HTFC
PLANNING & DESIGN

September 27, 2023



Portage & Main Revitalization Study

Final Urban Design Vision Report

Submitted to

THE CITY OF WINNIPEG

Submitted by

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The Portage & Main intersection is located in the Homeland of the Red River Métis and on the ancestral lands of the Anishinaabeg, Cree, and Dakota peoples, on Treaty 1 Territory.

We acknowledge the rich history of Portage & Main, and through this visioning process, have worked to reflect Indigenous stories, teachings, rights, and aspirations.

We thank the Indigenous collaborators, designers, advisors and rightsholders whose support and involvement have enriched this work.

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Executive Summary

The intersection of Portage Avenue and Main Street has a deep cultural, economic, political and historic importance within the City of Winnipeg that continues to this day. It has been the host of many celebrations, demonstrations, ceremonies and gatherings over the years and remains an iconic piece of Winnipeg's cultural landscape.

In 2021, HTFC Planning & Design and their sub-consultants Brook McIlroy, Argyle, Stantec, and Ombrages were commissioned to develop a revitalization vision for Portage & Main, triggered by the need to demolish portions of the roadway and sidewalks to replace the aging waterproofing membrane on the underground concourse. The membrane replacement, recent investments from private owners at the corners, and a forthcoming transit station at the intersection all support rethinking the public realm at Portage & Main to create a more welcoming, vibrant, and equitable experience that supports flexible programming and reflects the spirit of the City of Winnipeg.

The project includes an urban design vision, membrane replacement strategy, and Class 4 costs for all capital works. The Vision was to adhere to the 2018 plebiscite and prohibit at-grade pedestrian crossings but include measures to permit public access to the roadways for special events.

Touchstones

Early in the visioning process, four key touchstones were identified as guiding design principles, which included considerations for the intersection's iconic image, the activation of its public realm, factors in creating equitable spaces, and features for sustainable and resilient development. Throughout the study, the various design iterations were assessed against these touchstones with input from stakeholders and rightsholders.

Background Analysis

The early stages of the Vision process involved the review of previous visions, proposed designs and competitions associated with the intersection. In addition, relevant background documents, studies and reports for the intersection were acquired and reviewed for a fuller context of the infrastructure, impacts of the surrounding locations, and related planning implications for the site.

A series of background reports were conducted by the team, which are available in the appendices of this document:

- Stantec Architecture Ltd. prepared the Membrane Replacement Report that outlines the preferred process and costs associated with that work.
- Historian Anne Lindsay developed an Indigenous Heritage Report for the Portage & Main and the surrounding area, drawing on archival records and oral history sources.
- Lighting specialists Ombrages conducted a lighting study for the intersection.

In addition to these documents, the team examined opportunities and constraints for Portage and Main. The site analysis focused on finding usable space, enhancing the pedestrian comfort and mobility, and protecting the architectural integrity of surrounding buildings. Accessibility was raised repeatedly as a concern, as was the need for more convenient and safe concourse access. The team assessed the site through the lens of Crime Prevention Through Environmental Design (CPTED) principles and pinpointed a series of improvements that could be made to ensure all individuals feel safe and welcome.

Engagement
Engagement specialists Argyle were responsible for the three-stage public and stakeholder engagement process in which the team helped to inform stakeholders, rightsholders and members of the public about the project and solicit feedback on design directions for the revitalization project. Engagement tactics included multiple one-on-one interviews, workshops and focus group presentations, pop-ups events and an online survey, all of which helped to shape the final design for the visioning process.

The Recommended Vision
Several rounds of design were brought forward and reviewed by the City of Winnipeg technical steering committee, stakeholders, rightsholders and the general public. Iterations included overhead and subterranean structures, monumental artworks, multi-media lighting, and building edge-to-building edge repaving options. The design ideas generated considerable public interest. Support was split between very bold moves (e.g., Sky Garden) and combining modest improvements like nicer paving, trees and lighting. There was also very broad support for improved programming opportunities to give people a reason to spend time at the intersection.

