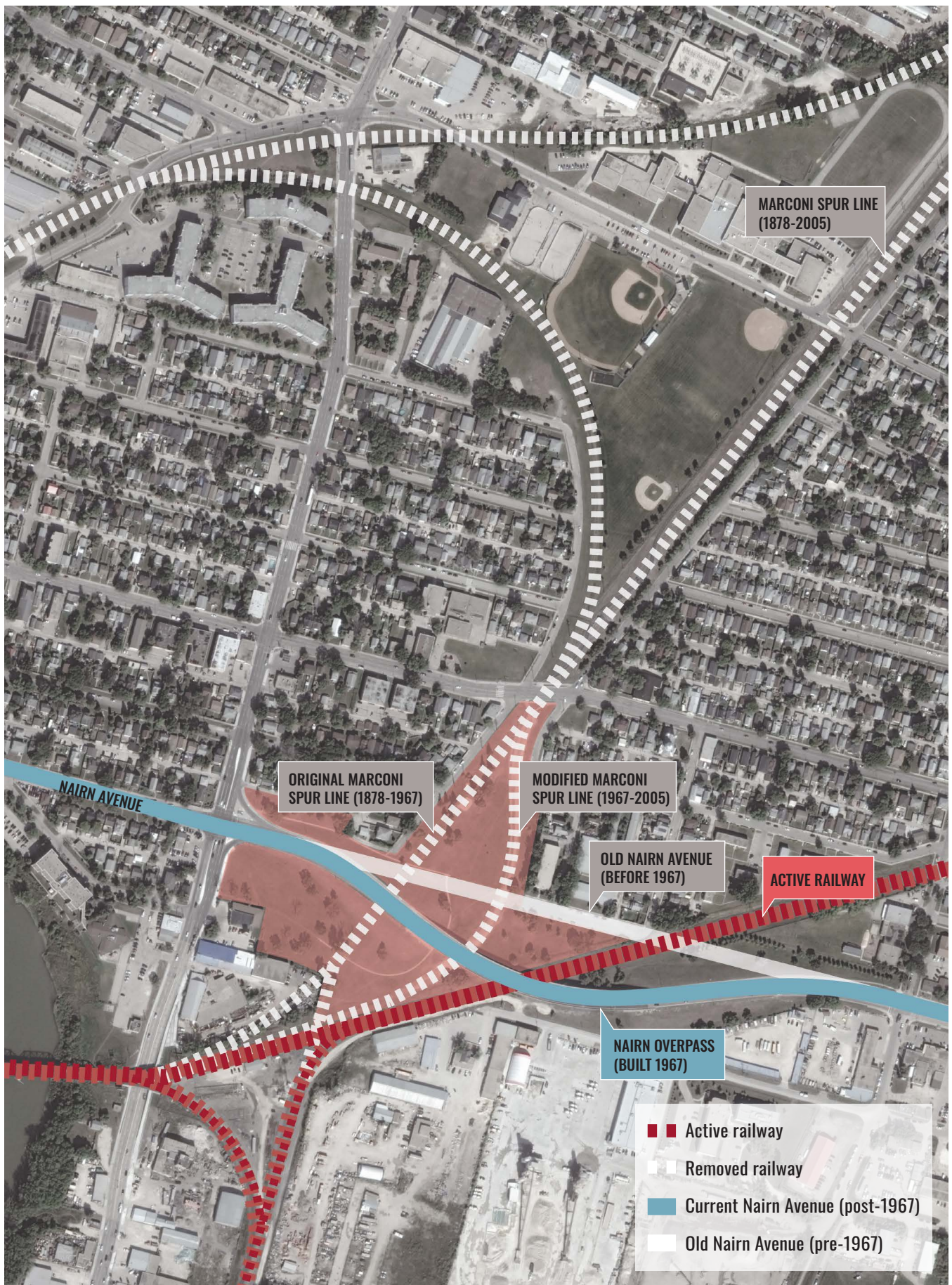


Fig. 7.3.5 Past and present railways. (Map data: Google © 2021 Maxar Technologies)

## Site inventory

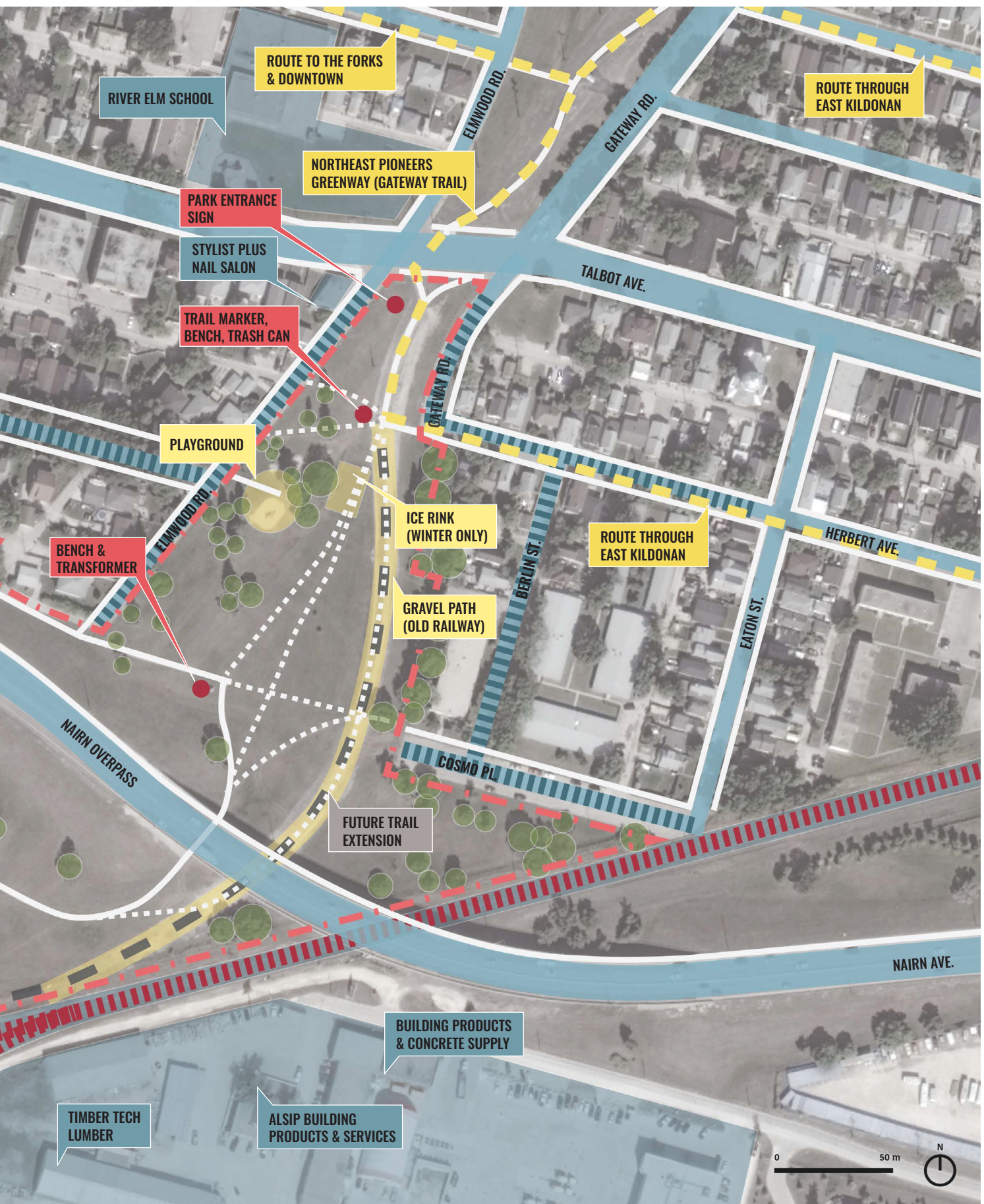
Relative to its size, El Tassi Park has very few features and little programming. There is an entrance sign next to Talbot Avenue, some site furniture at the end of the Gateway Trail (bench, trash can, and trail marker), a bench and transformer box near the overpass, a playground, some deciduous and coniferous trees, a temporary winter ice rink (City of Winnipeg, 2020), and a gravel path where the railway once was. The majority of the park is open lawn.

The site is well connected to existing trails and sidewalks outside the park, but there are very few pedestrian paths within the park. The number of desire lines throughout the site indicate that the site is well used but lacks formal paths. A concrete sidewalk in poor condition connects to the intersection at Nairn Ave. and Watt St. and veers under the overpass before terminating in the middle of the greenspace. There is ample street parking around the site.

- - - Site boundary
- Sidewalk or formal path
- Desire line
- Bicycle path (shared/separate)
- Future bicycle path
- Railway
- Roads
- Road with street parking near park
- Point feature
- Area feature
- Businesses & institutions
- Trees



Fig. 7.3.6 Site inventory. (Map data: Google © 2021 Maxar Technologies)



## On-site observations

The park entrance from Talbot Avenue is minimally developed. There is a standard entrance sign, asphalt path, trail marker, lawn, and some hydro poles (Fig. 7.3.7). There are light fixtures along the trail and some site furniture at the trail's end (Fig. 7.3.9). The terminus is connected to Talbot-Grey neighbourhood via an asphalt sidewalk, but there is no formal path to Chalmers – only a well-used desire line (Fig. 7.3.8).

Despite its premature end, the trail was nevertheless well used. When visiting the site, I noticed that many people enter the park from the north part of the Gateway Trail and then use the endpoint as their turn-around point. Others reached the trail's end and then cut across the lawn to the playground.

The playground, which was renovated in 2019, was very well used by children (Fig. 7.3.10). Benches and picnic tables were used by parents and supervisors. A number of mature deciduous and coniferous trees surround the playground, creating shelter and a sense of enclosure amidst the park's openness.

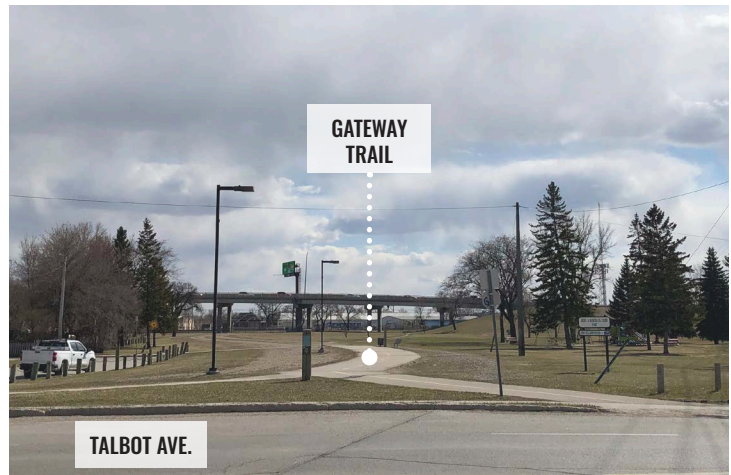


Fig. 7.3.7 Park entrance



Fig. 7.3.8 Connections to Chalmers and Talbot-Grey neighbourhoods

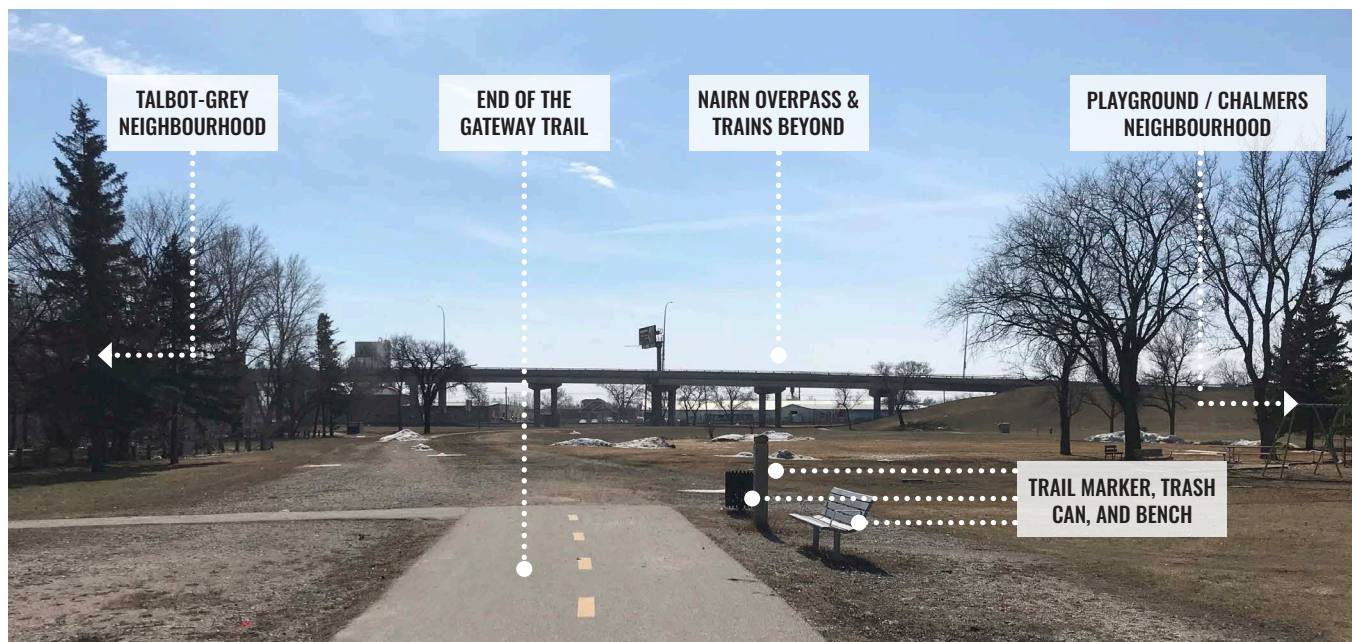


Fig. 7.3.9 View from the end of the Gateway Trail

Any remnants or debris from the old Marconi Spur Line had been removed, leaving only an unmaintained gravel path (Fig. 7.3.11). This path was frequently used by cyclists traveling to Archibald Street, but it was not used by walkers, suggesting that it is more important for long-distance commutes than leisurely walks.

Since the park lacks formal paths, cyclists and walkers had formed their own. There were a number of bicycle desire lines from the end of the Gateway Trail to the overpass (Fig. 7.3.12), as well as walking desire lines along the north side of the overpass between Chalmers and Talbot-Grey neighbourhoods (Fig. 7.3.13).

Despite its lack of programming, I found the park's unique openness to be refreshing in this otherwise dense and busy neighbourhood. The park's openness allows for views to the overpass beyond, which frames the park almost like a sculptural element. The overpass was an intriguing feature, drawing me into the park to see it up close. In my experience, an opportunity to view an overpass so clearly is rare in Winnipeg, since overpasses are usually surrounded by buildings.



Fig. 7.3.10 Playground



Fig. 7.3.11 Gravel path where Marconi Spur Line was relocated in 1967



Fig. 7.3.12 Desire path extending from Gateway Trail

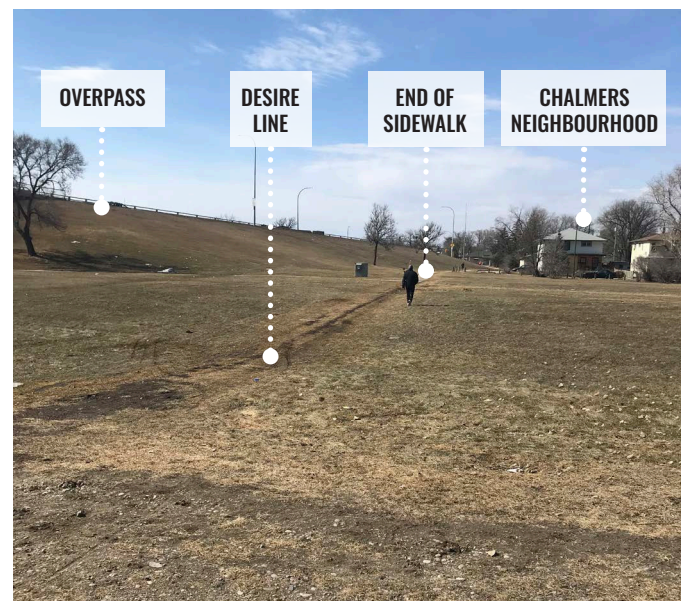


Fig. 7.3.13 Desire path connecting east and west sides of park

At least once every hour, a train would pass by behind the overpass (Fig. 7.3.14). The train was loud, but it was enjoyable to watch, and it was nicely framed by the overpass. In my experience, there are many railway crossings in Winnipeg, but they rarely run alongside parks, so there are very few places where one can watch a train in a relaxed setting.

The top of the overpass offers spectacular views into the park (Fig. 7.3.15). Pedestrians, personal vehicles, and public transit all use the overpass, making the park highly visible.

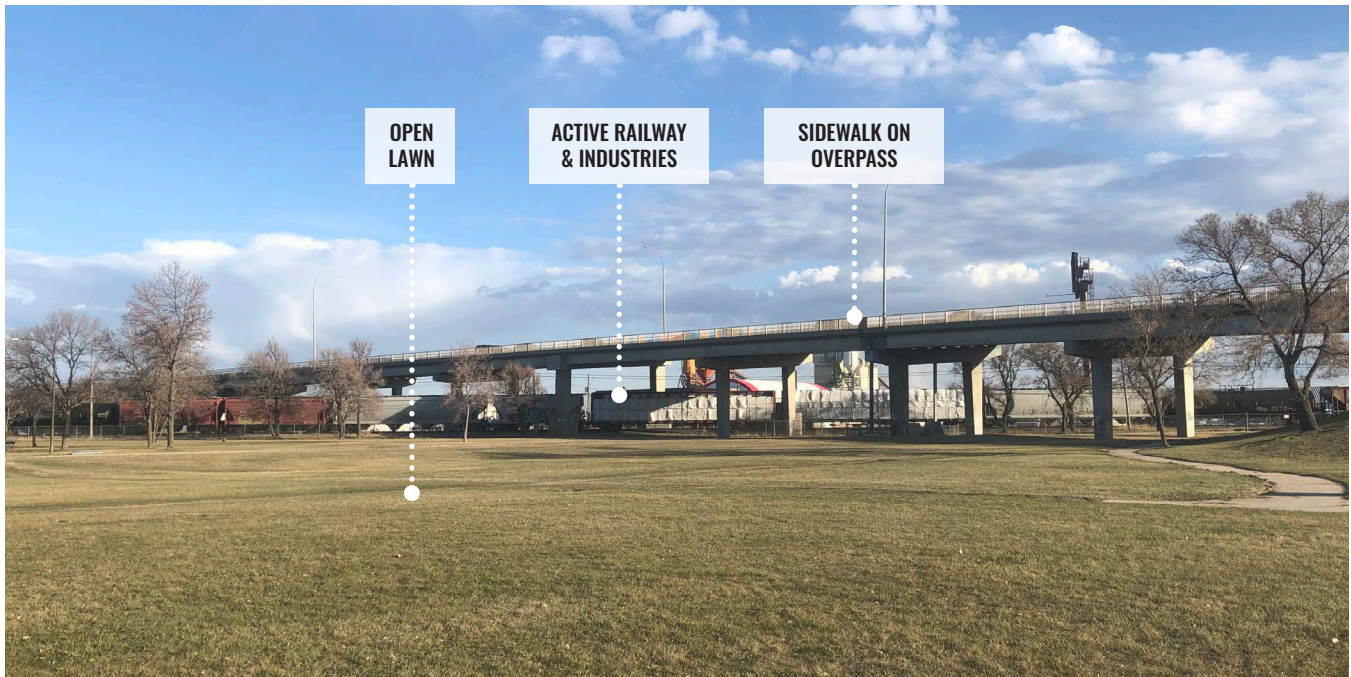


Fig. 7.3.14 The overpass frames the railway

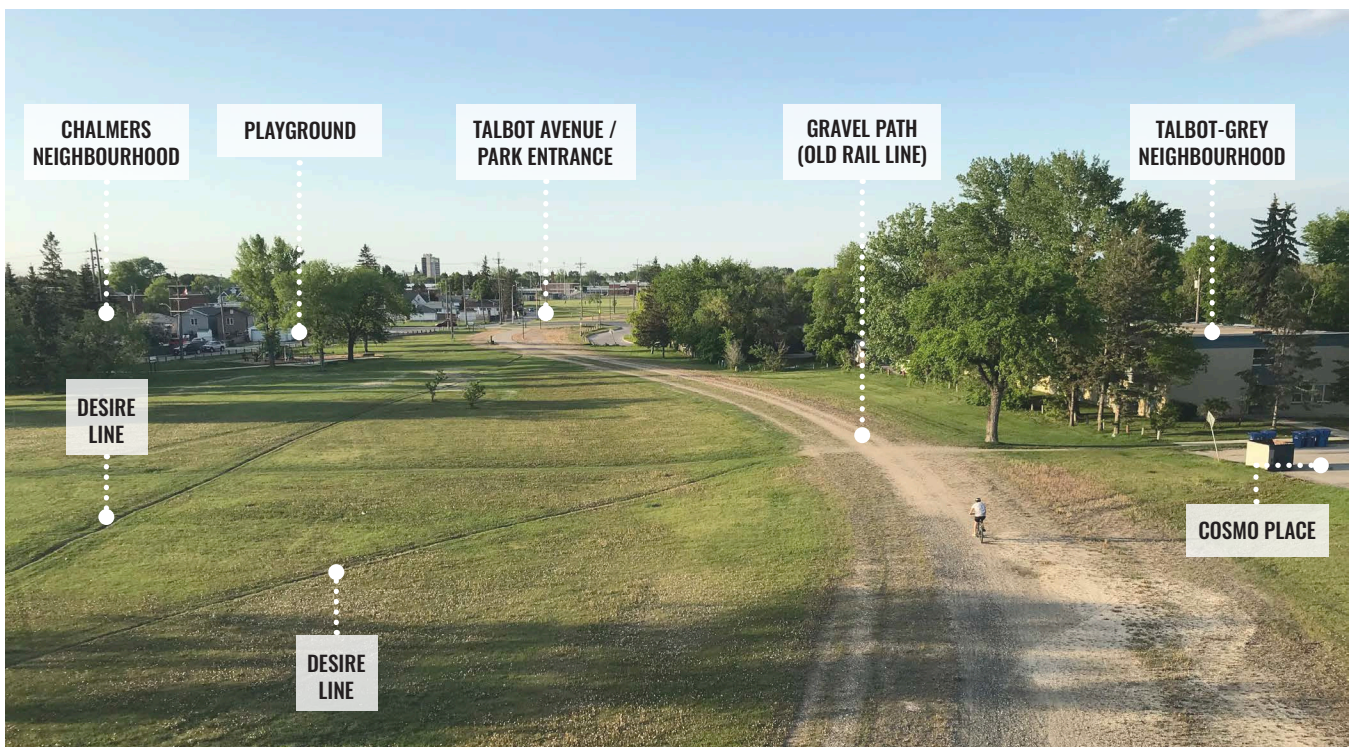


Fig. 7.3.15 View from the top of the overpass

The space under the overpass was littered with garbage, debris, graffiti, and abandoned items such as shopping carts and mattresses (Fig. 7.3.16). There was also a significant amount of dust falling from the roadway above.

The greenspace south of the overpass had a very different character than the north side because it was bordered by the backsides of industries rather than houses (Fig. 7.3.17 and Fig. 7.3.18). It was also fairly noisy due to the nearby industries. Other than the occasional cyclist moving quickly through the site, the area was not well used.