The feedback, background research and analysis results were distilled into six "design drivers" that focused the team's attention for a recommended vision:

- Accessibility: Addressing the deficits in access at street level and to the concourse;
- Transit Station: Embracing the proposed station as a positive force of transformation, despite uncertainty about its location and form;
- Safety and Activity: Focusing on safety that comes from vibrancy, equitable placemaking efforts, and private investments in the public realm.
- Roots: Connecting people to the history of the site
- Cohesion: Linking the four corners through shared materials and design language.
- Clarity: Helping people read and navigate the intersection

The recommended Vision consists of a set of interrelated strategies that respond to these drivers. Key strategies are:

- A new Rapid Transit station situated at the intersection. Subject to further study, this may include dedicated pedestrian access via a controlled crossing to the platform, and/.or public washrooms.
- Eliminate northbound right turn from Main Street and reconfigure curb layout to significantly expand pedestrian amenity space on Portage Avenue East. There may also be an opportunity to slightly expand amenity space on the west side of Main Street by adjusting curb radii.
- New conical stone bollards at the corners to replace existing concrete barricades, designed for lighter appearance, ease of opening, and resistance to snow clearing damage. Cables or rails between the bollards can be removed for events and celebrations.
- At select locations, roadway may be elevated to form a curbless transition between the sidewalk and driving surface, addressing accessibility concerns during major events. Locations would be selected where there is low risk of vehicles deviating from the road.
- New concourse access pavilions at the northeast and northwest corners, and a renovated access at the southwest corner, complete with elevators for accessibility and single, straight, staircase flights with safer sightlines between the streetscape and the underground. Structures will be highly transparent and can be canvasses for Indigenous artwork or storytelling, with roof structures inspired by Indigenous weaving patterns.

- Coordinated hours of operation across all access points, and safe, accessible alternatives provided when the concourse is closed.
- Circular pattern inscribed in the centre of the intersection symbolizes kinship and cooperation and identifies the location as the key crossroads in the Downtown. Pattern and other public art opportunities at the corner will be managed by the Winnipeg Arts Council and encourage participation of Indigenous artists.
- Provision of secure bike parking in the concourse and/or nearby parkades.
- Custom wayfinding icons and patterns differentiating the four corners and help visitors navigate the concourse, inspired by the intersection's historic trail roots and Indigenous iconography.
- Flexible multi-media lighting masts in the medians that will allow for carefully tuned area lighting, architectural lighting, and special event lighting. The masts include wind turbines to offset electrical costs.
- A unified planting palette at all four corners including private plazas, composed of native grasses that recall the historic landscape and interact with the wind.
- Selective tree planting, pavilions with green roofs, and soil cells creating an integrated bioretention system.
- Enhanced programming that builds on the activities already occurring in the plaza spaces, with participation of the BIZ and downtown arts and cultural groups.
- Partnerships with downtown social service agencies and specialists to help bridge between user groups, deescalate conflicts, and build an equitable relationship with all users.

Maintenance and Life Cycle Renewal

Stakeholders and rightsholders were unequivocal in stating the importance of a robust maintenance program and plans for future renewals, if ambitious revitalization plans such as this are to move forward. Some strategies could include fostering continued and new partnerships with business and downtown agencies, dedicating tax revenue to a maintenance and renewal endowment fund, and allocating funds from the City's local and regional street reserves.

Construction Costs and Fees

The Estimate has been prepared to a Class '4' cost classification based on the consultants' conceptual work on the design vision, underground services, concourse waterproofing system replacement and supplemented by existing conditions documentation provided by the City of Winnipeg.

The scope of work includes all the known construction costs to implement the Vision apart from the future transit Station and related items. The Estimate Summary in Section 10 provides a breakdown of the construction costs totalling approximately $73 M. Further detail is provided in the applicable appendices. In addition to the construction costs, estimated consulting fees to take the project to a preliminary design level of completion complete with a Class '3' cost are estimated to be $1.95 M. Percentage rates and assumptions are presented in the appendix. Note that all costs are in 2023 dollars, and subject to escallation, which is currently estimated at 1.5% per month.

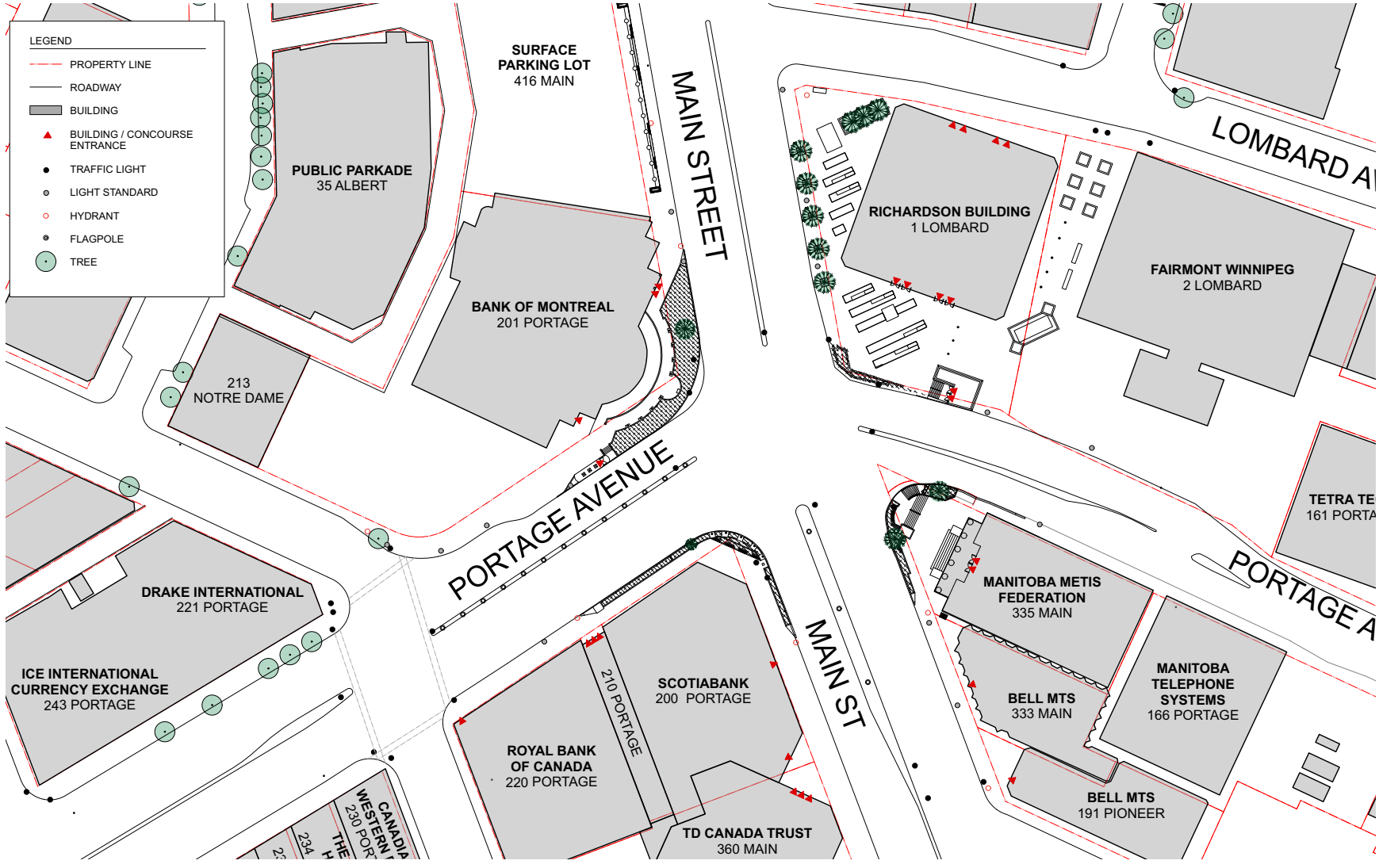

Figure 1. Existing site plan

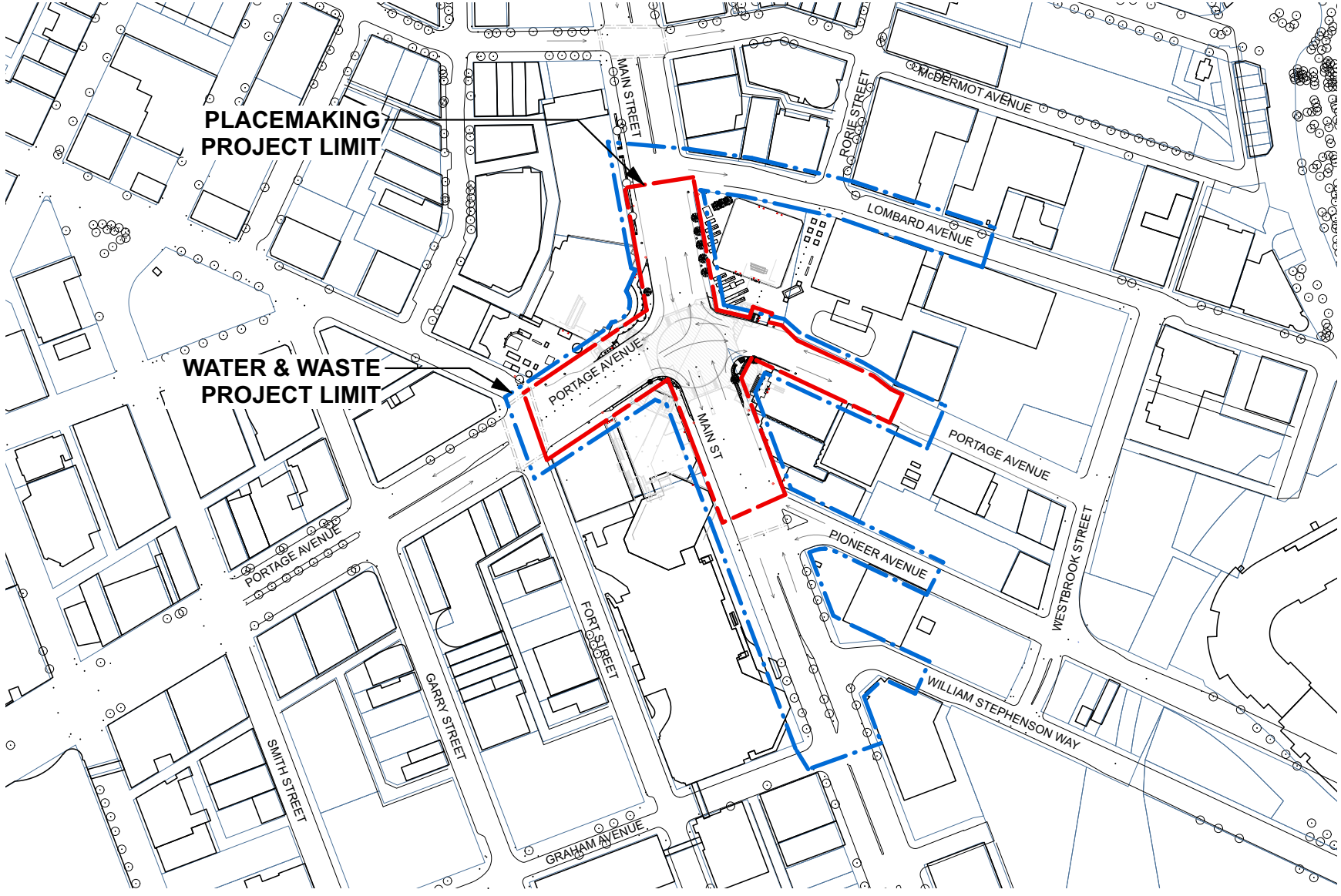

Figure 2. Project limits for water & waste impacts (blue) and urban design vision (red)

1.0 Introduction

This submission provides design concepts, technical and cost information for the revitalization of Portage & Main. The study was triggered by the requirement to replace the waterproofing membrane protecting the pedestrian concourse beneath the intersection, which is at the end of its service life. The roadway and large sections of sidewalk on all four corners need to be removed for that work, creating an opportunity to reimagine the intersection as a more vibrant, inclusive, sustainable, and appealing landmark in the heart of the city. This aligns well with the recent surge in reinvestment by properties owners at Portage & Main.

Based on findings from a number of engagement workshops with various stakeholder groups, the City of Winnipeg, and the general public, a series of design iterations were explored and refined, culminating in a recommended Vision.

2.0 Purpose, Scope, & Limits

Per the RFP, the scope and limits of this study are:

- Recommendations for addressing replacement of the concourse membrane, including construction process, utility impacts, timeline, and traffic management during construction;
- Creation of an Urban Design Vision for Portage and Main that provides design and placemaking direction to unify and activate the four corners, in a manner that recognizes and reflects our present relationship with Indigenous Peoples and their longstanding relationship to the land where Winnipeg now resides;
- Class 4 costs for all capital works.