Fig. 7.3.16 Space under the overpass



Fig. 7.3.17 Looking southeast in the open area south of the overpass

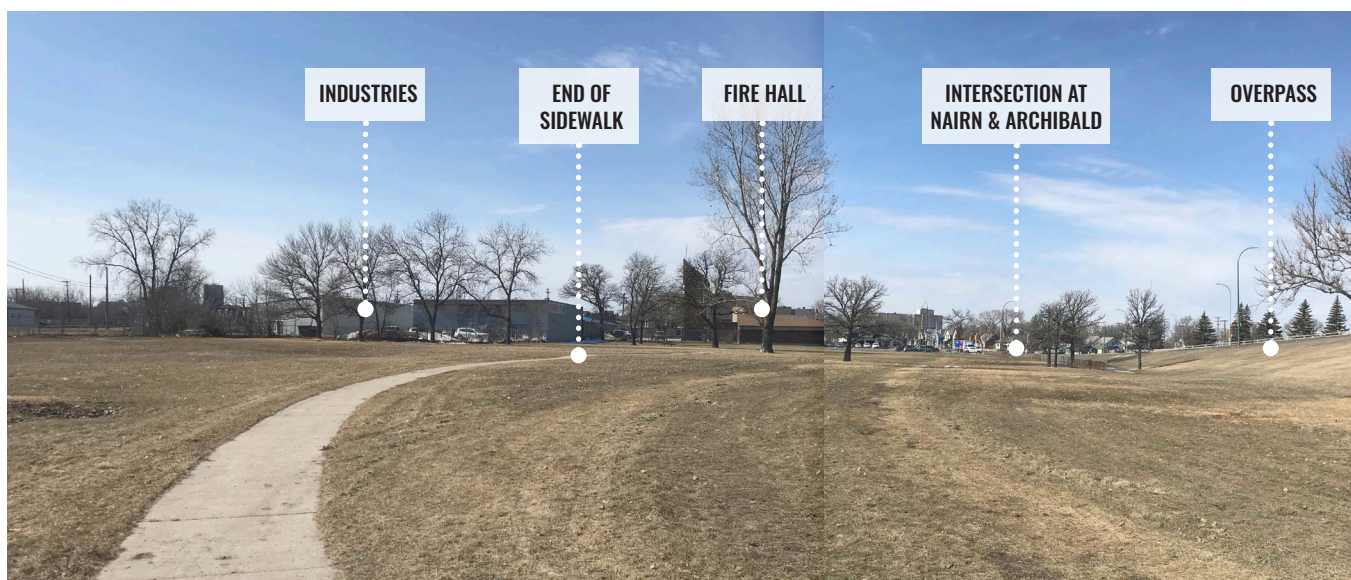


Fig. 7.3.18 Looking west towards the intersection at Nairn Ave. and Archibald St.

## 7.4 CONCLUSIONS

As stated in the introduction (Section 7.1), the goals of this chapter were to:

1. Understand the site and its context.
2. Justify the selection of El Tassi Park for a public food forest.
3. Identify key strategies and implications for design.

The key takeaways of the chapter, as related to these goals, are summarized in the table below.

Site diagrams illustrating some of these conclusions (critical connections, critical views, and focus area for development) will follow.

1. UNDERSTANDING GAINED / OBSERVATIONS MADE	2. JUSTIFICATION FOR SITE SELECTION	3. IMPLICATIONS FOR DESIGN	ANALYSIS REFERENCE
Information about Winnipeg's geological, climatic, and ecological conditions		Plant selection should respond to geology, climate, and ecology. Consider climate and prevailing winds to promote comfort.	Section 7.2: Geological, climatic, and ecological context
Chalmers and Talbot-Grey are ethnically diverse neighbourhoods.	Urban agriculture (UA) can create a sense of purpose for recent immigrants, help preserve cultural food traditions, and promote understanding between diverse participants (see sections 3.4: Social benefits, 3.5: Individual benefits, 6.2: Beacon Food Forest)	Design should consider different cultural perspectives and be welcoming to a variety of cultures.	Fig. 7.2.3: Immigrants Fig. 7.2.4: Indigenous identity Fig. 7.2.19: Neighbours and zoning
Chalmers and Talbot-Grey are lower-income neighbourhoods.	Families may struggle to afford healthy food. A public food forest with free food can support healthy diets.		Fig. 7.2.5: Median income Fig. 7.2.6: Low-income families
Over a third of neighbourhood residents rely on alternative transportation.	Higher levels of pedestrian traffic increases potential interaction with the project.	Design should consider main pedestrian access points to the site.	Fig. 7.2.7: Transit and pedestrian transportation Fig. 7.4.3 Critical connections
There are two existing community gardens in the neighbourhoods.	There is some local interest in UA, suggesting that a public food forest may also be supported.  The area is not oversaturated with UA projects, suggesting that a food forest would not be redundant.	Since residents are already familiar with community gardens, consider integrating community gardens into the design to help introduce the less-familiar food forest.	Fig. 7.2.8: Community gardens

Fig. 7.4.1 Analysis conclusions

1. UNDERSTANDING GAINED / OBSERVATIONS MADE	2. JUSTIFICATION FOR SITE SELECTION	3. IMPLICATIONS FOR DESIGN	ANALYSIS REFERENCE
The neighbourhoods occupy a mild to moderate food desert.	A public food forest can help increase food access. It is important to have a high concentration of food access points within walking or biking distance.		Fig. 7.2.9: Food access Fig. 7.2.10: Local grocery stores and corner stores Fig. 7.2.7: Transit and pedestrian transportation
There are relatively few edible trees in Winnipeg public parks, and none in El Tassi Park.	A public food forest could fill this void, providing opportunities to increase food literacy.		Fig. 7.2.12: Edible trees in parks Fig. 7.2.13: Edible trees near the site
Many park trees in Winnipeg and at El Tassi Park are at risk.	A food forest could increase the urban canopy and promote species diversity.	Plant palette should consider species diversity and disease resistance.	Fig. 7.2.15: Park trees at risk Fig. 7.2.16: Park trees at risk near the site
The site connects to and is surrounded by major transportation corridors (vehicular, public transit, cycling routes, pedestrian paths).	A highly visible site is advantageous for promoting the project, as it provokes curiosity and invites people to visit. A site with good multi-modal access is advantageous, as it allows more people to participate.	To enhance views, the design should consider sight lines from major transportation corridors, particularly Talbot Avenue, the Nairn Overpass, and the Gateway Trail.	Fig. 7.2.17: Connections to parks and trails Fig. 7.2.18: Neighbourhood circulation Fig. 7.3.7: Park entrance Fig. 7.3.15: View from the top of the overpass Fig. 7.4.4: Critical views
The site is close to public institutions and amenities such as community centres, schools, places of worship, parks, and restaurants.	The project can gain community support by building on existing networks and connections, which can help to create partnerships and source volunteers/participants.	Consider how the design can support community programs (e.g. summer day camps run through partnerships with local schools).	Fig. 7.2.17: Connections to parks and trails Fig. 7.2.19: Neighbours and zoning
Murals in the neighbourhood and sculptures along the Gateway Trail indicate artistic interest.		Design should consider involving local artists, as community art projects can help promote a sense of community pride and ownership (see section 5.3: Relationships within community).	Fig. 7.2.19: Neighbours and zoning Fig. 7.2.20: Forestry mural at Talbot Ave. and Watt St. Fig. 7.2.21: Farming mural at Kildonan MCC Thrift Shop Fig. 7.3.2: The Gateway Trail is enhanced with signage, native prairie plants, and sculptures by local artists Fig. 7.3.17: Looking southeast in the open area south of the overpass

1. UNDERSTANDING GAINED / OBSERVATIONS MADE	2. JUSTIFICATION FOR SITE SELECTION	3. IMPLICATIONS FOR DESIGN	ANALYSIS REFERENCE
<p>As part of the City of Winnipeg’s rails-to-trails program, the Gateway Trail is intended to increase active transportation and teach about the tall grass prairie ecosystem. The City plans to extend this trail through the site.</p>		<p>Trail extension should follow the path of the previous rail line as per the “rails-to-trails” intention. Consider incorporating themes from the Gateway Trail such as educational/prairie elements.</p>	<p>Fig. 7.3.2: The Gateway Trail is enhanced with signage, native prairie plants, and sculptures by local artists</p> <p>Fig. 7.2.18: Neighbourhood circulation</p> <p>Fig. 7.4.2 Critical connections</p>
<p>The park is named after Abdo and Samira El Tassi in recognition of their work as advocates of education, peace, and equal opportunity for all.</p>	<p>A public food forest aligns with the El Tassi’s vision: it supports those experiencing financial hardship through free food; it promotes eco-literacy and food literacy; and it promotes community ties and interaction in a diverse neighbourhood.</p>		<p>Section 7.3: Site history</p>
<p>Railways are a significant site feature, both historically and presently.</p>		<p>The design should highlight the railway’s significance - e.g. through materiality, layout/forms, or enhanced sight lines to the railway.</p>	<p>Section 7.3: Site history</p> <p>Fig. 7.3.14: The overpass frames the railway</p> <p>Fig. 7.4.4: Critical views</p>
<p>Soil contamination from past railways could pose a risk to food production, but the risk is not sufficient to prohibit food production.</p>		<p>Does not affect conceptual design, but future design should perform soil tests and undertake appropriate mitigation measures.</p>	<p>Fig. 7.3.5: Past and present railways</p>
<p>The site is fairly undeveloped with few features or programs.</p>	<p>A public forest could introduce a meaningful, new program and help define the park’s identity.</p>	<p>Design should provide new programming while also integrating existing programs (i.e. playground, rink, trail).</p>	<p>Fig. 7.3.6: Site inventory</p> <p>Fig. 7.3.10: Playground</p>
<p>The site is well used by pedestrians, but it lacks pedestrian paths.</p> <p>Many walkers enter the site from the north via the Gateway Trail and turn around at the trail’s end.</p>		<p>Design should consider existing desire lines to guide new pathways.</p> <p>Consider a loop system to allow walkers to experience the park before returning to the northbound Gateway Trail.</p>	<p>Fig. 7.3.6: Site inventory</p> <p>Fig. 7.3.8: Connections to Chalmers and Talbot-Grey neighbourhoods</p> <p>Fig. 7.3.12: Desire path extending from Gateway Trail</p> <p>Fig. 7.3.13: Desire path connecting east and west sides of park</p> <p>Fig. 7.4.3 Critical connections</p>

1. UNDERSTANDING GAINED / OBSERVATIONS MADE	2. JUSTIFICATION FOR SITE SELECTION	3. IMPLICATIONS FOR DESIGN	ANALYSIS REFERENCE
The overpass is a unique, sculptural feature that frames the park and railway.		Consider emphasizing or dramatizing the view to the overpass.	Fig. 7.3.9: View from the end of the Gateway Trail Fig. 7.3.14: The overpass frames the railway Fig. 7.4.4: Critical views
The area north of the overpass is actively used and surrounded by houses, while the south area is less used and surrounded by the backsides of industries.		The north side of the park is better suited for development. Passive surveillance from surrounding houses, Talbot Avenue, the overpass, and pedestrians increases perceptions of safety.	Fig. 7.3.17: Looking southeast in the open area south of the overpass Fig. 7.3.18: Looking west towards the intersection at Nairn Ave. and Archibald St. Fig. 7.4.2: Focus area for park development Fig. 7.4.4: Critical views



Fig. 7.4.2 Focus area for park development. (Map data: Google © 2021 Maxar Technologies)

## Critical connections

This map shows critical circulation connections, as determined through the site analysis. This schematic diagram serves as a basis for the design.

A north-south spine connects the end of the Gateway Trail to the south part of the park, allowing pedestrians to walk through the site and then loop back. This spine intersects with proposed east-west connections between the neighbourhoods, the playground, and the path to Archibald Street, formalizing the connections indicated by desire lines.

Once the Gateway Trail is extended to Archibald Street, the existing old, incomplete sidewalk south of the overpass will become irrelevant and can be removed.

Intersections or connection points are shown as nodes, which are strategic locations for site features such as gathering areas or site furniture.

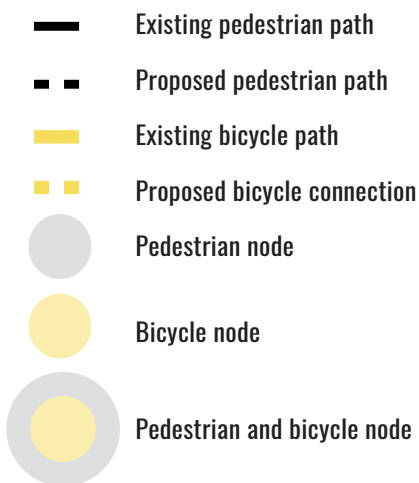


Fig. 7.4.3 Critical connections. (Map data: Google © 2021 Maxar Technologies)



## Critical views

This map shows critical views, as determined through the site analysis. Since the design will focus on the north part of the site, the diagram does not identify critical views from the area south of the overpass. This schematic diagram serves as a basis for the design.

Since most people will enter the park from the north via the Gateway Trail or Talbot Avenue, the view from Talbot Avenue is critical. The park should draw people in, and the entrance experience should be intriguing and rewarding.

The proposed east-west paths between the neighbourhoods should be clearly visible from both ends to promote easy navigation. The playground should be highly visible to promote surveillance and safety.

Views to unique site features such as the overpass and the active railway should be highlighted.

As Nairn Avenue is a major thoroughfare, views from the overpass are critical. The design should be legible and intriguing when viewed from the overpass.



Fig. 7.4.4 Critical views. (Map data: Google © 2021 Maxar Technologies)



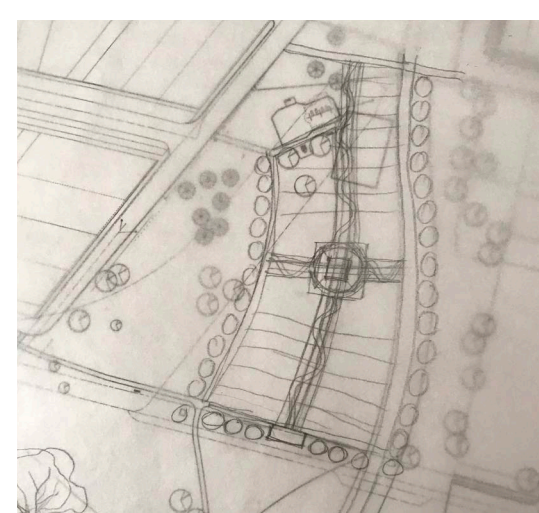
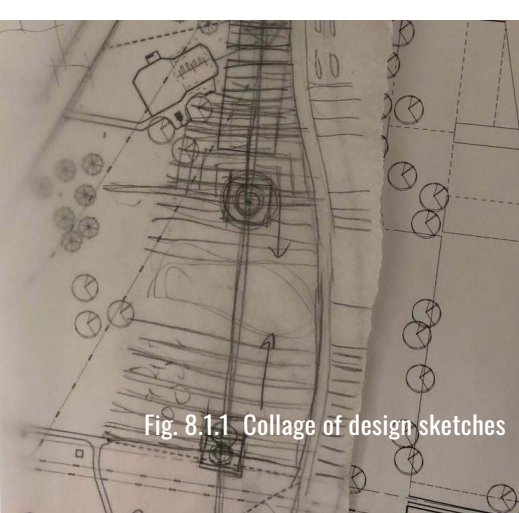
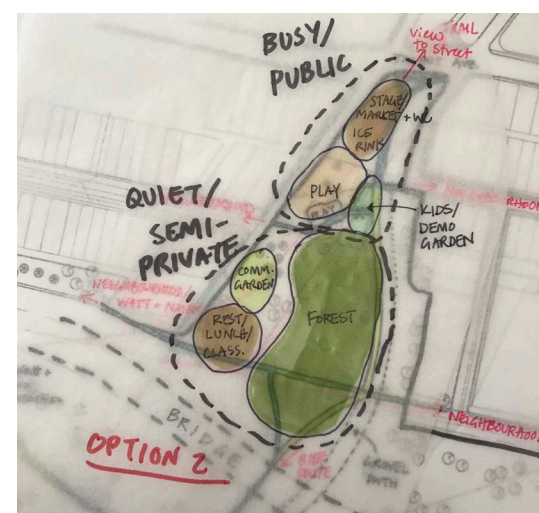
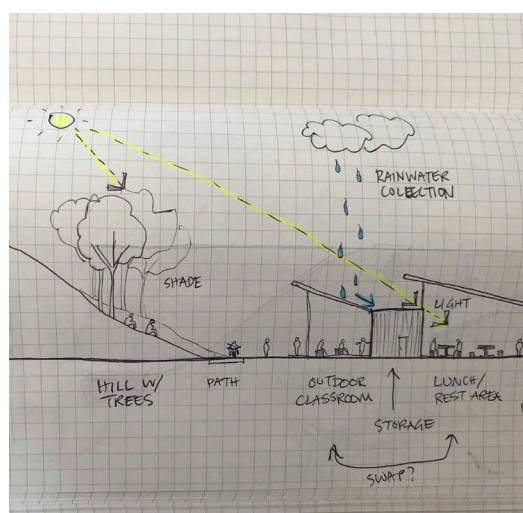
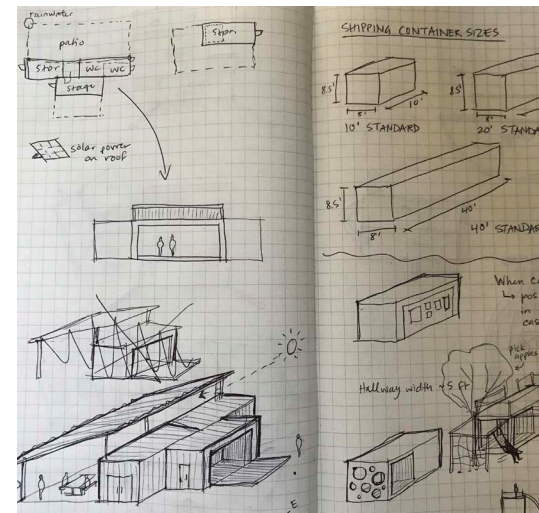
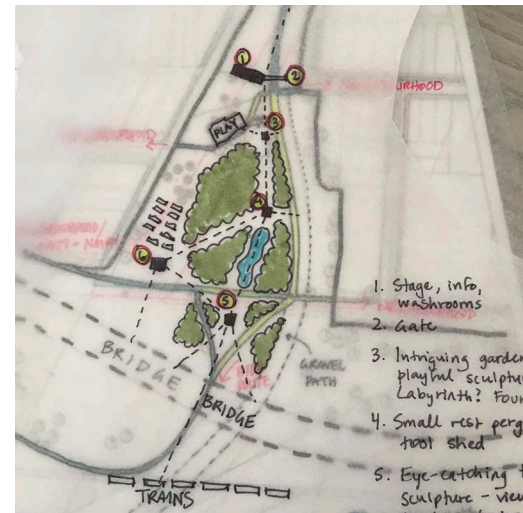
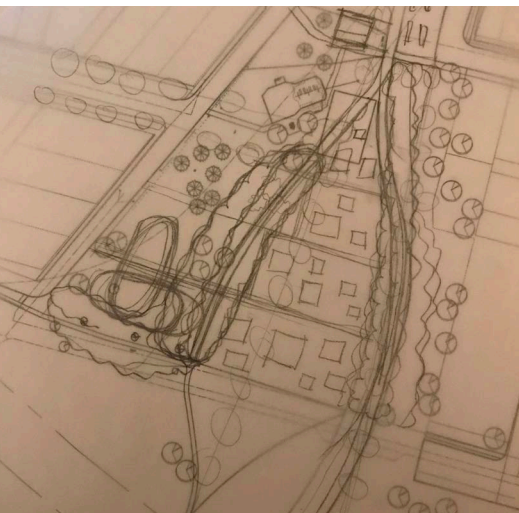
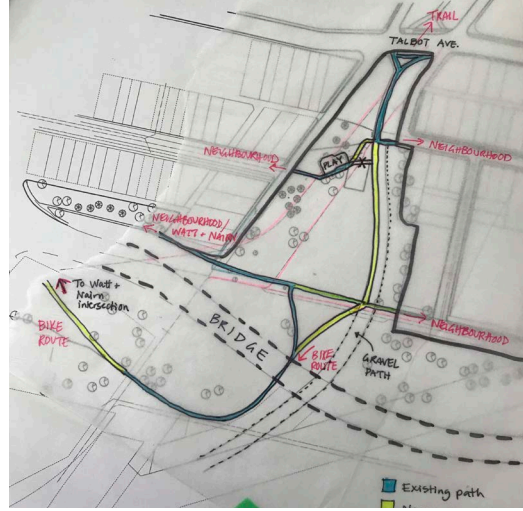
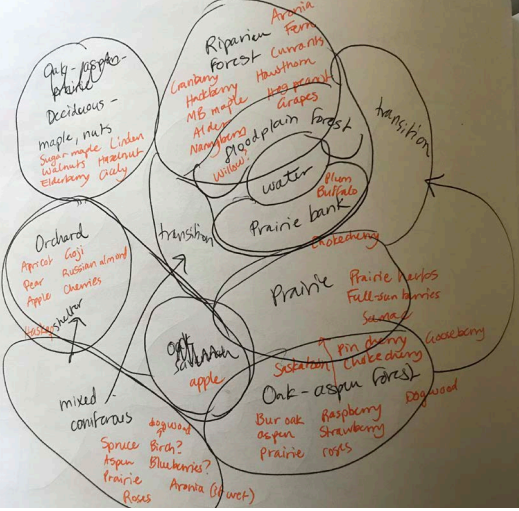


Fig. 8.11 Collage of design sketches

# 08 DESIGN

## 8.1 INTRODUCTION

The design of a public food forest at El Tassi Park is the culmination and integration of all insights gained throughout the previous chapters. Insights from Chapter 5 - Community Relationships and Chapter 6 - Case Studies led to the pursuit of a community-based approach, which strongly influenced the design strategy. The design process and elements are intended to build positive relationships with and within community, as discussed in Chapter 5 – Community Relationships. The design builds on the conclusions reached in Chapter 7 – Analysis. Responding to the discussion in Chapter 4 – Urban Agriculture in Public Parks, the design aims to present an unfamiliar concept (i.e. a food forest in a public park) within a familiar aesthetic language by creating a clearly defined layout or “scaffold” within which the forest can develop. The layout is inspired by the Middle Eastern paradise garden, which provides a historic precedent for food production in an ornamental greenspace. Lastly, as stated in Chapter 6 – Case Studies, the implementation plan and community engagement processes are just as important as the design itself – so the chapter concludes with a detailed discussion of the roles and responsibilities of each party involved, as well as the project’s phasing, construction, community engagement strategies, and twenty-year timeline.

## 8.2 APPROACH

### Top-down thinking, bottom-up action

The research and case study portions of this practicum have revealed that when designing a food common, it is not enough to simply create a show-stopping design and assume that the project will be a success. How the project is conceived, designed, implemented, and managed is critically important, and the roles of those involved must be defined. Bukowski and Munsell (2018), Viljoen and Bohn (2014), and the case studies of Kamloops Public Produce, Beacon Food Forest, and Henteleff Park demonstrate the strength of a community-led approach supported by professional partnerships. A community’s sense of ownership and internal motivation is key to the success of food commons projects. This can be summarized as “top-down thinking, bottom-up action” (Holmgren, 2011). Accordingly, I propose that the public food forest at El Tassi Park be designed with the community and led by the community, with the collaborative support of local government agencies and design professionals.

To enhance the sense of community ownership, the design would be designed and constructed with community volunteers to the greatest extent possible. A landscape architect would be involved during the design process, serving as a liaison between the community and the City to create a shared vision for the space that meets both community needs and the City’s standards for public parks. Once constructed,

the park would be managed similarly to Henteleff Park, where the City contributes standard park resources (e.g. labour, funding) and the community manages the planting events, fundraising, and other special programming. Key members of the food forest community would form a board, providing ongoing leadership and liaising between the City of Winnipeg, design professionals, and the community.

This approach somewhat complicates my role as “designer” for this practicum. While I have a theoretical basis for why a public food forest would be appropriate at El Tassi Park, I have no idea whether the community would actually be interested in such a project. I also do not know how the City of Winnipeg would respond to such a proposal. If I were to actually initiate an effort to realize this project, extensive community consultation and meetings with the City would be necessary.

In addition, since the project would be designed with the community, it is impossible to create a “final design” at this point. I assume that if community members were interested in this project, the design in this practicum would be presented as an option or a starting point, but the final design would likely look much different. The design, implementation, and management approach presented in this practicum, therefore, represent only one possibility for how this project might be realized. The design will be presented at a conceptual level, as it does not make sense to iron out precise details such as planting plans or construction details at this point.

## Design principles

Based on previous research and discussions, the following design principles guide the design:

1. **SIMPLICITY:** Since the majority of the project would be constructed by the community, the design needs to be simple. The geometry should be straightforward (e.g. straight lines and right angles rather than curves or obscure shapes). Repetitive, simple forms and patterns are advantageous. Site elements should be easy to construct and repair using simple methods and readily available materials.
2. **MODULAR:** The design should allow for a range of outcomes, as community-led projects

are contingent upon the level of community participation, available funding, and the unique insights, goals, and desires of each individual member. Projects sustained through volunteer efforts will not progress at the same rate as contracted work. Therefore, the design should not aim for a state of completion, because completion might never happen. It should be flexible enough that the site looks attractive and inviting no matter how much of the project has actually been completed, ensuring that the site is still usable as a public park. A modular design that can be easily expanded as time and resources allow is ideal.

3. **MULTIFUNCTIONALITY:** The park should not rely on the food forest alone to draw in the community. A one-dimensional space is less resilient over the long term. The design should integrate the park’s existing programming, such as the playground, hockey rink, and trails, while also creating multifunctional spaces that complement and enhance the food forest and support other community activities. A variety of functions and programming opportunities will attract a greater variety of people. Beacon Food Forest exemplifies this through its diversity of spaces including a kids’ play area, individual garden plots, and gathering places.
4. **SUPPORTING RELATIONSHIPS:** Insights from Bukowski and Munsell (2018), Beacon Food Forest, and Kamloops Public Produce have demonstrated the importance of community relationships for the success of food commons projects. In order to retain volunteers and sustain the project over the long term, participants need to feel a sense of belonging, camaraderie, connectedness, and mutual understanding. As previously discussed in Chapter 5, designs that consider gathering spaces, signage, accessibility, safety, and aesthetics can help to create a place that is engaging, cooperative, inclusive, and enjoyable to spend time in, which promotes the development of relationships within the food forest community. These considerations will be incorporated into the design. Other non-design strategies for community engagement, such as events and marketing strategies, will be explored later with the Twenty-Year Timeline & Engagement Strategies table (Fig. 8.7.9).

## 8.3 DESIGN CONCEPT: PARADISE GARDEN

### Background

The design concept for El Tassi Park is inspired by the paradise garden, an ancient garden archetype originating in the Middle East. Jellicoe (1995, p. 23) explains the origins of the paradise garden:

The first designed garden rose from the contemplation of the miraculous effect of irrigation on a dead world. A rich green oasis, patterned solely according to the science of agriculture, spread like a vast carpet between the Tigris and Euphrates [rivers]. All gardens

were an idealization of this scene. They were laid out geometrically within protecting walls and their primary contents were channels of irrigation and trees beneath which to recline.

The geometric layout of irrigation systems led to paradise gardens' rectilinear shape. In the hot desert climate with few trees, irrigation made possible the growth of shade trees, and thus trees became objects of veneration in paradise gardens (Jellicoe, 1995). Irrigation also enabled a reliable means of food production, and so paradise gardens strongly emphasized edible plants, "containing theoretically all the fruits of the earth" (1995, p. 23). In 1626 when Sir Thomas Herbert visited what is now modern-day Iran to see the city of Isfahan, a city that was designed based on the paradise garden, he described the

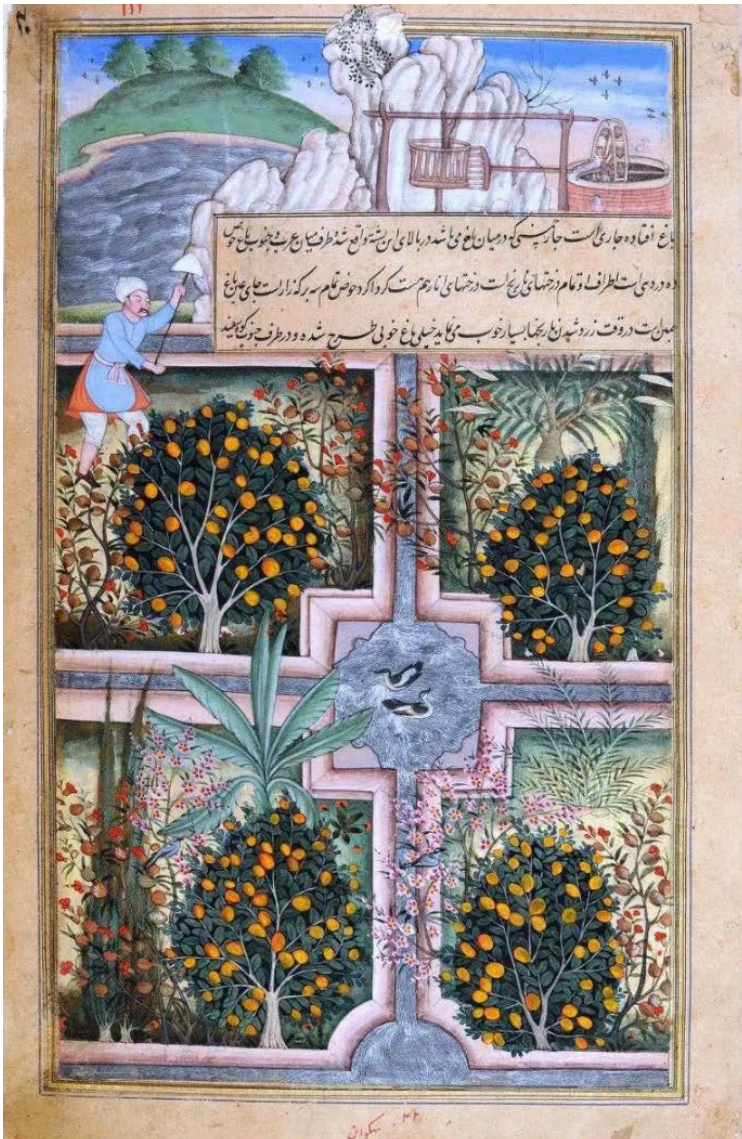


Fig. 8.3.1 Historic paradise garden painting, emphasizing fruit trees. (Credit: Public Domain)

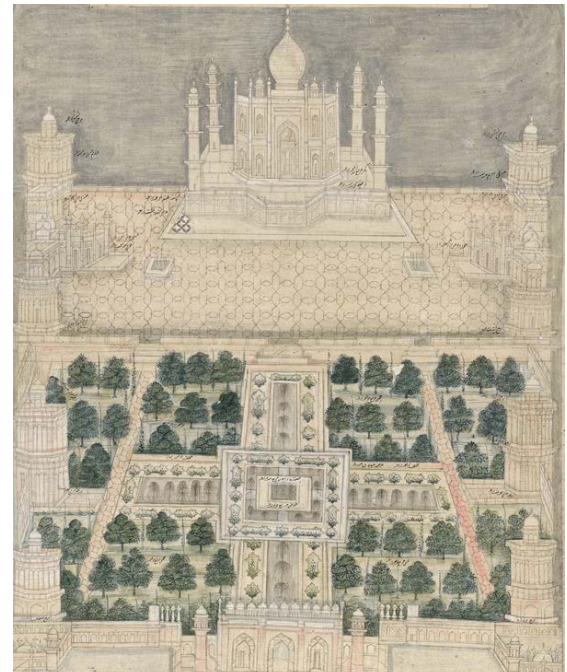


Fig. 8.3.2 Drawing for the Taj Mahal garden, highlighting trees in green. (Credit: Public Domain)

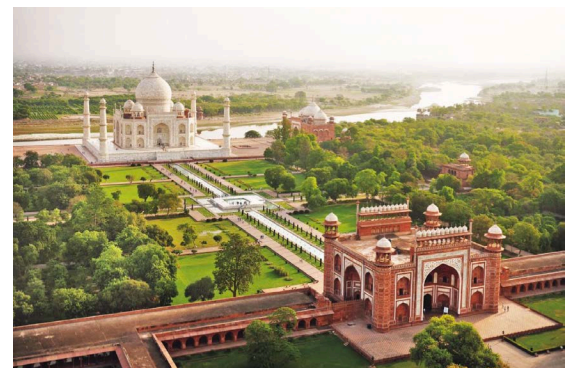


Fig. 8.3.3 Mughal paradise garden at the Taj Mahal in India. (Credit: Ujjwal goel2005)

abundant diversity of trees (1995, p. 38):

... lofty pyramidal cypresses, broad-spreading chenars, tough elm, straight ash, knotty pines, fragrant mastics, kingly oaks, sweet myrtles, useful maples; and of fruit trees are grapes, pomegranates, pomecitrons, oranges, lemons, pistachios, apples, pears, peaches, chestnuts, cherries, quinces, walnuts, apricots, plums, almonds, figs, dates, and melons... also flowers rare to the eye, sweet to the smell and useful in physic.

Paradise gardens were also inspired by religious mythology. The Islamic Qur’an and the Judeo-Christian Old Testament share a common origin story of the Garden of Eden, the original “paradise garden” and representation of heaven on Earth (Jellicoe, 1995; Hamed, 1994). The Qur’an describes in vivid detail the colors, sounds, smells, tastes, spatial elements, microclimates, trees, flowers, and waters of Eden, which were carefully translated into the design of the paradise garden, motivated by a religious duty to accurately represent heaven (Hamed, 1994).

Eden was supposedly located north of Babylon, where it was nourished by two “rivers of life,” or the Tigris and Euphrates rivers (Jellicoe, 1995). In the paradise garden, these channels were represented by water canals with a pavilion at each end, which divided the property into four smaller, square gardens. This typical quadrilateral layout was known as *charbagh* (meaning “four gardens”). At the centre of Eden where the “rivers of life” intersected was the Tree of Life – the symbolic source of all life on Earth – which was represented in the paradise garden by a refreshing fountain or a shade pavilion. Since paradise gardens were usually large, elaborate spaces owned by royalty or high-class members of society, there was often a palace at one end overlooking the garden and an entrance gate at the other. The garden was typically walled off to preserve its purity and to limit access to the wealthy elites. Figure 8.3.1 illustrates the layout and components of a typical paradise garden.

Although the design of paradise gardens was based on ideas that were culturally significant to ancient Persia, it had a significant impact on garden design all over the world. Over time, the paradise garden form became archetypal as it spread to other civilizations such as India, China, Italy, and Western Europe

(Jellicoe, 1995). In these new contexts, the garden design was adapted to represent the cultural and aesthetic ideas of those societies, such as the central circle added to the Mughal gardens of ancient India, which represented the mysteries of the universe (1995). Paradise gardens became the inspiration for many Renaissance gardens in Europe, although as previously discussed, the emphasis on food production was lost over time (Hamed, 1994).

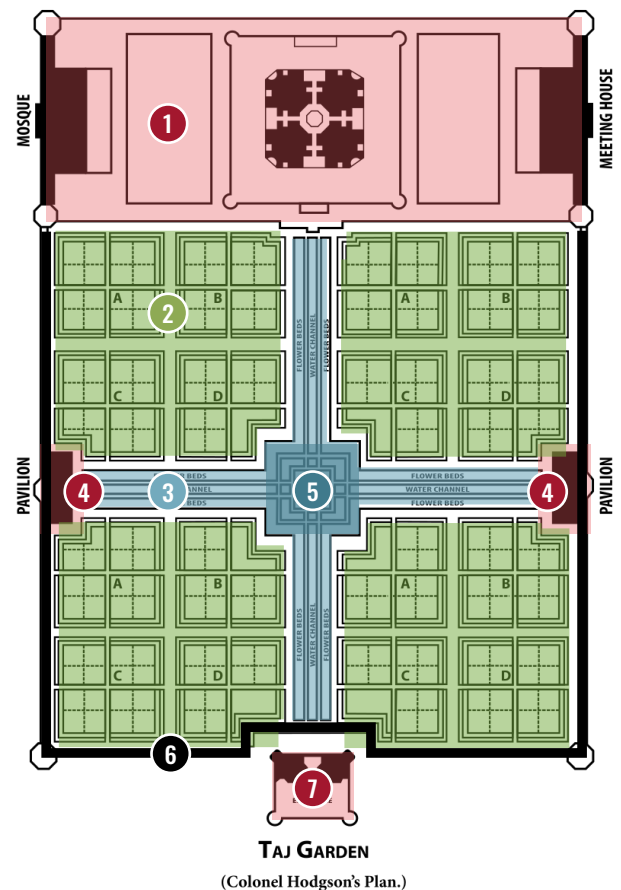


Fig. 8.3.4 Diagram showing typical paradise garden components. (Credit for base image: Villiers Stuart)

- 1 Palace
- 2 Four gardens (Charbagh)
- 3 Canals / “rivers of life”
- 4 Pavilions
- 5 Central fountain, pavilion, or “Tree of Life”
- 6 Walls
- 7 Gate

## Relevance to the project

The paradise garden is an appropriate theme for a public food forest at El Tassi Park for a number of reasons. First, paradise gardens offer a historic precedent for food production in an aesthetically-minded greenspace. This provides a point of reference for the idea of a food forest in a public park, making it seem less unconventional or unfamiliar.

Second, ancient paradise gardens were multi-functional spaces, which is also an important design consideration for public parks. Although post-Renaissance iterations of paradise gardens prescribed a one-dimensional use – specifically, walking through or sitting in the garden – ancient paradise gardens were designed to accommodate a variety of functions, including food production, movement, formal and informal gathering, prayer and meditation, individual and group learning, plant identification, and active and passive recreation (Hamed, 1994). This multi-functionality aligns with the diverse uses of public food forests as places of production, leisure, education, and relaxation.

Third, ancient paradise gardens were designed to be places of sustenance for humans as well as for animals, plants, and other living beings – an intention aligning with the philosophy of permaculture and food forests. Hamed (1994) describes the paradise garden as:

...a life-sustaining oasis, benefiting humans, birds, and animals. It is an orchard/garden, growing fruits and often aromatic herbs for human consumption. Its trees provide food, water, and resting places for birds, and its walls may contain doves. It provides water for all kinds of creatures. In short, it is as useful and productive as it is beautiful.

Modern permaculture gardens and food forests strive to achieve those three critical qualities – usefulness, productivity, and beauty – and paradise gardens demonstrate all three.

Fourth, paradise gardens sought to use resources sustainably, which aligns with the philosophy of permaculture and food forests. As Hamed (1994) explains, “Water is a life-sustaining resource, and the Islamic garden designer treated it as such. Recognizing how limited such a natural resource is in the arid lands, he always used it with restraint.” Rather

than a gushing, spraying fountain, water was subtly highlighted as a thin, gentle, single stream of water moving through the canals (1994). Food forests also strive to conserve water by capturing it through swales and creating humidity-trapping microclimates.

Fifth, the idea of the paradise garden as an “oasis in the desert” is metaphorically effective. The neighbourhoods surrounding El Tassi Park are located within a mild to moderate food desert. A public food forest would act as an oasis within the neighbourhoods, providing an abundance of fresh produce, lush greenery, shade, and opportunities for leisure and relaxation – similar to the functions of traditional paradise gardens.

Lastly, the mythological symbols used in paradise gardens are common to many religious and cultural traditions, creating a sense of common ground at the food forest. The Garden of Eden origin story is common to three major world religions – Islam, Judaism, and Christianity – and many people groups throughout the world have some sort of “tree of life” symbol or mythology, including Celtic, Hindu, Buddhist, Germanic, Slavic, Turkic, and Norse traditions in Europe and Asia; and Cree, Iroquois, Anishinaabe, Apache, Navajo, Salish, Lakota, and Sioux traditions in North America. In the very diverse neighbourhood surrounding El Tassi Park, the sharing of these myths and symbols can serve to create a sense of common ground and unity surrounding the food forest, deepening the project’s significance. It can serve as a meaningful reminder that we are more similar than we are different in our human origins, cultural traditions, and need to eat. This can help to foster a sense of belonging, inclusivity, and commonality that is important for the success of food commons.

## Translating the paradise garden elements

While the paradise garden concept aligns with the project’s context and purpose, it would not be appropriate to simply insert a typical paradise garden onto the site at El Tassi Park. The design needs to respond to the site’s specific context, and the elements need to be represented in a locally significant and meaningful way. The components of a paradise garden will be translated as follows (refer to Fig. 8.3.5):

1. **PAVILION & PLAZA:** The palace becomes a plaza with

a pavilion building. A regal, exclusive palace is obviously not appropriate for a public park where all are welcome. The pavilion building will provide shelter and storage, and it will serve as the main gathering place. It will be located near the front of the park as an inviting visual feature and destination.

2. **TWO FOREST GARDENS:** The four charbagh gardens here become two larger food forest gardens, with one based on an orchard and the other based on native aspen-oak forest. Given the neighbourhoods' diversity, there could be many different perspectives on what a food forest "paradise" looks like. For some, the ideal food forest may be a human-designed space with certain aesthetic rules regarding layout, rhythm, and repetition - like an orchard. For others, it may be a nature-inspired forest where the rules of nature regarding diversity, competition, and ordered chaos govern the design - like a natural forest. Given these potentially contrasting viewpoints, the design tells the story of a paradise food forest in two ways - one based on a traditional gardening approach, and the other celebrating Indigenous traditional knowledge and native Manitoba ecosystems.
3. **CANALS / RIVERS OF LIFE:** Water is likely cost-prohibitive for a community-based project, so water is represented by the undulating, wave-like movement of prairie grasses. For thousands of years, the tall grass prairie sustained pollinators and provided the rich, fertile soil that supports agriculture in Manitoba today. Here, the prairie acts as the paradise garden's "rivers of life," providing nourishment and sustenance for the food forest by attracting pollinators and enriching the soil.
4. **SITE FURNITURE:** Located at path intersections where sight lines terminate, the pavilions are important visual elements. Here, the pavilions become site furniture such as educational signage, benches, or art installations. The prominent location of these elements will draw attention and heighten their importance.
5. **TREE OF LIFE:** The central element that anchors the design will be represented by a mighty bur oak tree – Manitoba's Tree of Life. Bur oak (*Quercus*

*macrocarpa*) is a common native tree in Winnipeg, and it is an incredible species: it can survive the heat of prairie fires; its deep roots allow it to survive through prolonged droughts; it can endure the most frigid winter storms; it has a long lifespan; and its acorns have provided food to wildlife and humans for centuries. *Quercus* is derived from the Celtic language, meaning "tree

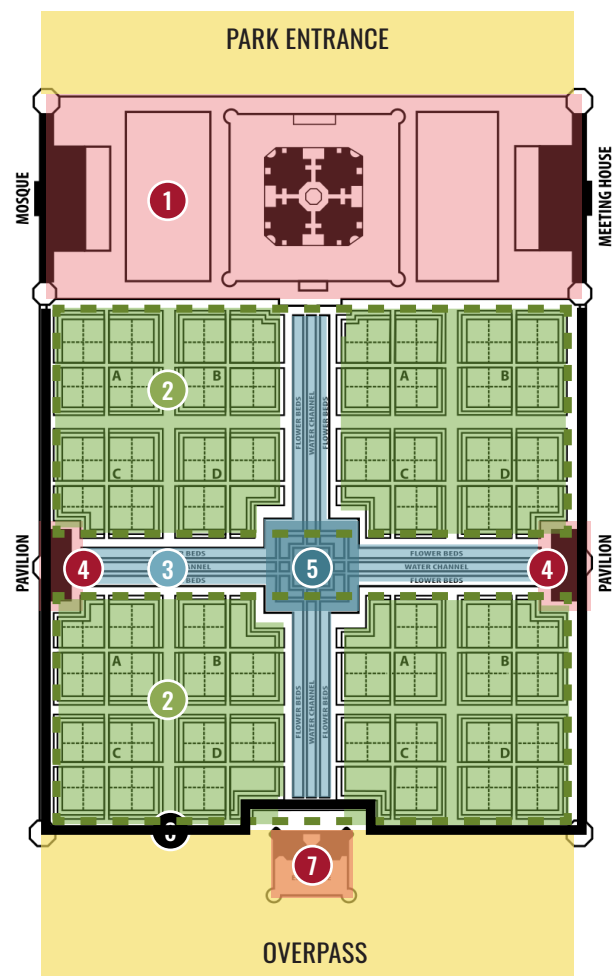


Fig. 8.3.5 Representation of paradise garden elements for the design. (Credit for base image: Villiers Stuart)

- 1 Plaza & pavilion
- 2 Two forest gardens (orchard & native forest)
- 3 Prairie grasses
- 4 Site furniture
- 5 Bur oak "Tree of Life" with gathering/rest area
- 6 Rows of trees
- 7 Lookout deck
- 8 Prairie gardens

above all others,” and *macrocarpa* comes from the Greek *makros* (“large”) and *karpos* (“fruit”), referencing its large acorns (Lauriault, 1989). There will be places around the Tree of Life to contemplate its significance, participate in ceremonial events, and relax under its shade.

6. **ROWS OF TREES:** Rather than the oppressive kind of walls that traditionally served to exclude certain people from the paradise garden, the food forest will have softer “walls” of trees that serve to delineate the space, create a sense of enclosure, and provide a pleasant walking experience along the paths.
7. **LOOKOUT DECK:** Located at the south end of the park near the overpass, the gate becomes a lookout deck, serving as a visual gateway to views of the trains, overpass, and prairie beyond.
8. **PRAIRIE GARDENS:** The prairie gardens are an additional element that do not represent any particular part of the paradise garden; they serve to complement and highlight the other park features. There are two kinds of “prairie garden” – one is actual tall grass prairie, and the other is community gardens filled with herbaceous edible plants.

Located at the park entrance, the community garden “prairie” introduces the idea of food production at the park. At the end of the community gardens, the plaza signals the transition to a new kind of garden space – the food forest. Visitors will then walk through the forest along the prairie “canals,” which foreshadow the greater prairie to come.

After walking through the forest, the arrival point at the end of the park will be a large expanse of tall grass prairie, creating the foreground for views to the overpass and trains.

## 8.4 SCHEMATIC DESIGN

The layout of the design components and the connections between them serve to connect communities in all four directions (Fig. 8.4.1). As shown in the circulation analysis maps, El Tassi Park functions as a major intersection for bicycle and pedestrian paths. In the design, the plaza will act as the central node within this network, connecting the neighbourhoods to the east and west and the bicycle route (Gateway Trail) from north to south. In this way, the food forest will bring people together at the site scale, neighbourhood scale, and larger Winnipeg scale via the cycling network.

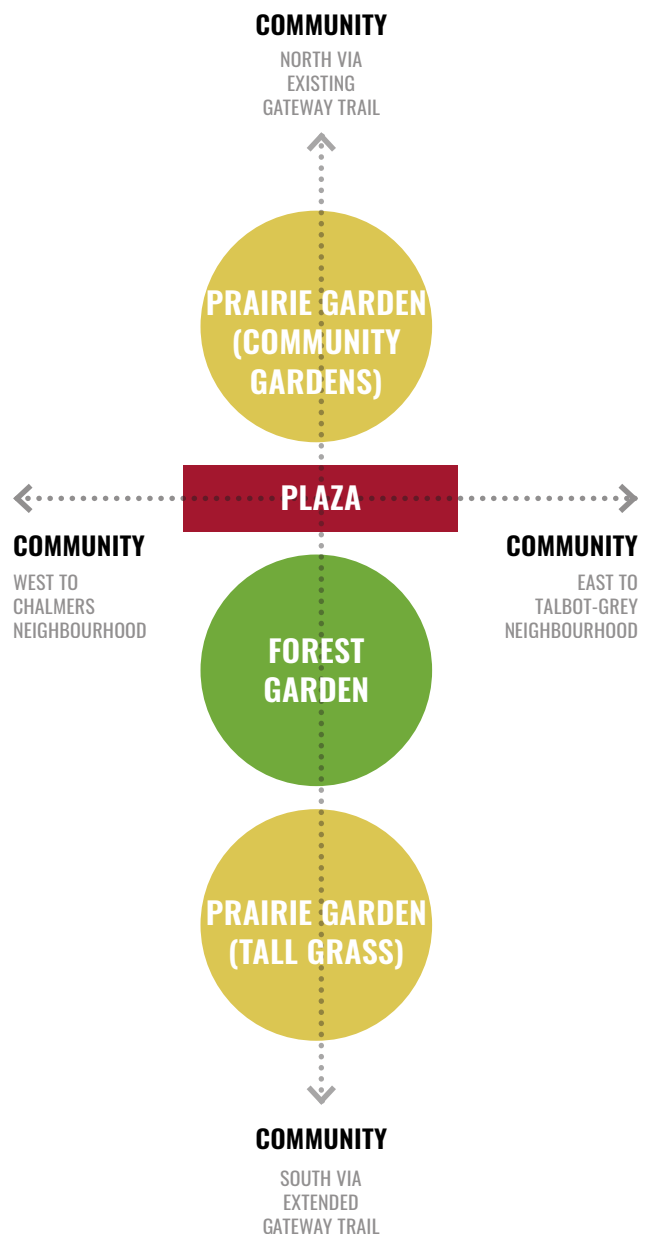


Fig. 8.4.1 The design connects communities in all four directions.