The RFP dictates that the design adhere to the 2018 plebiscite and continue to prohibit at-grade pedestrian crossings, however the reconstructed barriers should be flexible enough to permit periodic public access to the roadways for special events. The revitalization vision should also take into consideration the impacts of a future major transit station at the intersection, as identified in the approved Winnipeg Transit Master Plan (2021).

The urban design and membrane/utility components of the study each have different geographical limits – refer to Figure 2 for approximate boundaries.

3.0 Approach

The vision for Portage & Main has been a unique exercise in design, and in supporting the evolution of a space iconic to Winnipeg. This is not a typical urban design exercise, nor is Portage & Main a typical intersection. Winnipeggers have deeply entrenched and highly divisive ideas about what this place means, what it says about us, and what it should be. The objective has been to put forth suitable design solutions that improve the intersection, while striving to engender a sense of pride and stewardship in the envisioned outcomes.

Given the vivid forces at work, the Urban Design Vision for Portage & Main must be more than art, streetscape, and creative infrastructure renewal on their own can provide - that is, more than a physical design response. The approach has called for a robust focus on engagement and communication – not only to hear from stakeholders and users and bring them along through the process, but to build consensus and channel public passions toward something noble, true, and celebratory within the technical constraints of these four corners.

3.1 Touchstones

Four parameters or 'touchstones' were identified at the outset of the project to gauge the success for all proposed solutions in meeting the City's aspirations for the revitalization.

Image

- Improving the impression of the intersection and the city for the public and visitors.
- Complementing other aspects of the Vision and the downtown to help create a unified image.
- Developing appropriate design to the status of this place.

Activation

- Adding positive vitality to the intersection in all seasons.
- Drawing people in with diverse programming and spontaneous uses.
- Fitting into the daily patterns of the growing number of downtown residents.

Equity

- Meeting the needs of all users.
- Acknowledging the rich multicultural heritage of Winnipeg, highlighting that of Indigenous and Métis people.
- Ensuring everyone feels welcome, safe, and respected in the space.
- Engendering a sense of stewardship and personal responsibility for the space.

Resilience

- Providing the necessary durability and flexibility to meet future needs and challenges.
- Sheltering users from weather extremes.
- Creating adaptable design for shifting demographics, transportation modes, environmental conditions, and social priorities.