## Schematic layout

The layout of the design components are shown in the bubble diagram (Fig. 8.4.2), and the rationale for each component is explained below.

1. **COMMUNITY GARDENS:** Located at the park entrance, the community gardens greet visitors with familiar edible plants and a familiar garden form. Establishing the community gardens early on can help to create an initial gardening community that can later support the food forest. As visitors walk through these gardens, they will have opportunities to interact with the gardeners. The low form of this “prairie garden” allows for views to the pavilion and the food forest beyond, drawing people into the park. Spanning across both sides of the Gateway Trail, the gardens immerse visitors in the food production landscape.
2. **PLAZA & PAVILION:** The plaza connects the community gardens, food forest, and paths as a central node and main gathering space. The building will include washrooms, storage, an outdoor classroom area, and seating/rest areas. It will support private events, public events, and informal gatherings.
3. **PLAYGROUND:** The existing playground is next to the orchard, inviting kids to learn about food. Play spaces complement the food forest where parents and caretakers are working, ensuring that the park meets the diverse needs of different age groups.
4. **FOOD FOREST:** The orchard is located on the north side since most people will enter from that direction and will be drawn in by recognizable orchard plants, such as apple trees. The native forest on the south side offers an eco-learning experience next to the prairie – two important native Manitoba habitats.

Although a large area is designated for the food forest, the forest may not actually fill the entire area. It will be planted in modules, with the orchard expanding from the north and the native forest expanding from the south. The two forests may eventually meet, or they may not; the “final” form will ultimately be determined by the community maintaining the site. How large the food forest becomes will depend on factors such as number of core participants, the desired level of maintenance, and the preferred use and programming of the site.

The two forest masses act as visual thresholds or semi-transparent veils that partially obscure views to the overpass, hinting at the dramatic views to come and creating a sense of anticipation. As pedestrians move from the park entrance toward the overpass, they will experience a contrasting sequence of quiet, enclosed forests and open, exposed lawn, building up to a rewarding arrival at the wide-open prairie with clear views to the overpass and the trains beyond.

5. **TREE OF LIFE:** The bur oak Tree of Life is located centrally at the junction of the “canal” paths. The central location suggests its importance as the “mother tree” of the food forest. A small, informal gathering area surrounds the tree.
6. **LOOKOUT DECK:** The lookout deck is the arrival point, rewarding visitors with incredible views.
7. **TALL GRASS PRAIRIE:** The prairie creates a striking foreground for views to the bridge and trains.
8. **RINK:** The rink has been relocated to a strategic location that is far enough from pedestrian paths, roads, and buildings to mitigate safety concerns of flying pucks.
9. **CANAL PATHS:** These paths with prairie “canals” follow the pattern of the charbagh. Instead of turning around at the end of the Gateway Trail, visitors can enjoy looping through the park. Even if the food forest is not significantly developed, the paths will be enjoyable during all phases of design and will not look out of place.
10. **SIDEWALKS:** The paved sidewalks formalize the existing pedestrian connections evident in the desire lines, connecting the neighbourhoods and the park features. The contrasting curve on the east side highlights the significance of the railway.
11. **TRAIL EXTENSION:** The Gateway Trail extends to Archibald Street. The curved path contrasts the geometry of the site, highlighting the significance of the railway. The trail offers an immersive experience through the forest, prairie, and community gardens.
12. **ROWS OF TREES:** The rows of trees create a sense of enclosure and provide shade along the paths.
13. **SITE FURNITURE:** Site furniture such as seating, signage, and art installations will be located at these visually prominent nodes.

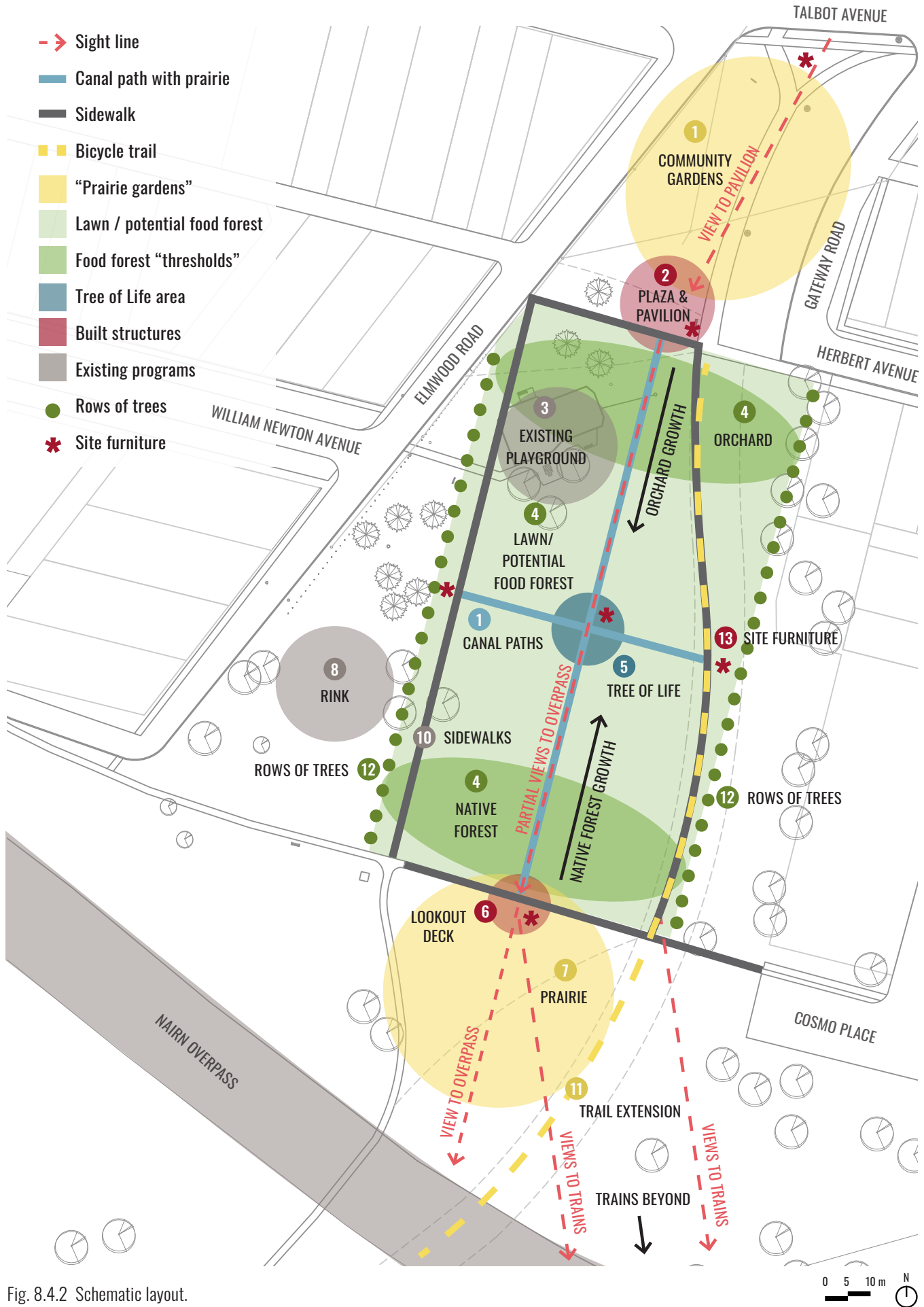


Fig. 8.4.2 Schematic layout.



## 8.5 MATERIALS

As past and present railways are significant at El Tassi Park, the material palette will draw from rugged, industrial materiality of railways (Fig. 8.5.2).

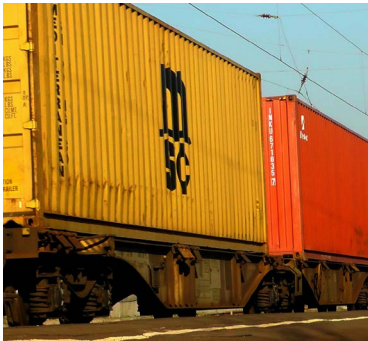
**CRUSHED GRANITE:** Inspired by black railway ballast, the surfacing for the plaza and “canal” paths will be crushed granite. Finely crushed, permeable gravel is environmentally friendly and accessible, and it also creates an audible and tactile walking experience. The sidewalks and bike path, however, will be paved.



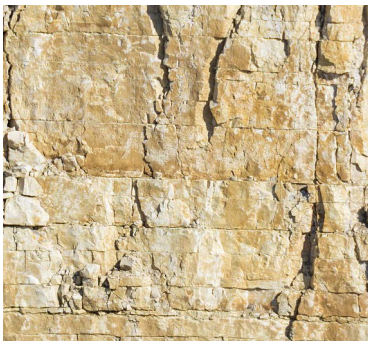
**WEATHERED METAL:** Reminiscent of an old metal rails, rusted metal will contrast against the black granite surfaces. Upcycled, weathered I-beams will be used for structural support of the pavilion building and will be featured in the site furniture. The prairie “canals” will be lined on either side with corten steel edging, symbolizing the two rail lines of an abandoned railway infiltrated by ruderal grasses (Fig. 8.5.3). Actual metal rails will not be used due to their low availability, high cost, and difficulty to work with.



**WOOD:** Based on wooden railway ties, wood will be used for seating and other site furniture, the lookout deck, and structural elements of the pavilion building. The wood will be upcycled as much as possible, potentially using recycled telephone poles or wood from trees cut down due to Dutch Elm Disease. Actual railway ties will not be used because they are not safe to touch due to chemical treatment.



**SHIPPING CONTAINERS & CORRUGATED METAL:** Reminding park visitors of the passing freight trains south of the site, the pavilion building will be made from a recycled shipping container. Continuing this theme, the community garden beds will incorporate corrugated metal, which is similar to the material used for shipping containers but much easier to work with, more available, and less expensive.



**LIMESTONE:** Limestone does not particularly relate to railways, but as the primary bedrock material of Winnipeg, it is geologically significant, and it fits with the rugged materiality of the palette. Rough-cut limestone blocks will be used for informal seating.

Fig. 8.5.1 Material palette. (Credit: Pixabay)



Fig. 8.5.2 Railways are the inspiration for the material palette. (Credit: Clipart Library)



Fig. 8.5.3 Ruderal grasses taking over an abandoned railway inspired the materials for the prairie “canals.” (Credit: Pixabay)

## Plant palette

Since the food forest would be designed and planted by the community, it is not appropriate to design a detailed planting plan for this practicum – so instead, a list of plant options has been provided. The list includes plants suited to Winnipeg’s soil, climatic, and ecological conditions, demonstrating that despite the limitations of Winnipeg’s hardiness zone (3a), there are still many possibilities for creating an interesting and diverse food forest using native and hardy exotic species.

The list details each plant’s human and ecological functions (see Section 4.4 for explanation of permaculture functions). The native forest contains plants found in Manitoba’s aspen-oak parkland, many of which are shade tolerant, while the orchard plants are mostly exotic and do best in full sun. The orchard also emphasizes ornamental edible plants since it is the first area visitors will see when entering the park. Over time as the forest canopy becomes more closed, the understory composition may need to be modified to include more shade-tolerant plants.

PLANT TYPE	BOTANICAL NAME	COMMON NAME	NATIVE?	LIGHT	PURPOSE / FUNCTION
<b>ORCHARD</b>					
<b>TREES</b>	<i>Malus spp.</i>	Apples		○	Edible fruit. Showy flowers. Insectary. Accumulates potassium.
	<i>Prunus mandshurica</i>	Manchurian apricot		○	Edible fruit. Showy flowers.
	<i>Prunus x</i>	Hybrid plum	Partly	○ ●	Edible fruit. Showy flowers.
	<i>Pyrus ussuriensis</i>	Manchurian pear		○ ●	Edible fruit. Showy flowers.
<b>SHRUBS</b>	<i>Aronia melanocarpa</i>	Chokeberry		○ ●	Edible berries. Showy flowers. Insectary. Supports wildlife.
	<i>Hippophae rhamnoides</i>	Sea buckthorn		○	Edible and medicinal berries. Nitrogen fixer. Winter food for birds. Showy silver leaves and orange winter fruit.
	<i>Lonicera caerulea</i>	Haskap / honeyberry		○ ●	Edible berries. Attracts bees. Tidy shrub.
	<i>Lycium barbarum</i>	Goji berry		○ ●	Edible berries.
	<i>Prunus tenella</i>	Russian almond		○ ●	Edible nuts. Showy and fragrant flowers.
	<i>Prunus tomentosa</i>	Nanking cherry		○ ●	Edible fruit. Profuse, showy flowers. Insectary.
	<i>Prunus x</i>	Tart cherry		○ ●	Edible fruit. Showy flowers.
	<i>Ribes × nidigrolaria</i>	Jostaberry		○ ●	Currant and gooseberry hybrid with thornless, edible berries.
	<i>Ribes aureum</i>	Golden currant		○ ●	Edible fruit - best tasting currant species. Clove-scented flowers. Insectary.
	<i>Rosa rugosa</i>	Rugosa rose		○ ●	Edible hips and flowers. Showy, fragrant flowers. Flowers often used in Middle Eastern cuisine. Biggest rosehips.
	<i>Rubus x</i>	Raspberries	Partly	○ ●	Edible berries.
	<i>Sambucus canadensis</i>	Elderberry		○ ●	Edible berries and flowers. Birds use for shelter and nesting.
<b>PERENNIALS</b>	<i>Asparagus officinalis</i>	Asparagus		○ ●	Edible shoots. Insectary. Attractive wispy foliage.
	<i>Allium schoenoprasum</i> , <i>A. tuberosum</i>	Chives, garlic chives		○	Edible bulbs, leaves, flowers. Deters deer and pests.
	<i>Fragaria x</i>	Strawberries	Partly	○ ●	Edible berries
	<i>Galium odoratum</i>	Sweet woodruff		● ●	Edible and fragrant leaves. Excellent groundcover / weed barrier. Attracts bees.
	<i>Helianthus maximilliani</i>	Maximilian sunflower	Y	○ ●	Edible tubers and seeds. Showy flowers. Insectary - host for Silvery Checkerspot. Food for birds - seeds. Weed barrier. Green mulch. Fuzzy stems deter deer and rabbits.

PLANT TYPE	BOTANICAL NAME	COMMON NAME	NATIVE?	LIGHT	PURPOSE / FUNCTION
	<i>Helianthus tuberosus</i>	Jerusalem artichoke		○ ●	Edible tubers and seeds. Showy flowers. Insectary. Birds eat seeds.
	<i>Hemerocalis spp.</i>	Daylily		○ ●	Showy ornamental. Edible flowers and roots. Good weed barrier.
	<i>Hosta spp.</i>	Hostas		● ●	Edible shoots. Showy ornamental good for shady areas / under trees.
	<i>Rheum spp.</i>	Rhubarb		○ ●	Edible stalks. Mineral accumulator. Shades out weeds.
	<i>Rumex acetosa</i>	Sorrel		○ ●	Edible leaves - lemony taste.
	<i>Symphytum spp.</i>	Comfrey		○ ●	Nutrient accumulator (N, K, Ca, Mg, Fe, Si). Green mulch. Weed barrier. Medicinal leaves (topical). Attracts bees.
	<i>Thymus praecox</i>	Creeping thyme		○ ●	Edible, fragrant leaves. Good groundcover. Deters deer and rabbits.
	<i>Trifolium repens</i>	White clover		○ ●	Edible and medicinal flowers. Nitrogen fixer. Excellent groundcover and weed barrier. Green mulch. Accumulates N and K. Insectary. Tolerates foot traffic.
<b>NATIVE FOREST</b>					
TREES	<i>Acer negundo</i>	Manitoba maple	Y	○	Edible syrup. Seeds support wildlife. Shelterbelt / nurse species.
	<i>Populus tremuloides</i>	Trembling aspen	Y	○ ●	Dominant species in aspen-oak forest. Supports wildlife.
	<i>Prunus americana</i>	Wild plum	Y	○ ●	Edible fruit. Showy flowers. Insectary - attracts spring azure and swallowtail butterflies.
	<i>Prunus pennsylvanica</i>	Pincherry	Y	○	Edible fruit. Showy and fragrant flowers. Supports wildlife.
	<i>Prunus virginiana</i>	Chokecherry	Y	○ ●	Edible fruit. Attracts butterflies. Supports wildlife.
	<i>Quercus macrocarpa</i>	Bur oak	Y	○ ●	Dominant species in aspen-oak forest. Edible acorns. Supports wildlife.
	<i>Tilia americana</i>	Basswood / American linden	Y	○ ●	Edible flowers and young leaves. Medicinal. Insectary.
SHRUBS	<i>Alnus viridus</i>	Green alder	Y	○ ●	Nitrogen fixer. Wildlife food and habitat. Nurse species. Edible leaves (not palatable).
	<i>Amelanchier alnifolia</i>	Saskatoon	Y	○ ●	Edible berries and young leaves. Supports wildlife; nesting site for birds.
	<i>Corylus americana, C. cornuta</i>	American hazelnut, beaked hazelnut	Y	○ ●	Edible nuts. Supports wildlife.
	<i>Crataegus spp.</i>	Hawthorn	Y	○ ●	Edible and medicinal fruit. Winter fruit for birds. Shrikes use spines to impale prey.
	<i>Rosa acicularis</i>	Prickly wild rose	Y	○ ●	Edible hips, flowers, leaves. Showy flowers. Insectary - attracts bees and hairstreak butterflies. Supports wildlife - shelter, nest site, winter food.
	<i>Ribes americanum</i>	Wild currant	Y	○ ●	Edible berries. Insectary. Host to harvester butterfly.
	<i>Ribes hirtellum</i>	Gooseberry	Y	○ ●	Edible berries. Supports wildlife.
	<i>Rubus idaeus</i>	Wild raspberry	Y	○ ●	Edible berries and leaves. Insectary. Supports wildlife.
	<i>Viburnum lentago</i>	Nannyberry	Y	○ ●	Edible berries. Good fall colour. Supports wildlife - winter fruit. Insectary; attracts bees and azure butterflies.

PLANT TYPE	BOTANICAL NAME	COMMON NAME	NATIVE?	LIGHT	PURPOSE / FUNCTION
	<i>Viburnum trilobum</i>	Highbush cranberry	Y	○ ●	Edible berries. Red fall colour. Showy fruit holds into winter. Supports wildlife - winter fruit. Insectary - attracts bees and azure butterflies.
PERENNIALS	<i>Amphicarpaea bracteata</i>	Hog peanut	Y	○ ●	Edible subterranean seeds in pods. Nitrogen fixer. Insectary - attracts hover fly. Deters deer and rabbits.
	<i>Apios americana</i>	Groundnut	Y	◐ ●	Edible tubers. Nitrogen fixer. Insectary.
	<i>Aralia nudicaulis</i>	Sarsaparilla	Y	◐ ●	Edible roots used for root beer and tea. Orange fall colour. Good groundcover.
	<i>Argentina anserina</i>	Silverweed	Y	○ ●	Edible roots. Insectary. Good groundcover that tolerates foot traffic.
	<i>Fragaria virginiana, F. vesca</i>	Wild strawberry	Y	○ ◐	Edible fruit and leaves. Insectary.
	<i>Galium boreale</i>	Sweet scented bedstraw	Y	○ ●	Edible and medicinal nutlets - can be roasted like coffee. Fragrant flowers. Insectary.
	<i>Matteuccia struthiopteris</i>	Ostrich fern	Y	○ ●	Edible shoots (fiddleheads). Attractive foliage.
	<i>Mentha arvensis</i>	Wild mint	Y	○ ●	Edible and medicinal leaves. Insectary.
	<i>Osmorhiza longistylis</i>	Sweet cicely	Y	○ ●	Edible leaves, roots, seeds - anise taste.
	<i>Polygonatum biflorum</i>	Solomon's seal	Y	○ ●	Edible shoots, leaves, roots. Attractive flowers and foliage. Attracts bees and hummingbirds.
	<i>Smilacina stellata</i>	False Solomon's seal	Y	○ ●	Edible shoots. Medicinal.
	<i>Viola canadensis, V. pubescens</i>	Western Canada violet, Downy yellow violet	Y	◐ ●	Edible flowers and leaves. Good groundcover for shade. Insectary; attracts bees and fritillary butterfly.
<i>Vitis riparia</i>	Wild grapes	Y	○ ●	Edible fruit and leaves. Supports wildlife. Insectary.	
<b>TALL GRASS PRAIRIE &amp; "CANALS"</b>					
SHRUBS	<i>Rhus glabra</i>	Smooth sumac	Y	○ ◐	Berries can be soaked to make "lemonade" drink. Red fall colour.
	<i>Rosa arkansana</i>	Prairie rose	Y	○ ◐	Edible hips, flowers, leaves. Showy flowers. Insectary. Supports wildlife - winter food.
	<i>Shepherdia argentea</i>	Buffaloberry	Y	○ ◐	Edible and berries. Nitrogen fixer. Insectary. Food and shelter for birds.
PERENNIAL WILDFLOWERS	<i>Achillea millefolium</i>	Common yarrow	Y	○ ◐	Edible and medicinal leaves. Showy flowers. Insectary - attracts bees, ladybug, hoverfly, parasitic wasps, lacewings. Nutrient accumulator (N, P, K, Cu).
	<i>Agastache foeniculum</i>	Anise hyssop	Y	○ ◐	Edible and medicinal leaves, flowers, shoots, stems - licorice taste. Showy flowers. Insectary - attracts bees, tachinid fly, parasitic wasp, lacewing. Seeds support wildlife.
	<i>Allium stellatum</i>	Wild onion	Y	○ ◐	Edible bulbs, leaves, flowers.
	<i>Artemisia ludoviciana</i>	Prairie sage	Y	○	Aromatic herb. One of four sacred Indigenous plants. Host to painted lady butterfly.
	<i>Asclepias spp.</i>	Milkweed	Y	○	Edible shoots, buds, flowers, seed pods. Showy flowers. Supports butterflies.
	<i>Echinacea purpurea</i>	Coneflower	Y	○ ◐	Medicinal. Showy flowers. Attracts butterflies and hummingbirds.
	<i>Glycyrrhiza lepidota</i>	Wild licorice	Y	○ ◐	Edible and medicinal roots. Nitrogen fixer. Accumulates nitrogen and phosphorus. Insectary. Supports birds.

PLANT TYPE	BOTANICAL NAME	COMMON NAME	NATIVE?	LIGHT	PURPOSE / FUNCTION
	<i>Monarda fistulosa</i>	Wild bergamot	Y	○	Edible and medicinal flowers, leaves - oregano or lemony taste. Showy flowers. Insectary - attracts bees, hoverfly, butterflies. Attracts hummingbirds.
	<i>Solidago canadensis</i>	Goldenrod	Y	○ ●	Edible and medicinal flowers and leaves. Showy flowers. Insectary - attracts lacewings, minute pirate bug, hoverfly, bees. Mineral accumulator.
PERENNIAL GRASSES	<i>Andropogon gerardii</i>	Big bluestem	Y	○ ●	Dominant grass in ecosystem
	<i>Elymus canadensis</i>	Canada wild rye	Y	○ ●	Edible seeds. Common grass in ecosystem.
	<i>Panicum virgatum</i>	Switch grass	Y	○ ●	Dominant grasses in ecosystem
	<i>Schizachyrium scoparium</i>	Little bluestem	Y	○	
	<i>Sorghastrum nutans</i>	Indian grass	Y	○ ●	
<b>OTHER AREAS</b>					
TREES	<i>Celtis occidentalis</i> 'Delta'	Delta hackberry	Y	○ ●	Medium shade tree for picnic areas. Edible fruit. Attractive form.
	<i>Sorbus decora</i>	Showy mountain ash	Y	○ ●	Small tree suitable to plant below power lines around community gardens. Showy flowers and fruit. Fruit is medicinal. Vibrant fall colour. Supports wildlife - birds eat fruit; can last into winter.
	<i>Acer saccharum</i>	Sugar maple		○ ●	"Wall" tree rows around native forest - tolerates shade once forest trees grow. Edible syrup. Red fall colour.
	<i>Juglans cinerea</i>	Butternut		○	"Wall" tree rows east of orchard where there are no paths directly below (nuts drop). Edible nuts. Accumulates nitrogen, potassium, calcium. Supports wildlife.
	<i>Juglans nigra</i>	Black walnut		○ ●	
SHRUBS SURROUNDING COMMUNITY GARDENS	<i>Cornus sericea</i>	Dogwood	Y	○ ●	Hedge. Showy flowers and fruit. Vibrant fall colour. Some have variegated or yellow foliage. Bright coloured stems in winter. Insectary. Berries support birds. Low maintenance. Tolerates road salt.
	<i>Juniperus horizontalis</i>	Juniper	Y	○ ●	Hedge. Edible berries. Low maintenance. Tolerates road salt. Pairs well with dogwood stems in winter.
	<i>Physocarpus opulifolius</i>	Ninebark	Y	○ ●	Hedge. Many interesting foliage colour options. Insectary. Low maintenance. Tolerates road salt.
VINES FOR PERGOLA	<i>Actinidia arguta</i> , <i>A. kolomikta</i>	Hardy kiwi		○ ●	Edible fruit. Some have pink variegated foliage.
	<i>Humulus lupulus</i>	Hops		○ ●	Edible shoots. Fragrant cones used for beer. Attracts butterflies.
	<i>Vitis x</i>	Hybrid grapes	Partly	○	Edible fruit and leaves.
PUBLIC PLANTERS		Various vegetables, herbs, flowers...			Can vary depending on goals - e.g. herb spiral, butterfly gardens, vegetable donation garden, etc.
EVERGREEN SUN SHIELD	<i>Picea glauca</i>	White spruce	Y	○ ●	Windbreak. Needles can be steeped into tea. Supports wildlife.
TREE OF LIFE	<i>Quercus macrocarpa</i>	Bur oak	Y	○ ●	Edible acorns. Supports wildlife.

# 8.6 DESIGN

## Overall plan

-  Lawn
-  Wood mulch
-  Tall grass prairie
-  Crushed granite
-  Asphalt
-  Concrete
-  Wood deck



Fig. 8.6.1 Overall plan. (Map data: Google © 2021 Maxar Technologies)



TALBOT AVE.

COMMUNITY GARDENS

EXISTING BIKE PATH

GATEWAY RD.

PLAZA & PAVILION

ELMWOOD RD.

EXISTING PLAYGROUND

NEW BIKE PATH

ORCHARD

HERBERT AVE.

FIRE PIT

RINK / BASKETBALL

TREE OF LIFE

NATIVE FOOD FOREST

EVERGREEN SUN SHIELD

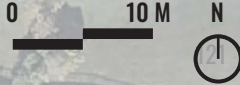
LOOKOUT DECK

TALL GRASS PRAIRIE & TRAILS

COSMO PL.

LIGHTING ALONG BIKE PATH

RAILWAY



## Overall sections

The site orientation is based on two contrasting alignments: the tilted angle of Elmwood Road and urban grid of Chalmers, and the straighter angle of the Talbot-Grey grid.

Section I-I cuts through the edge of the site along Elmwood Road, aligning with the orientation of the community gardens and pavilion building. The playground is still visible from the road, maintaining that existing visual connection. The other play element

– the hockey rink / basketball court – is also visible from the road, and it is protected from cold winter winds by evergreen shelterbelts.

Section A-A cuts through the centre of the site, aligning with the canal paths and food forest. The trees in the picnic area, orchard, Tree of Life, and native forest serve as visual “thresholds” that dramatize the experience of walking to the overpass. The section shows the sightline from the lookout point to the overpass and trains, highlighting the unique openness of the site.

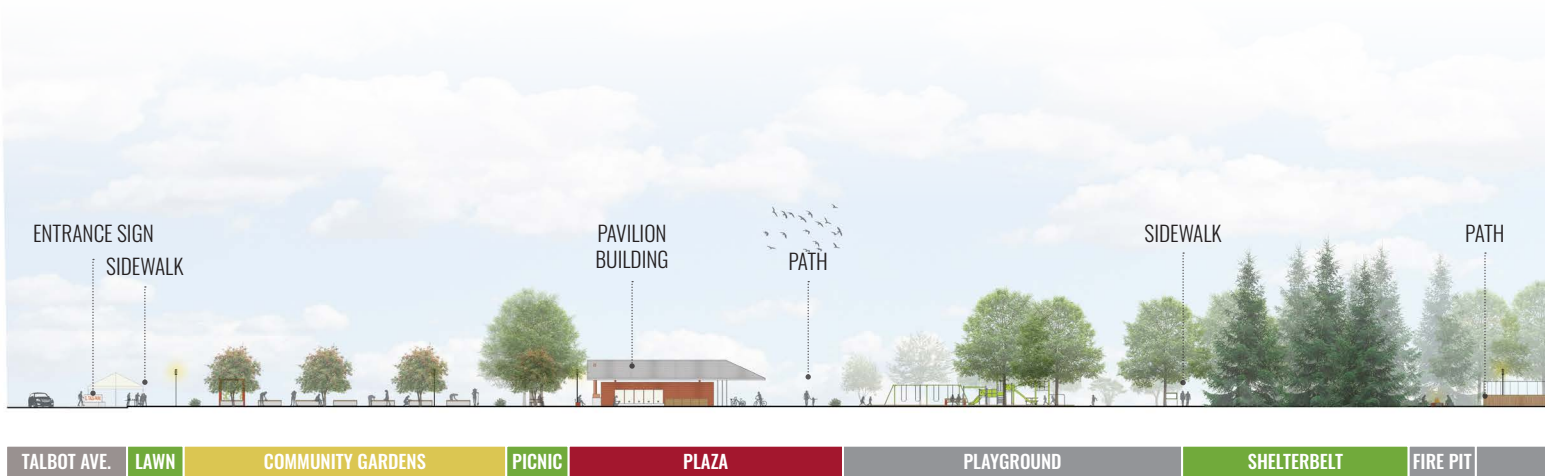


Fig. 8.6.2 Section I-I



Fig. 8.6.3 Section A-A

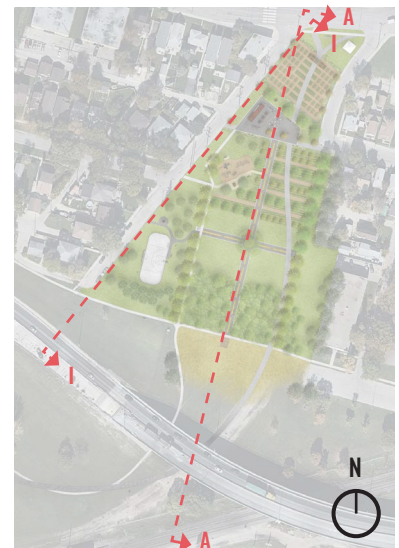
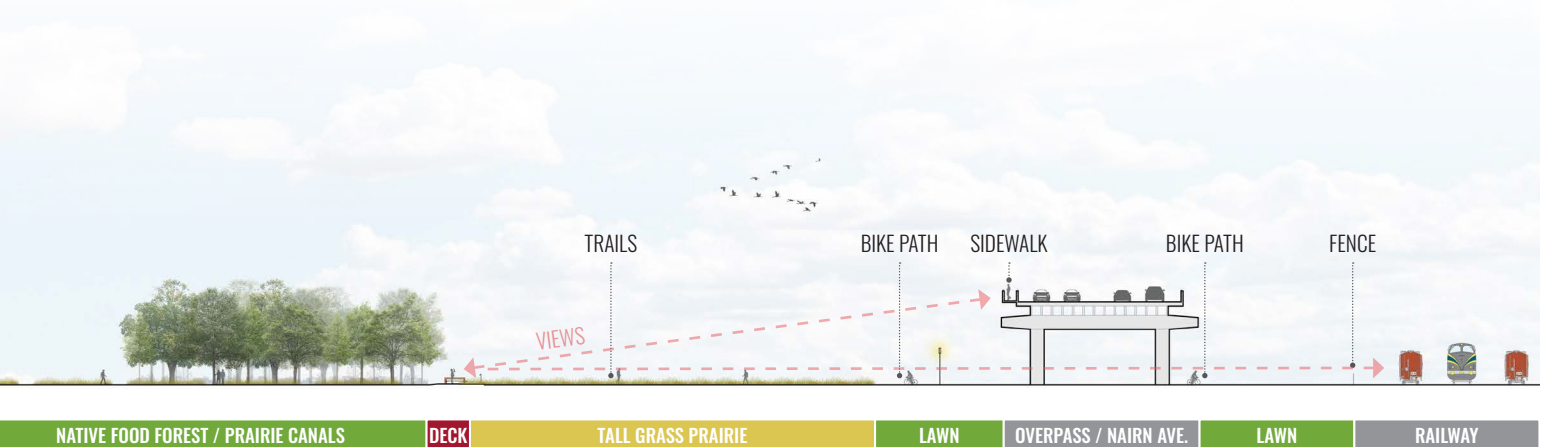


Fig. 8.5.4 Site sections reference (Map data: Google © 2021 Maxar Technologies)



## Park entrance

Most people will be entering the park via Talbot Avenue or the northern part of the Gateway Trail, so the views and entrance experience from this side of the park are important. A sign with the park name, designed in collaboration with local community artists, marks the entrance. The lawn areas at the front of the park can be used as flex space for farmers markets, vendor stalls, or other events. Continuing along the Gateway Trail, visitors pass through a shrub threshold

that marks the edge of the community gardens, serving as both an aesthetic feature and a soft barrier to enclose the gardens. Next, visitors pass under a pergola made of wood and weathered steel I-beams, serving as an entrance gate to the park. The pergola is covered in edible vines, creating an immersive experience as people walk under it. The wood slats form the outline of a railway, projecting the shadow onto the path below as a reminder of the site's history. Seating areas under the pergola provide a semi-shaded area for gardeners to relax.

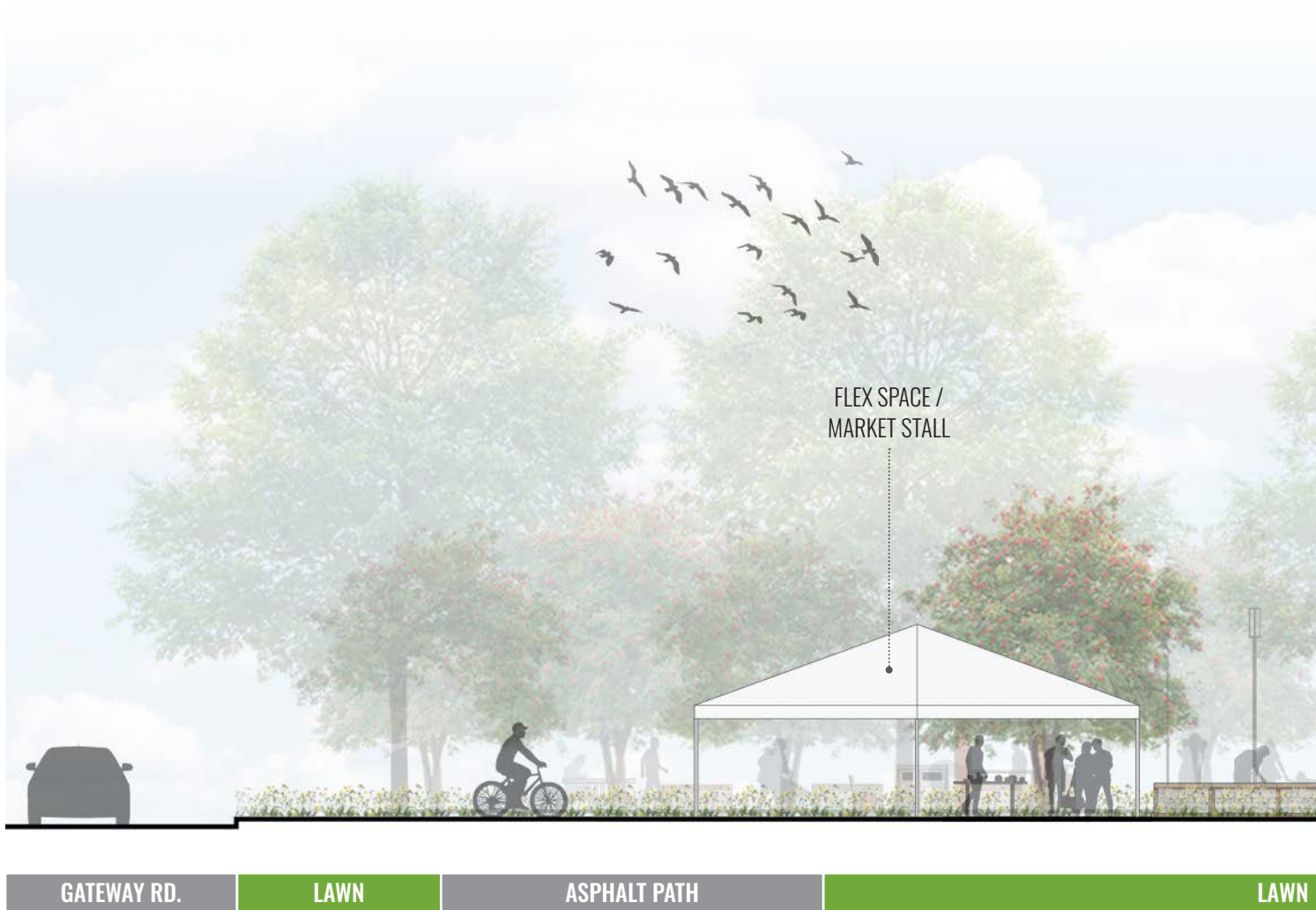


Fig. 8.6.6 Section B-B

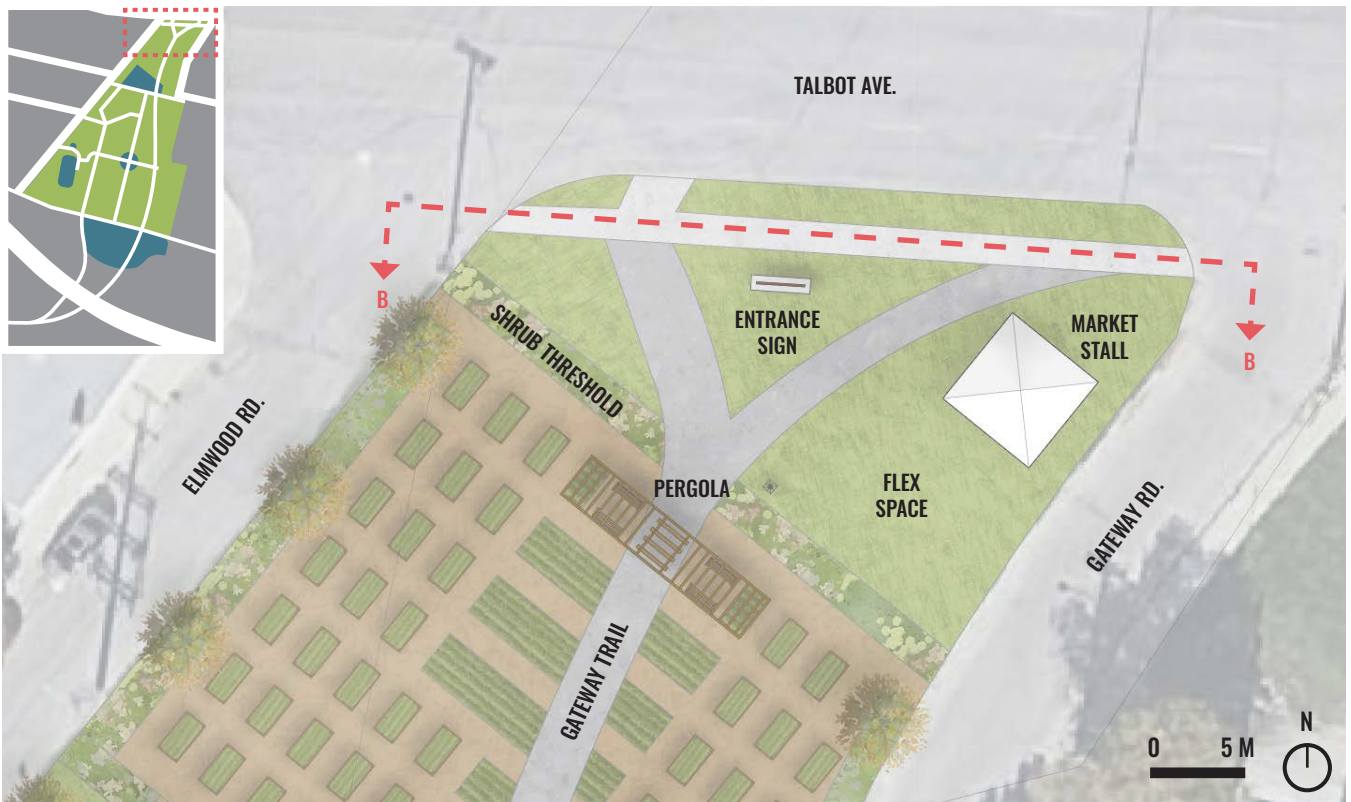


Fig. 8.6.5 Plan: park entrance (Map data: Google © 2021 Maxar Technologies)





Fig. 8.6.7 Conceptual rendering of the park entrance and pergola



## Community gardens

The community gardens area is surrounded by shrubs on all sides, creating a soft barrier (instead of fencing) and preventing roadside pollution from spraying into the garden area. Small trees, suitable for planting under power lines, delineate the garden's edges and create a sense of enclosure. The surface material is wood mulch, which is easier to maintain than grass (no mowing) and wheelchair-accessible (so long as it is packed down). Additional mulch can be created using branches pruned from the trees on site.

There are two parts to the community garden area: public gardens at ground level and individually rented raised beds. Since theft may be a concern for the rented plots, the public gardens are closest to the path, while the individual gardens are located further away. This strategy allows park visitors to harvest and interact with the plants in the public gardens, while discouraging them from harvesting from the rented plots; additional signage can also help in this respect. This layout also creates a progressively rising sight line from the ground-level public gardens, to the raised beds, to the surrounding shrubs and trees.

Depending on the goals of the gardening community, the public gardens can be used for many purposes, such as public produce gardens, food bank donation gardens, pollinator gardens, or demonstration gardens for techniques such as herb spirals or hugelkultur. They could also be “adopted” by local groups, institutions, or organizations and used to display a theme significant to that group, such as traditional Middle Eastern herbs or a therapeutic sensory garden.

The individual raised beds are made from wood frames and corrugated galvanized steel roofing panels, which are durable (no rust), inexpensive, and easy to construct. In addition, since the soil does not touch the wood frame, there is no risk of chemical leaching – so long-lasting and inexpensive pressure-treated lumber can be used. Since standard roofing panels are 0.6 m high, the raised beds are wheelchair-accessible, have an edge for sitting, and can be worked from kneeling, standing, or sitting positions, making them all-age-friendly. The length and width are 2.5 x 1.3 m, allowing for easy access from all sides.

A grassy picnic area with shade trees serves as the transition space between the community gardens and the plaza.



Fig. 8.6.9 Section C-C

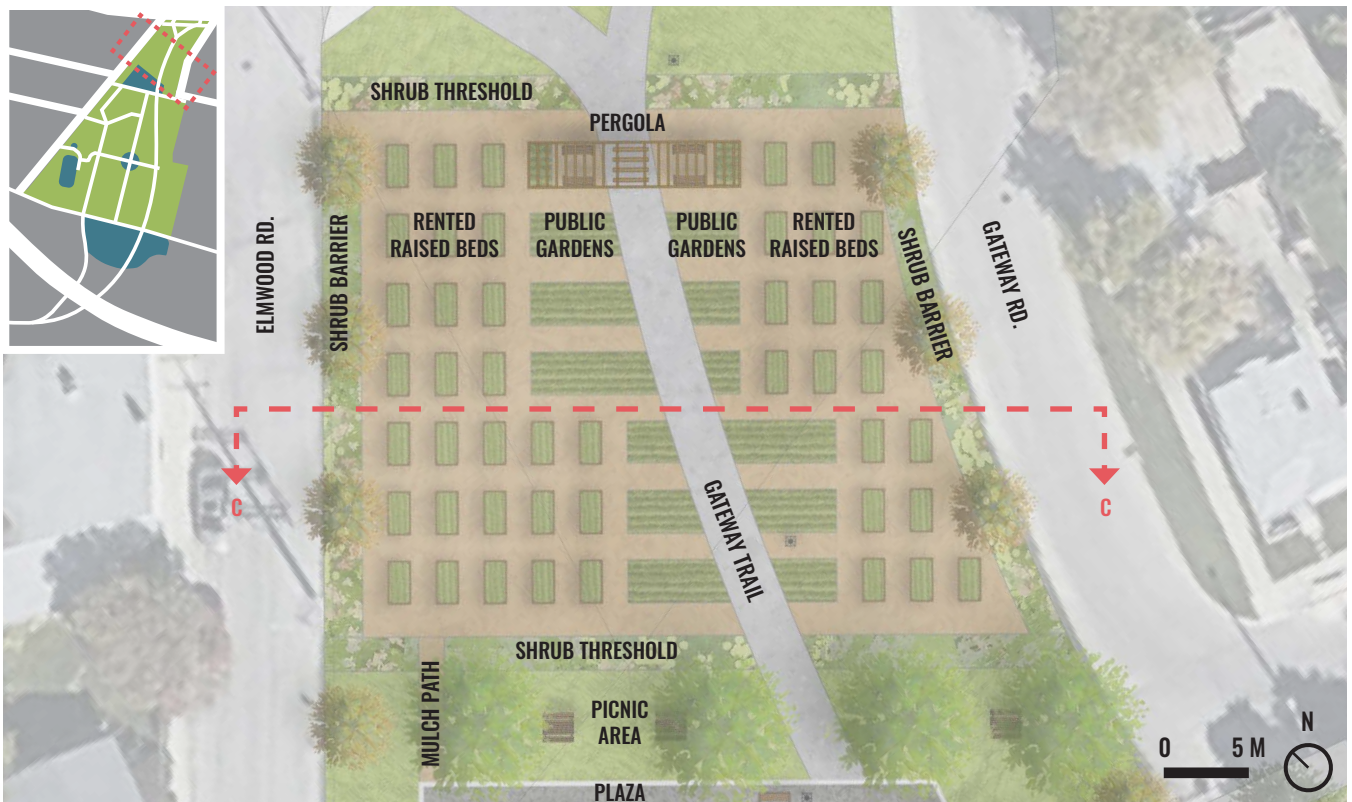


Fig. 8.6.8 Plan: community gardens (Map data: Google © 2021 Maxar Technologies)



PUBLIC GARDENS | RENTED RAISED BEDS | SHRUBS | ELMWOOD RD.



Fig. 8.6.10 Conceptual rendering of the community gardens



## Plaza

Upon entering the plaza, visitors encounter a fairly open space, allowing them to either continue along the Gateway Trail or meander into the plaza. The change in surface materials from asphalt to crushed gravel encourages people to slow down and notice the space. Two trees and planters with prairie grasses signal the entrance to the canal paths, inviting a leisurely detour.

Near the plaza's entrance, a signage kiosk displays maps and information on one side and a community bulletin board on the other. The existing trail marker is located next to this sign, complementing the map display. Benches and a trash receptacle at the plaza's outskirts provide a rest stop for the Gateway Trail. Two light posts illuminate the plaza and the trail at night, increasing safety.

As the central gathering place in the park, the plaza is designed to accommodate a variety of uses. The open area near the entrance and the grass areas on either side serve as flex spaces for larger events. In the middle of the plaza is an informal seating area with limestone seating blocks and barbecue pits. The limestone blocks can be used for casual seating,

informal play (kids can hop from block to block), or event seating for performances, classes, or gatherings. The barbecue pits build on the park's food theme, inviting people to cook together in both summer and winter.

The pavilion offers shelter from the elements for both people and bicycles. The covered area can be used as a gathering space, outdoor classroom, or combined with the barbecue/seating area for larger events. A stage area can be created by moving the picnic tables. An outdoor oven can be used for community feasts or events such as pizza fundraisers using food grown on site. The shipping container is divided into a unisex washroom and a storage area. The roof tilts toward the west side, where large barrels collect rainwater for gardening. A hose bib is also provided for water-intensive projects such as hosing down the compost, using the same water connections as the washroom. The compost bins and rainwater barrels are located behind the building to hide their unsightly appearance and to minimize "traffic jams" between gardeners and the public. A mulch path directly connects the compost/water area to the community gardens.



LAWN / FLEX SPACE

Fig. 8.6.12 Section D-D

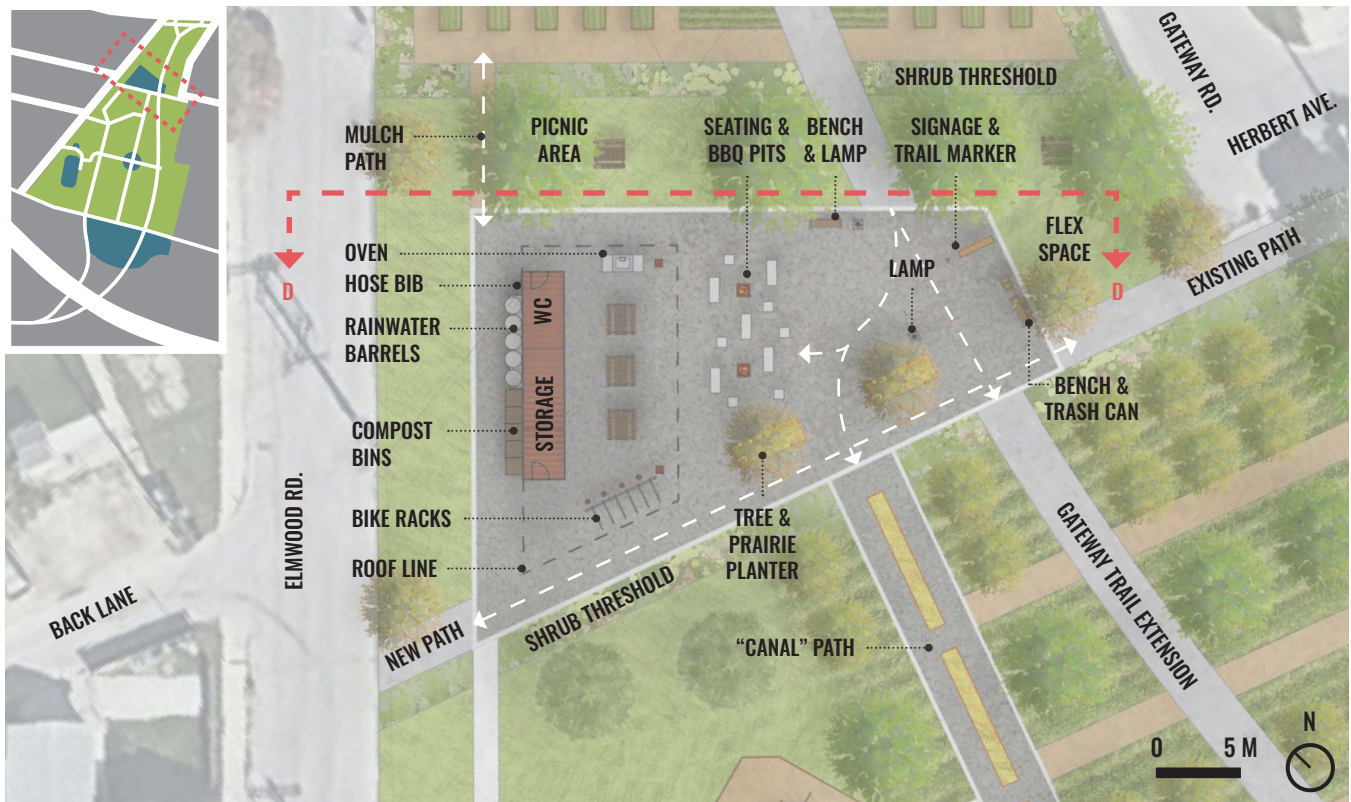


Fig. 8.6.11 Plan: plaza (Map data: Google © 2021 Maxar Technologies)



LAZA      LAWN      ELMWOOD RD



Fig. 8.6.13 Conceptual rendering of the plaza during the day.





Fig. 8.6.14 Conceptual rendering of the plaza at night.



## Orchard

The orchard would be implemented in phases beginning from the north side next to the plaza. The trees are planted in rows for optimal lighting, air flow, and access. Since most orchard plants require full sun, it is strategic to start planting from the north side, as this allows for maximum south solar gain for both the taller, older plants behind and shorter, newer plants in front. Mulch paths allow access throughout the orchard without trampling the groundcover plants. The curved bike path disrupts the geometry of the orchard, emphasizing the importance of the historic railway. Larger nut trees border the orchard's east side, delineating the space and allowing nuts to fall without landing on the asphalt path. These trees also create privacy for the houses bordering the park.

The canal path, bike trail, and playground are all embedded within the orchard, increasing its accessibility and opportunities for interaction. The grass area north of the playground, however, is left open for informal play and maintaining sight lines to the plaza.

The central gravel path offers a slower route through the orchard without competition from high-speed bicycles. As pedestrians move along this path, they can see and touch the native grasses in the "canals," promoting eco-literacy. The southward view terminates at the Tree of Life, creating a destination point that pulls people through the space.



Fig. 8.6.16 Section E-E

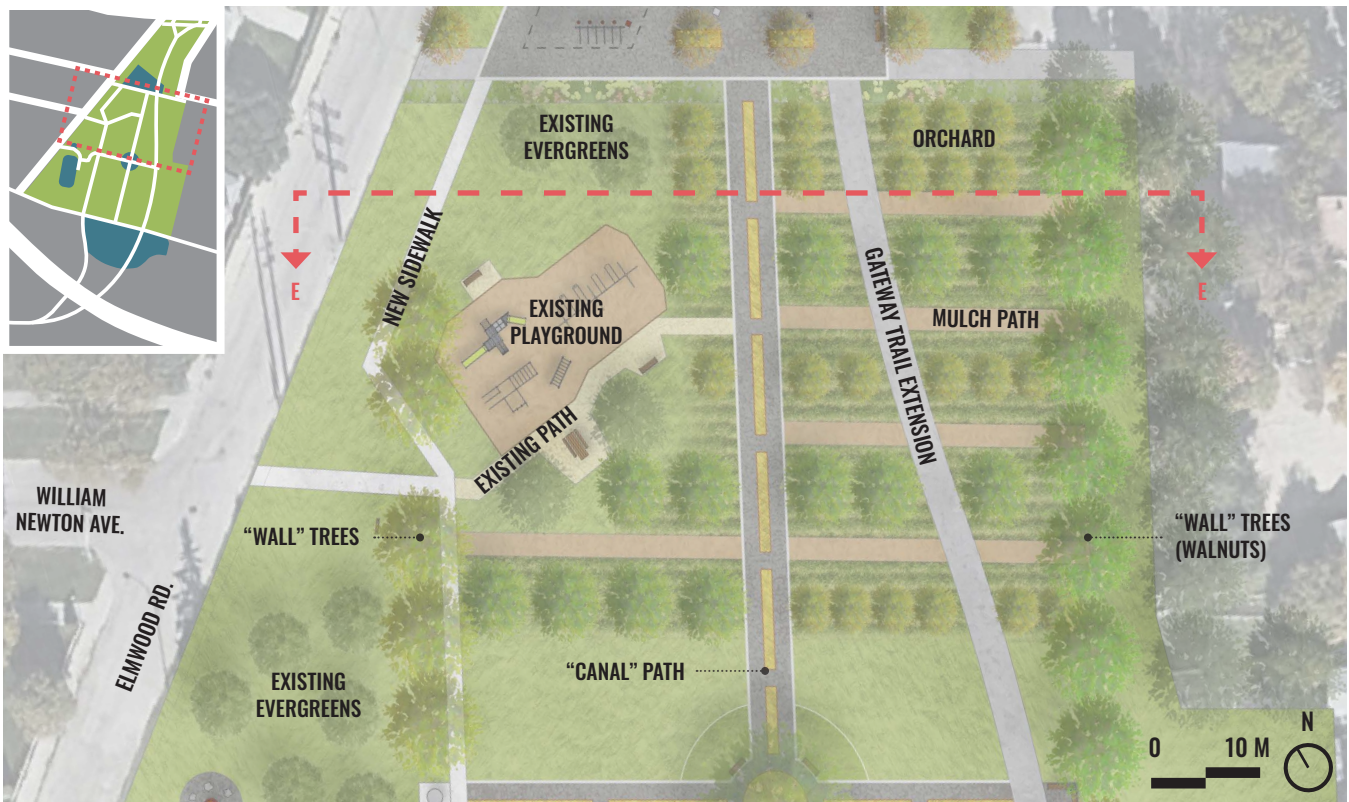


Fig. 8.6.15 Plan: orchard (Map data: Google © 2021 Maxar Technologies)



## Tree of Life & Rink

The Tree of Life is subtly highlighted by a ring of grassy berms that contrast the site's flatness. It was important not to "over-design" this area, as a formally designed gathering space would look out of place in the middle of the open lawn during the early phases of forest establishment. The convergence of paths and the grass berms provide subtle but sufficient visual indication of the Tree of Life's importance. Signage can help to further explain the concept and to describe the impressive qualities of the bur oak. As a quiet, central space, the Tree of Life area can be used for quiet gatherings, traditional ceremonies, napping under the shade of the tree, or informal play on the berms.

Extending laterally from the Tree of Life are a rest area and an art installation. The artwork would be designed by local artist(s) in collaboration with the hired landscape architect. The path continues past the

art installation to the half-size hockey rink, which has a concrete base that can be used for basketball during the warmer months. In winter, the rink is protected from cold, north winds by the existing evergreen trees, and a coniferous sun shield to the south prevents any "unfair advantages" when playing hockey in low-angled evening light. The rink is distanced from the main paths and the street to prevent any rogue pucks from hitting cars or pedestrians.

North of the rink and protected by the evergreen trees is a fire pit with stone seating. The fire pit complements the winter rink, creating a place for parents/guardians to supervise, players to warm up, or groups to roast marshmallows post-game. It can also be used year-round for bonfires or casual seating. In my experience, fire pits in public parks are very popular, so it is advantageous to have an additional fire pit area in addition to the one at the plaza.

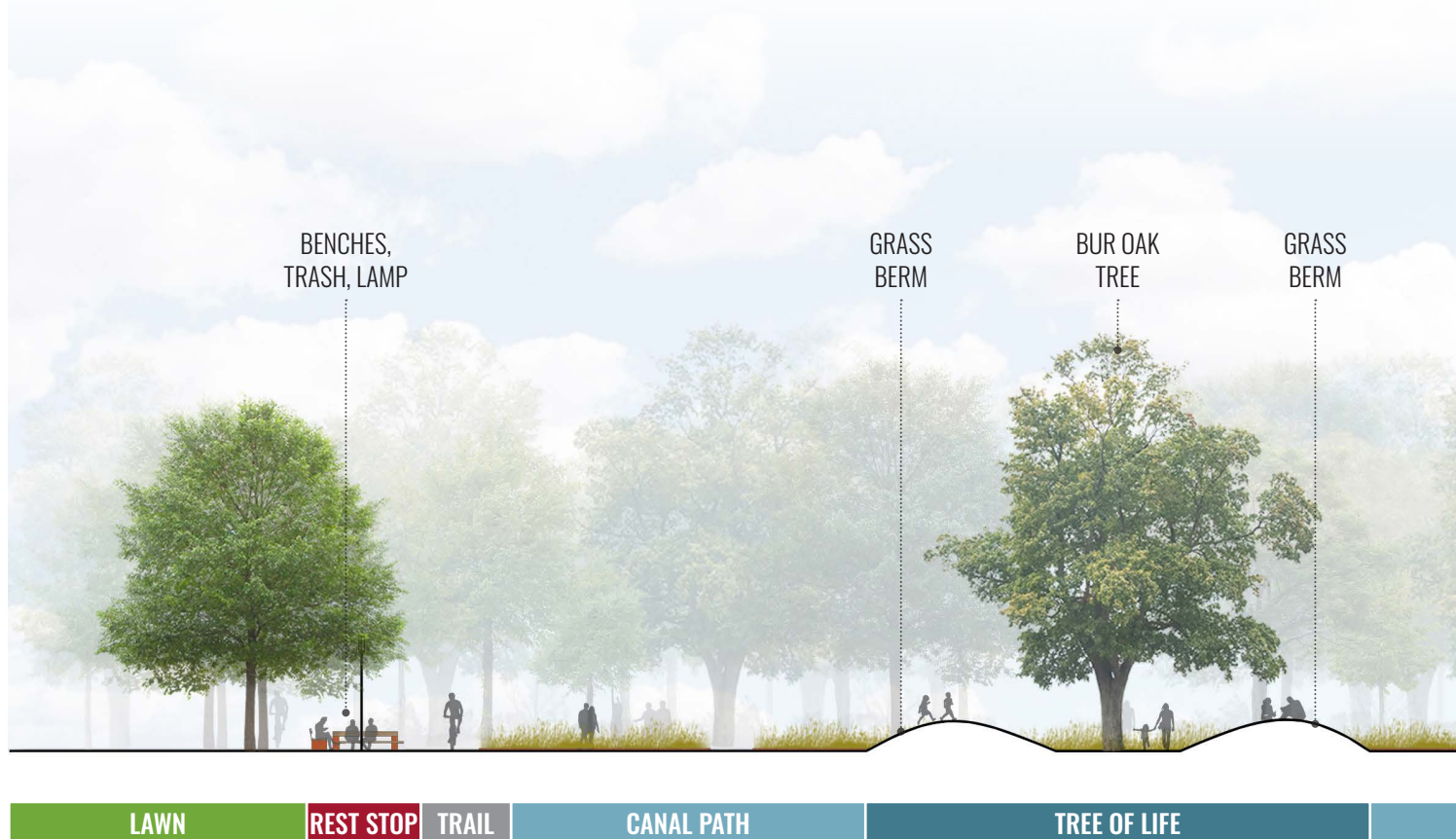


Fig. 8.6.18 Section F-F

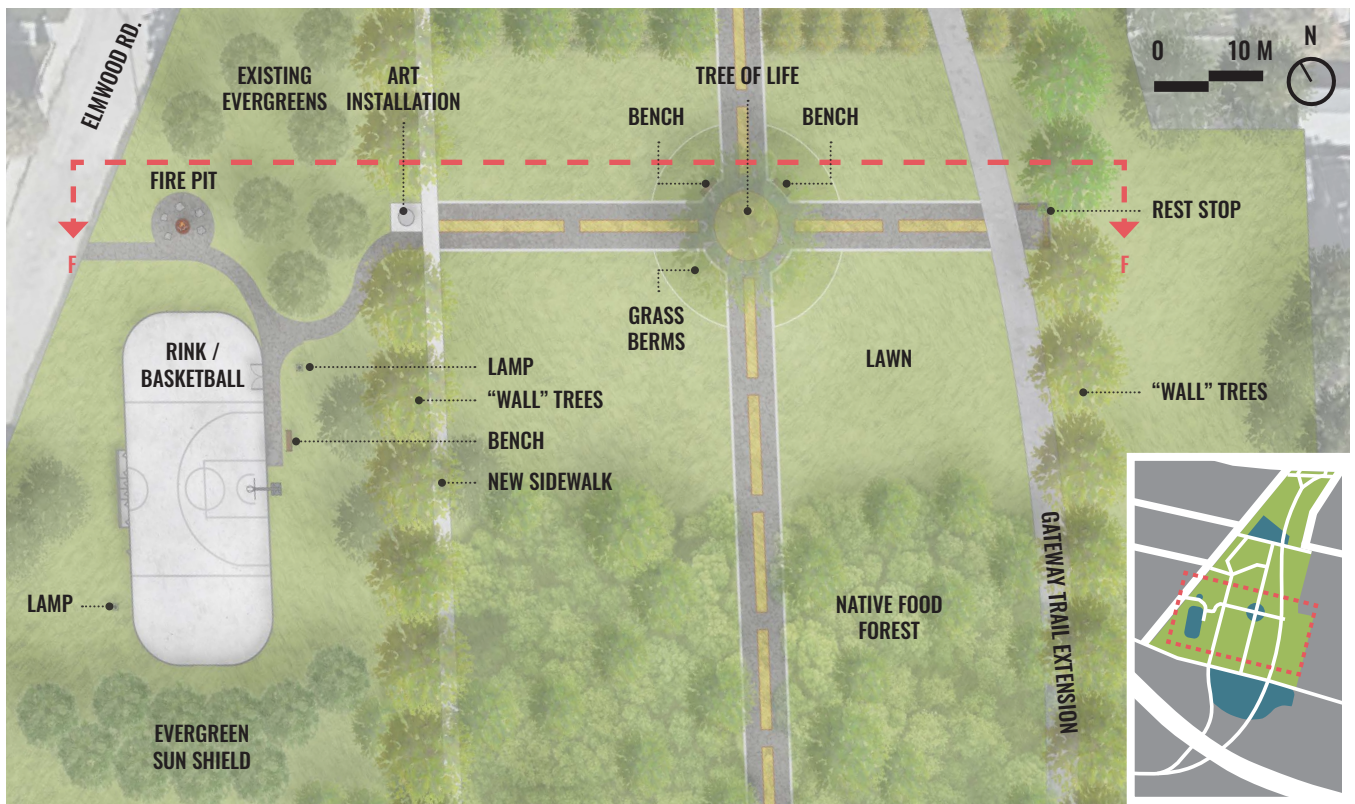


Fig. 8.6.17 Plan: Tree of Life and rink (Map data: Google © 2021 Maxar Technologies)

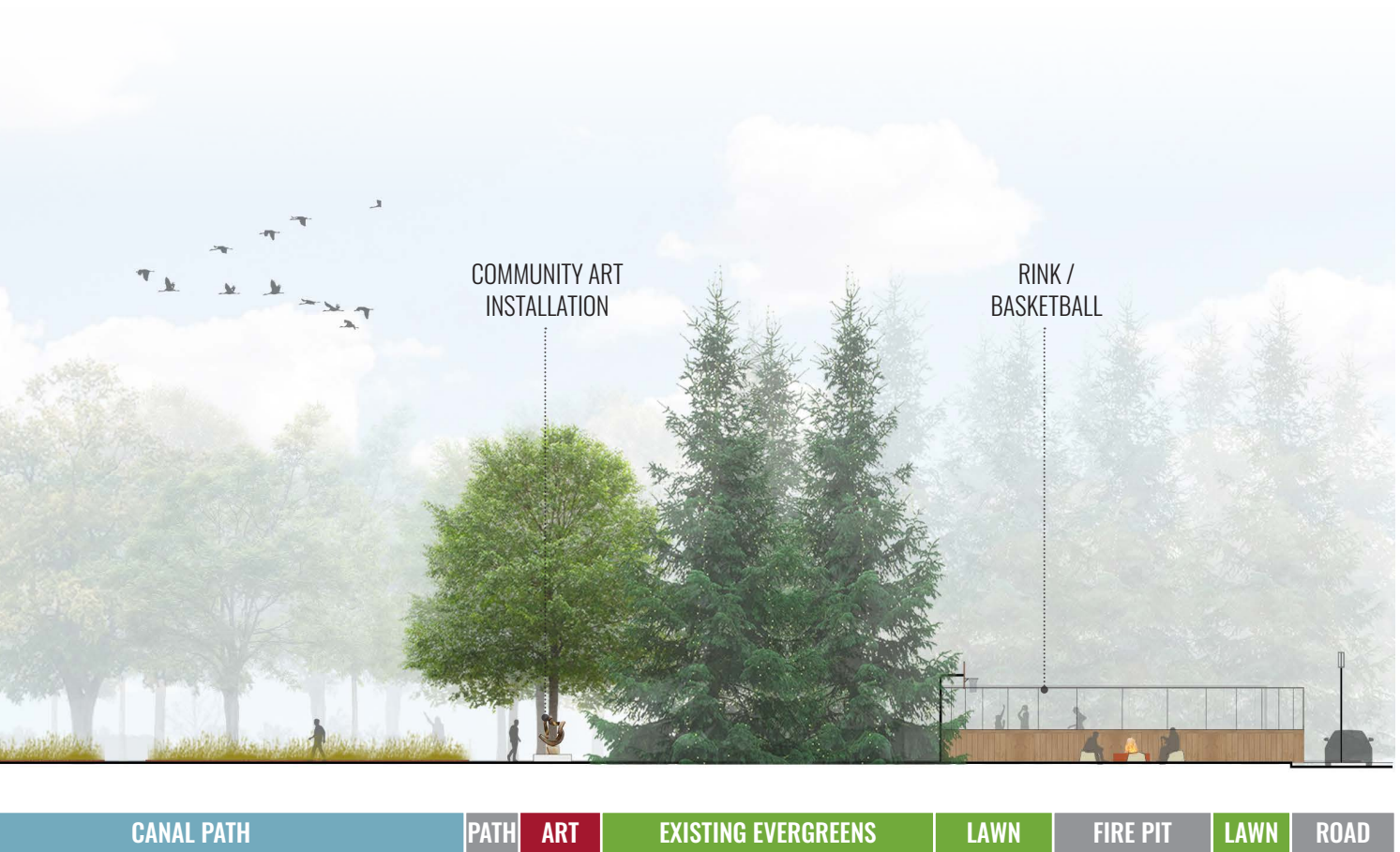




Fig. 8.6.19 Conceptual rendering of the Tree of Life area and canal paths

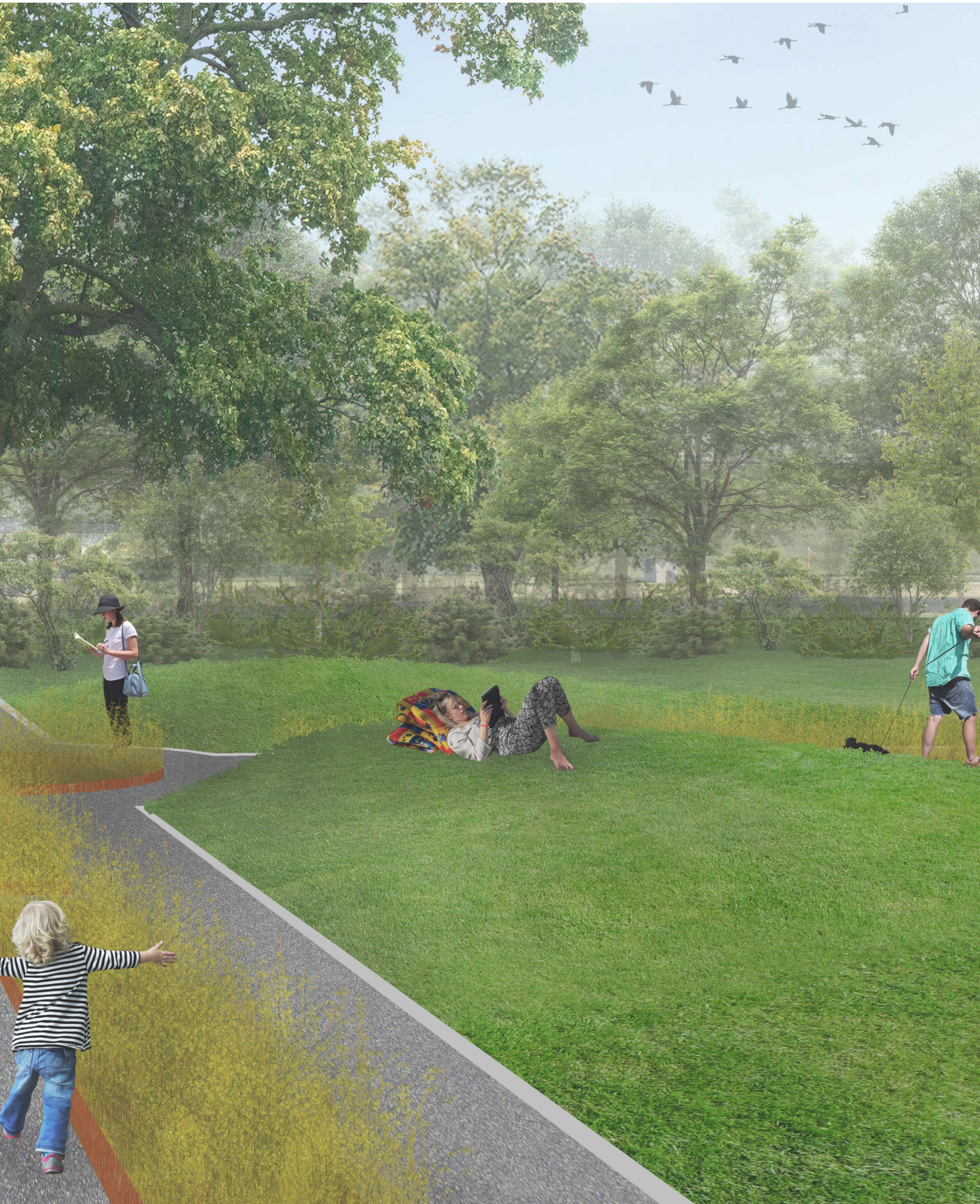




Fig. 8.6.20 Conceptual rendering of the fire pit and rink in winter



## Native food forest

The native food forest is the last “threshold” before the open prairie. Pedestrians will be able to see filtered views of the overpass through the canopy of the forest.

The composition of the native forest is much different from the orchard. Trees are spaced closer together, similar to the spacing of natural forests. Over time, the forest can be thinned to prevent safety concerns of dark, enclosed spaces. Mulch paths wind through the forest, providing access points for harvesting without disturbing the forest floor. The forest is enclosed on

either side by rows of “wall” trees, defining the edges of the forest and shading the paths. However, the forest may be allowed to spill over these edges over time, similar to how a natural forest would spread. The wall trees closer to the south side of the forest, which will grow first, should be somewhat shade-tolerant so they are not shaded out by the forest. Sugar maples are suitable for this purpose, and they are also excellent for tapping syrup and turn a stunning shade of red in the fall. The rest of the wall trees could continue this colour theme with other red-turning trees, creating a bold line of fall colour that contrasts with the yellow-turning native forest species.



LAWN

TRAIL

NATIVE FOOD FOREST

CANAL PATH

Fig. 8.6.22 Section G-G

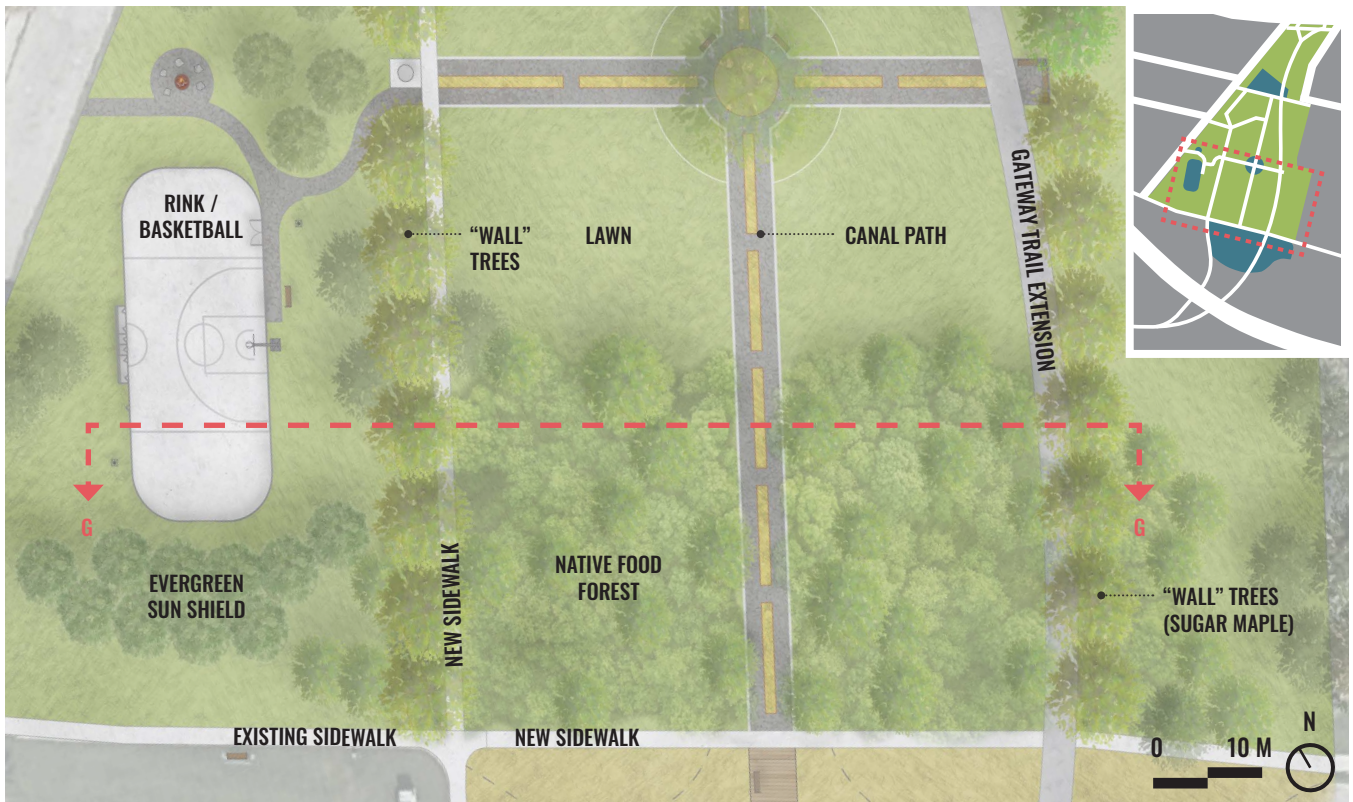


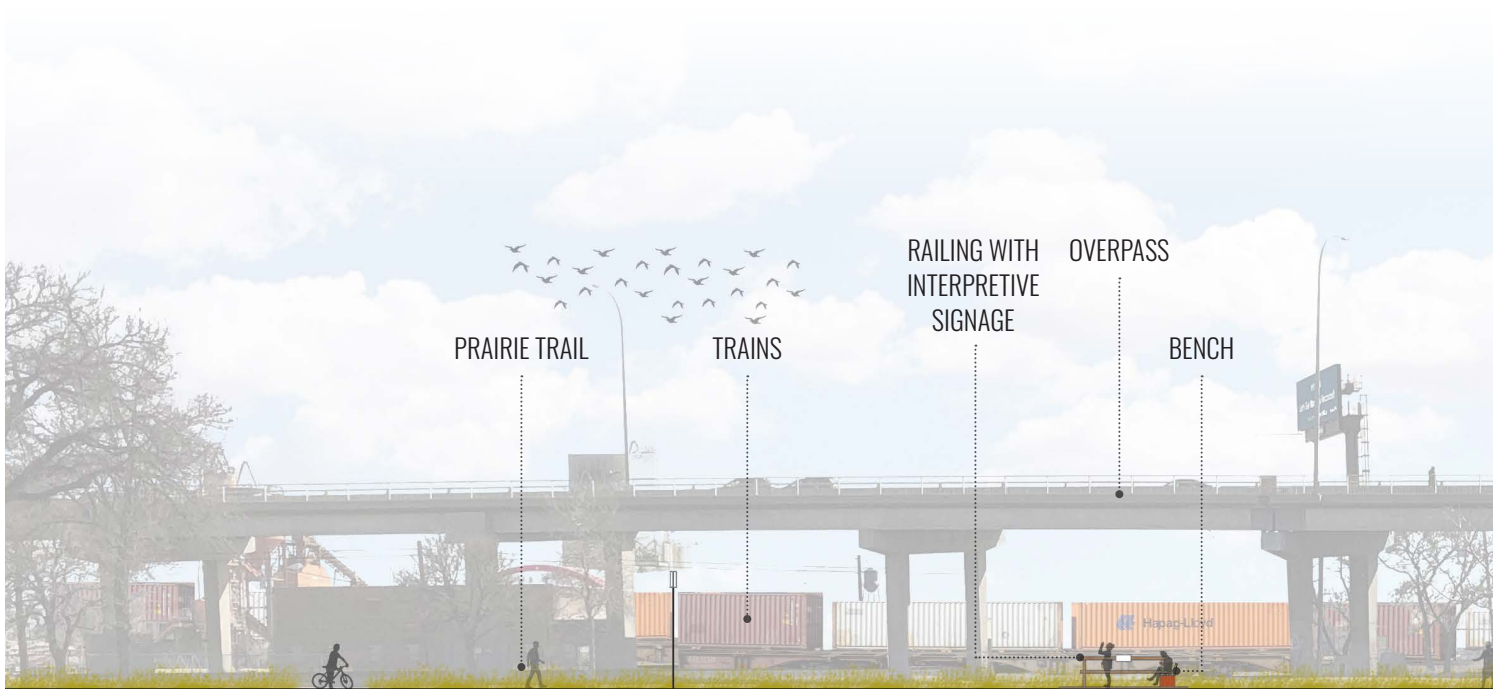
Fig. 8.6.21 Plan: native food forest (Map data: Google © 2021 Maxar Technologies)



NATIVE FOOD FOREST | PATH | LAWN | RINK / BASKETBALL | LAWN

## Lookout deck & prairie

The lookout deck and prairie are the “arrival point” at the park, rewarding pedestrians with incredible views to the overpass and trains in the open, expansive space. After walking along the central path with thin “canals” of prairie, the grasses spill out into this larger “sea” of prairie, with the wood viewing deck acting like a dock in the water. The deck is slightly elevated so as not to compress the soil below. A gap in the deck allows the prairie to grow through, continuing the line of the prairie canals. A railing lines the perimeter of the deck, providing a structure to lean on while viewing the site, and benches provide seating. Educational signage about the prairie ecosystem can be affixed to the railing. A trail loop through the prairie connects to either side of the deck, allowing visitors to be immersed in the grasses. The bike trail also meanders through the prairie. Like the native food forest, the prairie’s boundary is not strictly defined; it can expand over time as opportunity allows.



TALL GRASS PRAIRIE

TRAIL

TALL GRASS PRAIRIE

LOOKOUT DECK

Fig. 8.6.24 Section H-H

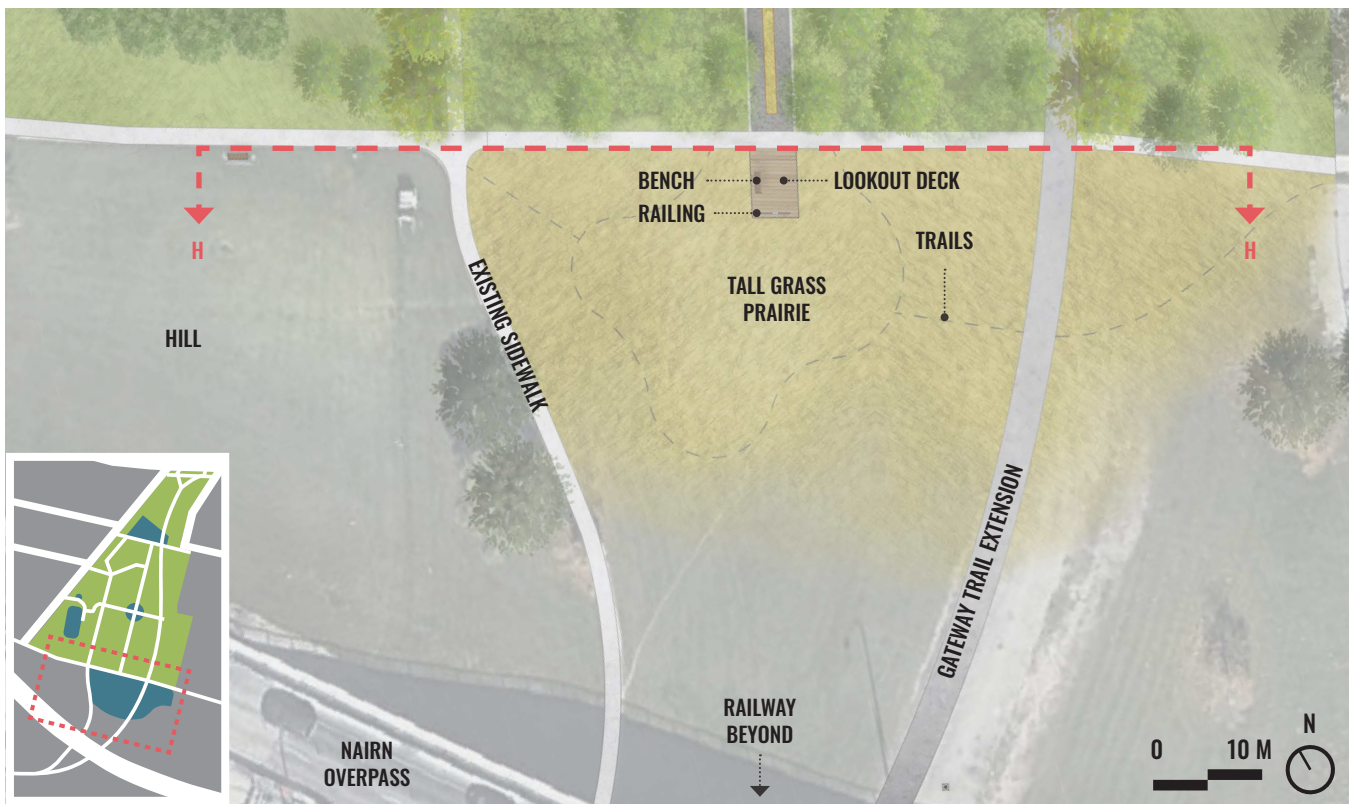


Fig. 8.6.23 Plan: viewing deck and prairie (Map data: Google © 2021 Maxar Technologies)

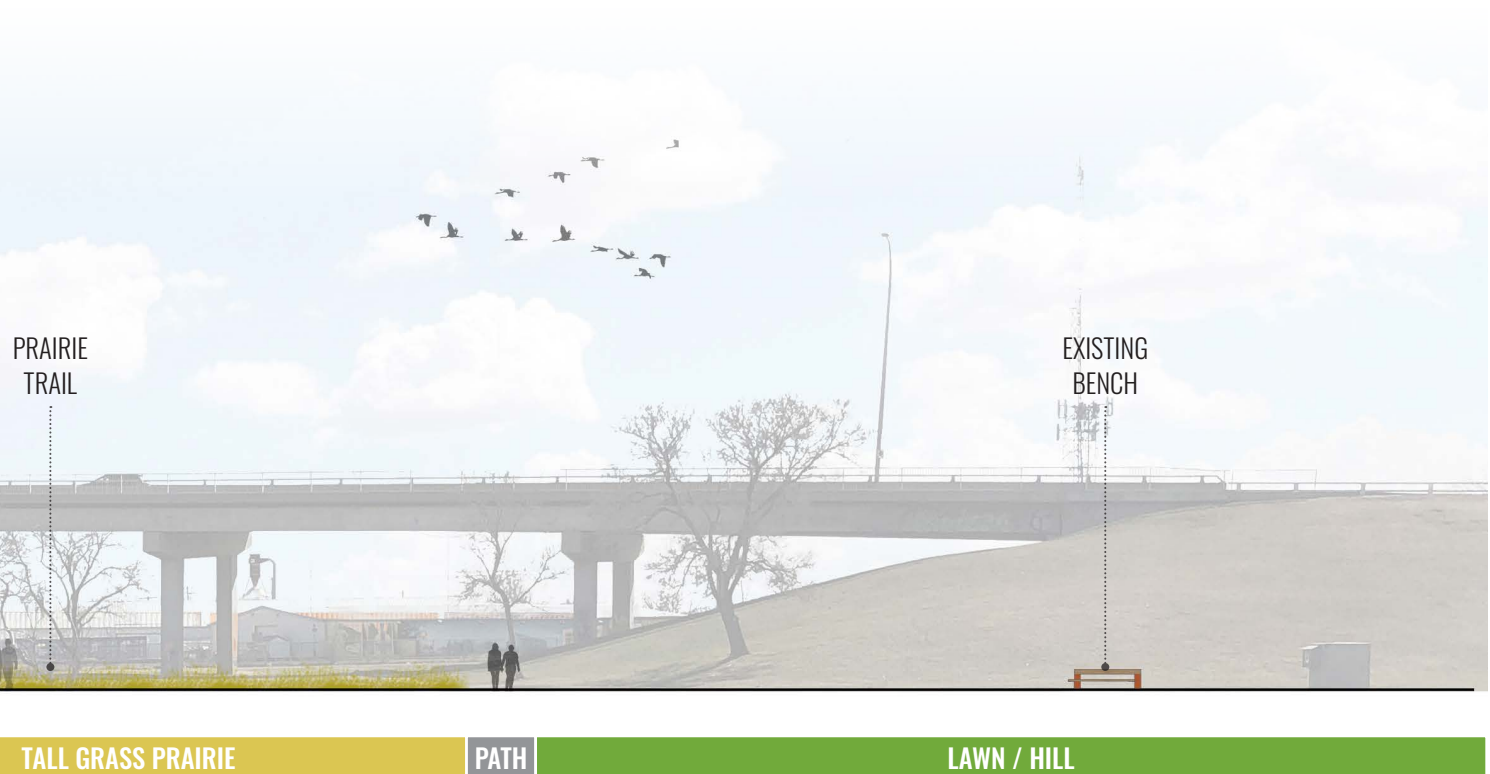




Fig. 8.6.25 Conceptual rendering of the lookout deck



## 8.7 IMPLEMENTATION

### Roles and responsibilities

As discussed in Section 8.1 - Approach, I am proposing a management model similar to Henteleff Park where the park would be jointly managed through a partnership between the City of Winnipeg and the food forest community. A “Development and Management Agreement” would define the nature of this partnership, including each party’s roles and responsibilities and the governance structure. This section describes the anticipated roles and responsibilities of each party – the City, the food forest community, and contracted professionals.

#### CITY OF WINNIPEG:

- Property owner responsible for granting a land lease to the food forest non-profit group;
- Oversees expansion of the Gateway Trail and remediates contaminated soil if required;
- Installs and maintains new sidewalks (as part of the City’s pedestrian network), asphalt path extension (as part of the City’s active transportation network), rows of trees along these paths (as part of the City’s urban forest), and associated site furniture as required per city

bylaws for public parks and greenspaces (e.g. lighting, benches, trash receptacles);

- Mows and maintains the lawn areas, providing herbicide application if required for troublesome areas (outside food production areas);
- Provides grant funding;
- Meets with the food forest board bi-annually to review current operations and discuss future plans.

#### FOOD FOREST COMMUNITY:

- Maintains a board and non-profit status;
- Acquires funding through grants, donations, and fundraising for all other park elements, including the plaza, pavilion, community gardens, food forest, tall grass prairie, canal paths, Tree of Life, signage, and art installations;
- Constructs all simple food-related elements through volunteer labour (e.g. raised beds, food forest, planting beds) - refer to Fig. 8.7.6 Construction phasing plan;
- Hires and pays a summer coordinator and other staff as required;
- Organizes volunteers and staff for the ongoing maintenance of all non-City elements, such as the community gardens, food forest, Tree of Life,



Fig. 8.7.1 Government work. (Credit: Seattle Department of Transportation)



Fig. 8.7.2 Community volunteer work. (Credit: Jeff Wright)

plaza, and prairie (excluding burning and mowing);

- Organizes events and programs such as community feasts, workshops, and day camps, and acquires necessary materials such as equipment and snacks;
- Responsible for outreach and communication (e.g. website, newsletters, advertising, social media);
- Makes plans for the food forest and park, and meets with the City of Winnipeg bi-annually to review current operations and discuss future plans.

#### CONTRACTED PROFESSIONALS:

- **Landscape architect & architect:** Works with the community to develop the design. Oversees the tendering and construction process.
- **General contractor:** Constructs/installs all City-funded elements (sidewalks, bike path, shade trees, and site furniture), as well as any elements that are beyond the capacity of volunteer labour (pavilion, plaza, pergola, services/utilities, sodding, berms).
- **Prairie contractor:** Installs and maintains the tall grass prairie during the establishment period; performs seasonal burning/mowing as required.

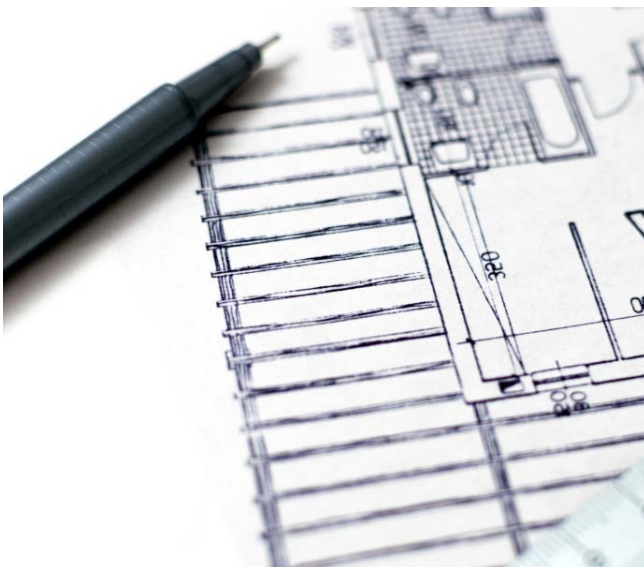


Fig. 8.7.3 Contracted design work. (Credit: Pixnio)

## Construction phasing

The following plan presents one possible scenario for construction based on optimal efficiency. In reality, actual implementation will depend on funding, community participation, and other contingencies. This fast and efficient scenario relies on the following assumptions:

- For the initial construction, there will only be one contract period per contractor (i.e. the general contractor and the prairie contractor) to minimize mobilization fees. The pergola, however, can be installed as a later phase in response to the project's growth.
- The community will be able to start their work in the designated areas as soon as possible (once the construction fences for contracted work are gone).
- There is sufficient funding to complete the entire project as described (except the pergola).
- Trees and shrubs are spaced at approximately 2 plants per square metre (meaning each tree/shrub takes up 0.5 m<sup>2</sup> on average). If every spring/fall planting event brings an average of 50 volunteers, and those volunteers plant an average of 300 trees and shrubs total, the food forest should expand by about 150 m<sup>2</sup> per planting event or 300 m<sup>2</sup> per year. These numbers are based on past planting events at Henteleff Park.



Fig. 8.7.4 Contracted construction work. (Credit: Province of British Columbia)

Given these assumptions, the construction phasing would proceed as follows (refer to Fig. 8.7.6):

1. The community is the first to break ground on the site and will start construction before the contractors, which promotes a sense of community ownership. Work begins with sheet mulching to smother the grass and weeds, followed by spreading mulch and building raised beds and public gardens. The number of garden beds built is based on the demand; as the gardening community grows, more can be built. The phasing of the garden beds begins closest to the plaza and expands towards the park entrance; this keeps gardeners closer to the plaza, which is the hub for water, compost, storage, and gathering.
2. External contractors install utilities/services (electrical, water connections), hardscaping (paths, plaza, rink, concrete curbs, lookout deck), the pavilion building, and site furniture.
3. External contractors install non-food softscaping including sod, berms, and City-owned trees.
4. Sheet mulching / soil amendments for the first phase of the food forest can begin, shown here as 150 m<sup>2</sup>. The orchard is the first phase because it is closest to the park entrance and has more recognizable plants to draw people in. The planting bed south of the plaza is installed.
5. At the fall public planting event, the community kickstarts the event by planting the Tree of Life – the symbolic “source” or “Mother tree” of

the food forest. The tree should be as large as possible, since oaks are slow-growing. Afterwards, the orchard trees and shrubs are planted. These trees and shrubs should be as large as possible to shorten the wait time til harvest. The art feature and entrance signage can also be installed and ceremonially unveiled if completed.

6. In October or November before it starts snowing, the prairie contractor seeds the prairie in the south area and in the “canals.” The contractor will maintain the prairie for 4-5 years until established.
7. At the following spring planting event, the community plants the next section of food forest, this time in the native forest area. Most of these trees and shrubs will be small and planted close together.
8. At some point in the future when the community gardens have grown and sufficient funding has been acquired, the community hires contractors to install the pergola as an additional rest area and entrance gate. The pergola’s location is adaptable depending on how far north the gardens extend.

The total area available for the food forest is approximately 4,800 m<sup>2</sup> – so assuming that about 50 volunteers plant 150 m<sup>2</sup> of forest every spring and fall, it would take about 32 planting events, or 16 years, to fill the entire area (provided the community actually wants to fill the entire area). The orchard, however, may be filled in faster due to the wider spacing requirements for orchard plants.

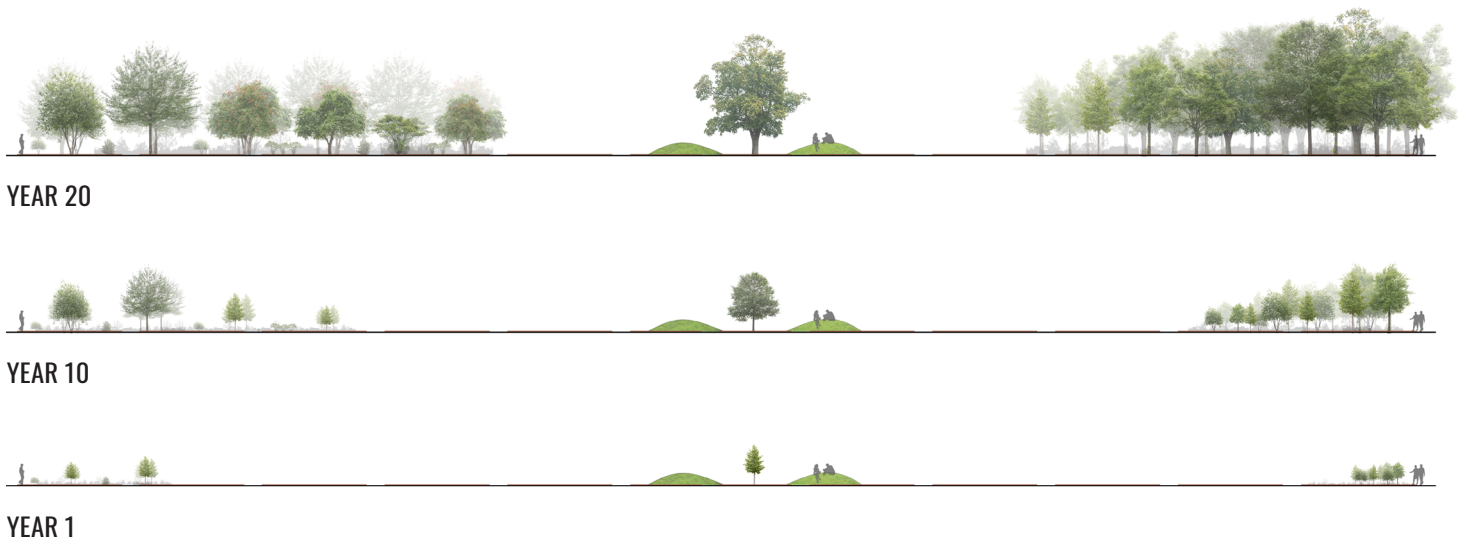
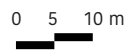


Fig. 8.7.5 Sections showing possible progression of forest growth



Fig. 8.7.6 Construction phasing plan (Map data: Google © 2021 Maxar Technologies)



## Phasing of community gardens and food forests

These diagrams illustrate how the community gardens and food forests might look at six different stages. Note that the time period between each successive phase may vary depending on funding and participation levels, and the community gardens and food forests may not expand at the same rate.

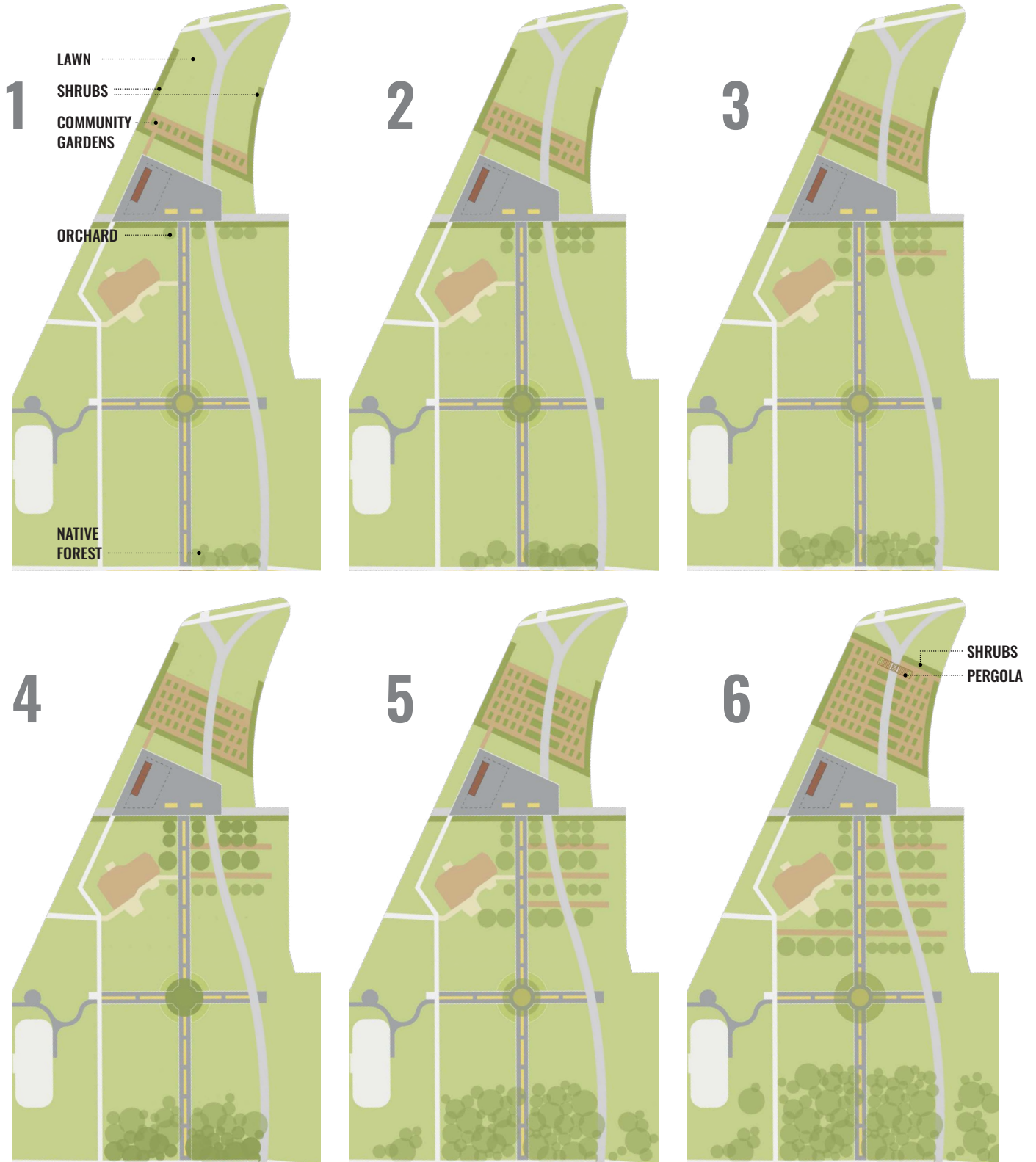


Fig. 8.7.7 Phasing of the community gardens and food forests

## Forest phasing options

The previous phasing diagrams (Figs. 8.6.6 and 8.6.7) assumed a grid-like planting approach where the forest is planted sequentially in linear sections of approximately 150 m<sup>2</sup> each. However, this is not the only way the food forest could be planted. The Cartesian grid is a colonial construction that may feel familiar to Westerners, but considering the diversity of this neighbourhood, the grid may not feel appropriate

to this community, or it simply may not be their preferred method. Of course, the community itself would decide what planting approach would be best – but in the meantime, for the sake of this practicum, I want to acknowledge my own bias toward the Cartesian grid and identify other possible approaches. Each option still creates a forest “threshold” that dramatizes the experience of approaching the overpass, prairie, and trains.

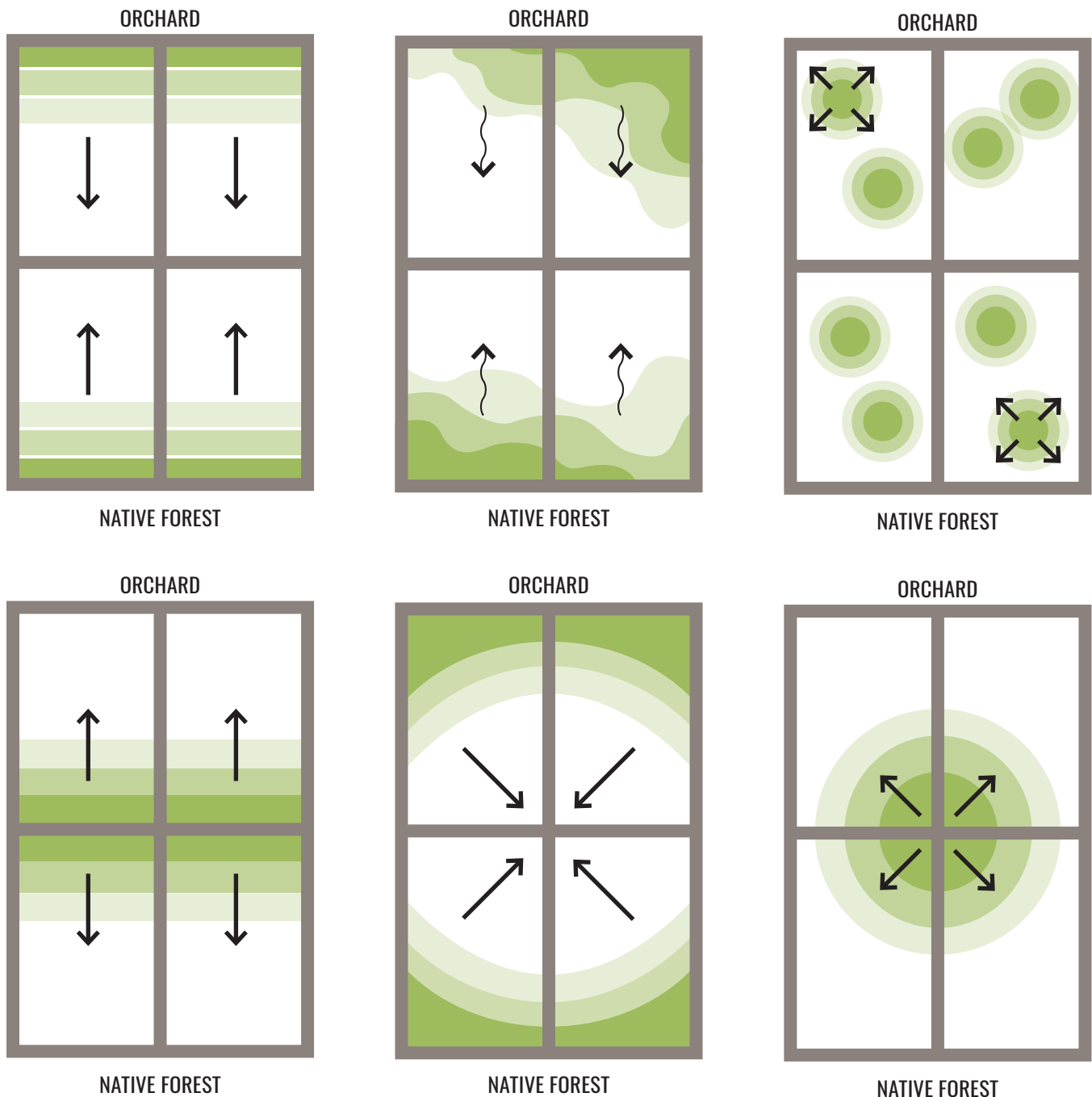


Fig. 8.7.8 Forest phasing options

## Twenty-year plan & engagement strategies

Chapter 5 of this practicum discussed the importance of relationships *with* and *within* community, outlining ways that landscape architects can support positive relationships through an inclusive design process and the physical design of the food forest. This twenty-year plan builds on that chapter by exploring strategies for community engagement, which will help to foster positive relationships and create a sense of belonging. The plan also elaborates on the construction phasing plan (Fig. 8.6.6) by describing the various work (administrative, physical, and program-related) involved in sustaining a community food forest over the span of twenty years. The plan is approximate, showing one of many ways that the

project could happen; it is subject to change and adaptation based on interest, participation, funding, and other contingencies.

The timeline starts from “Phase 0,” where the project is just an idea; support from the community must be gained before proceeding to the next phase. The project could be initiated by a community member, a professional designer, or the City of Winnipeg, so long as the community shows sufficient interest in the project and indicates a desire to take it over. If there is not sufficient community interest after two years of canvassing, advertising, and community engagement, it may be best to abandon the project, as the project must be internally motivated by the community in order to survive over the long term.

- C** Activity led by gardening community / board
- P** Activity led by professional designers or contractors
- W** Activity led by City of Winnipeg
- =** Activity led by either community, designers, or City of Winnipeg

		CONTINUE FOR YEARS 6-20+																				
		PRE-DESIGN	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTIVITY / TASK	DETAILS / INTENT / METHODOLOGY	1-2 YEARS	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	
<b>PHASE 0: GENERATE INTEREST AND SUPPORT TO DETERMINE PROJECT VIABILITY</b>																						
Engage local community	Canvass the neighbourhood. Advertise at community centre, park, Gateway Trail, etc. Contact local organizations/groups/clubs/institutions (e.g. schools, religious institutions, other community gardens, food banks)																					
Engage relevant organizations	Contact relevant organizations to generate interest and support (e.g. Master Gardeners, Manitoba Naturalists Society, horticultural groups, youth programs, fruit rescues, City of Winnipeg Parks Department)																					
Preliminary public meetings	Public meetings held at Chalmers Community Centre to gauge interest, listen to questions and concerns, generate support. Get contact info of those interested.																					
Continue to generate interest/support until there is a sense of strong local support, connections have been made with interested organizations/groups, there is a sense of a “core group,” and critical mass has been achieved (15+ people). If there is no significant interest after 2 years, consider abandoning the project.																						

Fig. 8.7.9 Twenty-year plan & engagement strategies

CONTINUE FOR YEARS 6-20+

		PRE-DESIGN	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTIVITY / TASK		1-2 YEARS	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	
<b>PHASE 1: PROJECT STARTUP</b>																						
C	Establish a board	Designate roles for 5-8 people who are committed to the project.																				
C	Acquire non-profit status	Non-profit status is necessary for funding. Develop a mission statement; fill out required forms.																				
C	Website & social media	Create a website & social media accounts to keep people engaged and update them on progress. Use emails gathered from preliminary meetings.																				
C W	Get approvals from City of Winnipeg	Land lease agreement & permissions to develop site (conditional upon their approval of the design). Draft a "Development and Management Agreement" similar to Henteleff Park.																				
C	Apply for funding	Need funds for startup costs, consultation process, and designer fees. Solicit donations and apply for grants (e.g. Winnipeg Land Dedication Reserve Fund, TD Friends of the Environment grant).																				
P W	Soil test	Perform a soil test to determine contamination levels and soil quality. This will affect the design later on.																				
C W	Develop an RFP for a design team	Put out a public RFP (Request For Proposals) for a landscape architecture and architecture team to detail the design and lead the contracting work.																				
C P	Hire design team	Award bids, sign contracts																				
<b>PHASE 2: COLLABORATIVE DESIGN</b>																						
P	Prepare for design charrettes	Design team prepares charrette. Advertise charrettes, reach out to people on contact list, prepare presentation materials.																				
P C W	Public design charrettes	Led by design team. Invite the community, stakeholders, City, and other relevant parties to establish goals and develop a design collaboratively. Get contact info of people attending. Have online participation options (e.g. live stream, survey)																				
P C	Public open house and advertising	Once design concept is finalized, host a public open house to present the design, generate more interest & support, and discuss future plans. Get contact info of those interested. Post the design concept on social media, share with local news stations, etc.																				
C	Apply for funding	Using final design, generate a cost estimate and use this to apply for more funding.																				

CONTINUE FOR  
YEARS 6-20+

		PRE-DESIGN	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTIVITY / TASK		DETAILS / INTENT / METHODOLOGY	1-2 YEARS	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL
P	Construction drawings	Develop construction drawings for landscape work and pavilion building. Get approval from City of Winnipeg.																				
C	Plan summer work	Prepare for work parties. Calculate materials & equipment needed; create budget. Plan first phase of food forest with board / core group (e.g. total area, types of plants, arrangement, etc). Arrange orders for materials and supplies.																				
<i>Once there is sufficient funding, proceed to Phase 3.</i>																						
<b>PHASE 3: BREAKING GROUND</b>																						
C	P	Tendering process																				
C	W	Ground breaking ceremony & first work party																				
P		Contracted construction work																				
C		Work parties																				
C		Fall planting / celebration																				
P		Prairie planting																				
<b>PHASE 4: PLANNING FOR GRAND OPENING</b>																						
C	W	Board meetings																				
C		Communication & outreach																				
C		Winter celebration																				

CONTINUE FOR YEARS 6-20+

		PRE-DESIGN	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5				
ACTIVITY / TASK		DETAILS / INTENT / METHODOLOGY	1-2 YEARS	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	
C	Apply for funding	Based on plans and budgets, apply for funding for materials and hiring of a Garden Coordinator.																					
C	Community gardens applications	Develop and distribute applications for community gardens. Receive applications. Use this to determine amount of materials needed. <i>(Note: application should be inclusive - e.g. wheelchair-accessible planter option, option to work with a mentor for new gardeners, etc.)</i>																					
C	Hire a summer coordinator	Through grants, hire a summer coordinator who can be on-site daily to help instruct / teach, organize volunteers, help with maintenance, help with communication & event planning, and unlock/lock building.																					
C	Order materials	Based on plans and number of community gardens, order materials/equipment as required (e.g. plants, soil, mulch, wood, water tanks, tools).																					
<b>PHASE 5: GRAND OPENING</b>																							
P	Prairie maintenance	Prairie maintenance as required.																					
C	Work party	Build additional community garden planters according to number of applications received.																					
C W	Grand opening	Official opening of the community gardens and food forest. Mandatory orientation to go over ground rules and training for tree/shrub maintenance. Optional gardening tutorial/workshop.																					
C	Spring planting event	Public planting event for the native food forest, based on previously made plans. Provide lunch.																					
C	Plan next phase of food forest	Based on participation and funding, the board and interested volunteers will plan for the next phase of food forest.																					
C	Work parties	Prepare soil / sheet mulch area for next phase of food forest; perform other work as required.																					
C	Mid-summer potluck	Casual potluck dinner at the site for gardeners.																					
C	Fall planting	Public planting of next phase of food forest, based on previously made plans. Provide lunch.																					
C	Fall harvest celebration	Public event and fundraiser with live music, family-friendly activities, tours. Fundraise with pizza made in pizza oven, artisanal products, and food produced on site.																					

		PRE-DESIGN	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5			
ACTIVITY / TASK		1-2 YEARS	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	
<b>PHASE 6: OFF-SEASON PLANNING (REPEAT EVERY YEAR, ADAPTING AS APPROPRIATE)</b>																						
C	W	Board meetings	Reflect on the previous year. Discuss plans for next year - work to be done, budgets, next phase of food forest, events, etc. Include one meeting with City representative to plan collaboratively.																			
C		Communication & outreach	Continue to communicate progress, plans, and other relevant info via website, social media, newsletters, etc.																			
C		Winter Celebration	Public meeting in mid-winter with food forest community. Provide dessert potluck and warm beverages. Discuss plans, get feedback, get excited for coming year. Use feedback to finalize plans and budgets.																			
C		Apply for funding	Based on plans and budgets, apply for funding for materials and hiring of a Garden Coordinator. Reach out for donations.																			
C		Community gardens applications	Distribute and receive applications for community gardens.																			
C		Hire a summer coordinator	Through grants, hire a summer coordinator who can be on-site daily to help instruct / teach, organize volunteers, help with maintenance, help with communication & event planning, and unlock/lock building.																			
C		Order materials	Based on plans and funding, order materials/equipment as required (e.g. plants, soil, mulch, wood, water tanks)																			
<b>PHASE 7: SEASONAL ACTIVITIES (REPEAT EVERY YEAR, ADAPTING AS APPROPRIATE)</b>																						
P		Prairie maintenance	Prairie maintenance and spring burns as required																			
C		Annual grand opening	Annual opening event for community gardens and food forest. Mandatory orientation for new members to go over ground rules, training for tree/shrub maintenance. Optional gardening tutorial/workshop.																			
C		Spring planting	Public planting event for the next phase of the food forest, based on previously made plans. Provide lunch.																			
C		Plan next phase of food forest	Based on participation and funding, the board and interested volunteers plan the next phase of food forest.																			
C		Work parties	Two work parties per month, plus a final cleanup in September. Prepare soil / sheet mulch area for next phase of food forest, weeding, pruning, and other work as required.																			

CONTINUE FOR YEARS 6-20+

		PRE-DESIGN	YEAR 1				YEAR 2				YEAR 3				YEAR 4				YEAR 5		
ACTIVITY / TASK		1-2 YEARS	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL	WINTER	SPRING	SUMMER	FALL
C	Mid-summer potluck																				
C W	Walkthrough with City of Winnipeg representative																				
C	Harvest parties																				
C	Summer programming																				
C	Fall planting																				
C	Fall harvest celebration																				

REPEAT PHASES 6 & 7 EVERY YEAR, ADAPTING AS APPROPRIATE.

# 09

## CONCLUSION

This practicum explored one way to integrate urban agriculture into a public park using a community-based approach, which is the most common and successful approach for public food forests today. However, this approach is not typical in the field of landscape architecture. In my experience, most public parks are professionally designed and implemented from concept to construction – perhaps with some community consultation at some point in the process, but not necessarily. With community-based projects, the design and construction processes are not straight-forward, and the design might never reach a state of “completion.” This was my greatest challenge in this practicum: rather than assuming a simple design-bid-build process, I had to determine what each party (the City, external contractors, and community members) was best suited to do during the design, construction, and maintenance phases of the park. This had major implications for the spatial arrangement and phasing of design components. I opted for an approach where the City manages the design “scaffold” (i.e. paths, lawn, sidewalks), which can then be “filled in” with modular food production spaces by the community over time. Landscape architects looking to be involved in community-based food initiatives will need to consider alternative ways of thinking, creating, and implementing their designs, which could present an opportunity for growth – as this process was for me.

Despite this practicum’s emphasis on community-based food initiatives, in reality, the community-based approach is not always possible. A prerequisite for a community-based public food forest is the local community’s passion and motivation to create and maintain it. Even if a landscape architect tirelessly campaigns, canvasses, and converses with the community to initiate a food forest, if the community still isn’t interested, then that’s that; you can’t make a community-based project without the community. So what is a landscape architect to do if they want to make a difference, but the community does not share their passion? Privately managed public food commons are still an option, provided that the client has sufficient passion, funds, and resources to independently support the project. The City of Calgary, for instance, runs public orchards in parks that are maintained by hired staff, as well as research-focused public orchards that trial different fruit tree varieties. In Winnipeg, there is a public orchard owned and maintained by The Forks, a popular market and greenspace. While privately run projects can be successful, they lack a community volunteer “safety net” that can care for them should funds dry up, making them more vulnerable to financial swings. Privately run food commons can also risk abuse, vandalism, or the “tragedy of the commons” if they lack the public buy-in and social ties to promote respect and cooperation.

At the end of the day, landscape architects don't need to create a big food commons initiative or find that ideal "foodie" client to contribute to a better food system. Positive changes can be as small as integrating one fruit tree or a few berry shrubs into a park planting plan. Whether it's a large public food forest, a small orchard, or a single plum tree in a public park, the experience of finding, harvesting, and eating fresh fruit is delightful – and important. With the rise of food illiteracy, nature deficit disorder, and the harmful effects of disconnected food system, we cannot afford to wait for that once-in-a-lifetime opportunity to create an edible park. As the old Chinese proverb says: "The best time to plant a tree was 20 years ago. The second best time is now." Landscape architects can make small changes now, with every tree, every planting plan, every park design – trusting that one day, the fruits of our labour will make a difference.

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## FIGURES: IMAGES

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Fig. 2.1.1

Mike Swim, 2005. *Canola Fields 1*. Flickr [image online] Available at: <https://www.flickr.com/photos/leemcarthur/329738964/in/photostream/>. Accessed May 1, 2021. Creative Commons license.

Fig. 2.2.1

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Fig. 2.2.2

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Fig. 2.3.1

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Fig. 2.5.1

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Fig. 4.2.1

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Fig. 4.2.2

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Fig. 4.2.3

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Fig. 4.2.4

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Fig. 4.2.5

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Fig. 4.3.2

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#### Fig. 7.2.17 Connections to parks and trails

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#### Fig. 7.2.18 Neighbourhood circulation

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#### Fig. 7.2.19 Neighbourhoods and zoning

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