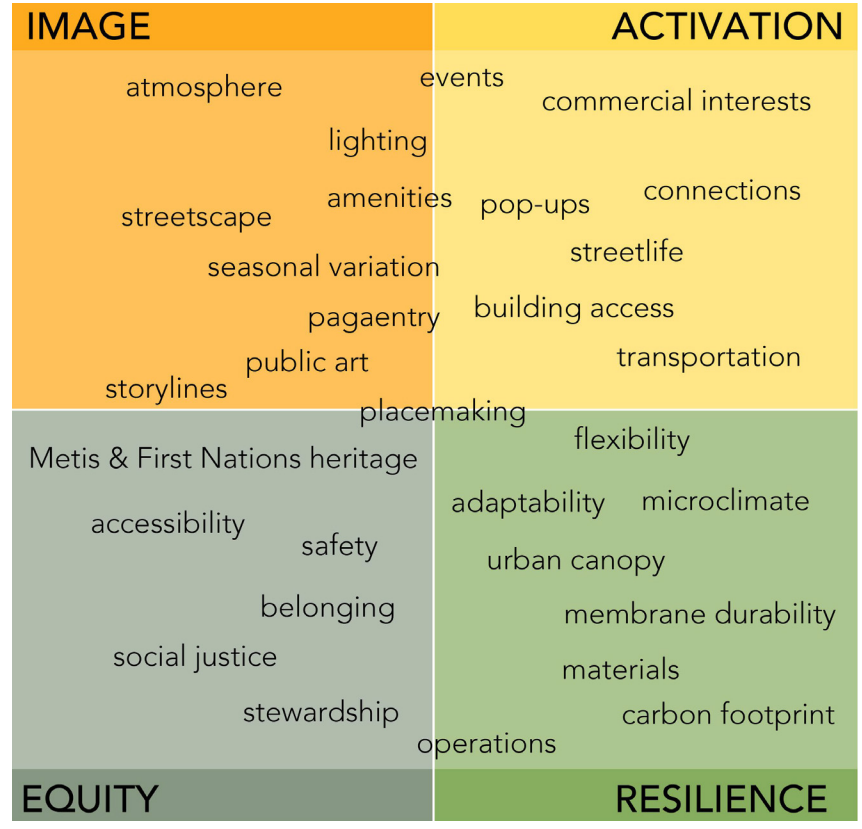

Figure 3. Touchpoints

3.2 Study Process

Coordination with Membrane Replacement Strategy
Although it was originally proposed that the urban design vision component of the project would precede the membrane replacement strategy, shortly after award it was decided that the two components should flip, to better align the visioning process with opportunities for in-person engagement coming out of the pandemic lockdown. This added several months to the project timeline but resulted in more thorough and effective connection with the public and stakeholders. Both streams were well informed by regular coordination meetings between the client, engineering and urban design teams. The study process for the Membrane Replacement Strategy is included in Appendix 1.

The principal steps in the Urban Design Vision study process were as follows:

Background (December 2021 – March 2022)

- Document review and analysis of the site, context, policies and programs in place
- Research report on history of intersection with First Nations and Métis focus (submitted December 2, 2021)
- Nocturnal site assessment with lighting designers Ombrages, (March 16, 2022)

Phase 1 Engagement (March – April 2022)

- Stakeholder interviews, revealing that most were in favour of opening the intersection visually and physically, prioritizing safety and accessibility, collaborating with property owners, and incorporating programming in the space.
- Designers' forum, where design firms actively working with property owners at the four corners met to share information on current initiatives and express their support for a unified design language for the publicly-owned spaces at the intersection.

Phase 2 Engagement (June – July 2022)

- Stakeholder workshop, centred on evaluating and exploring six design intent statements that grew out of Phase 1 and were proposed to form the foundation for the urban design vision. Stakeholders strongly agreed that Portage & Main is Winnipeg's most important intersection and directed the team to focus on street-level activation, add greenspace, accommodate art and culture initiatives, and recognize the seasonality of Winnipeg, while preserving the intersection's long cultural history and stories. Reimagining the intersection as a transportation hub and emphasizing sustainability features had lower support (July 14, 2022).

Development of Draft Vision Concepts (June 2022 – September 2022)

- Four draft vision concepts and their variations were developed to capture a range of approaches to revitalizing the intersection and address issues of lack of public space, protecting viewsheds, honouring history, and providing flexible event space. Options included an overhead public park (the "sky garden"), a sunken intersection covered with a park/plaza at grade, interactive monumental public art pieces, and bold curbless paving patterns that flowed across the roadway and sidewalks. Refer to Appendix 5.

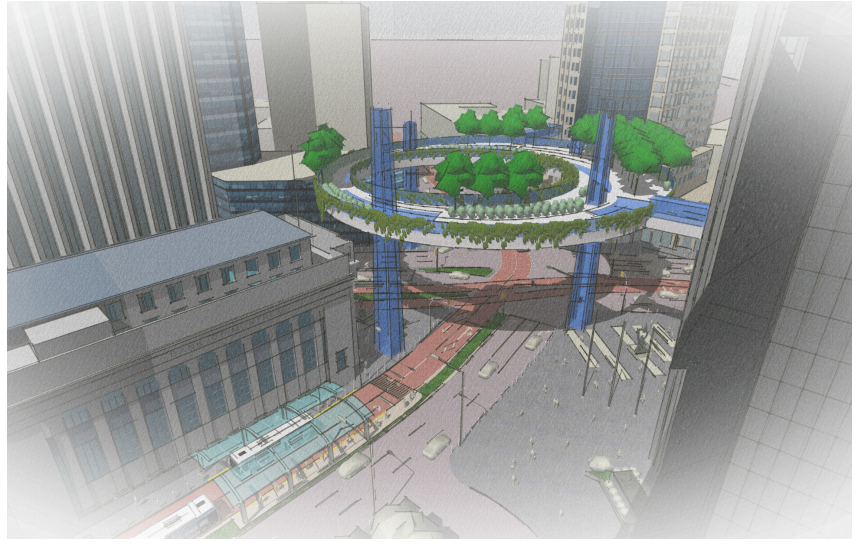

Figure 4. Draft vision concept: Sky Garden

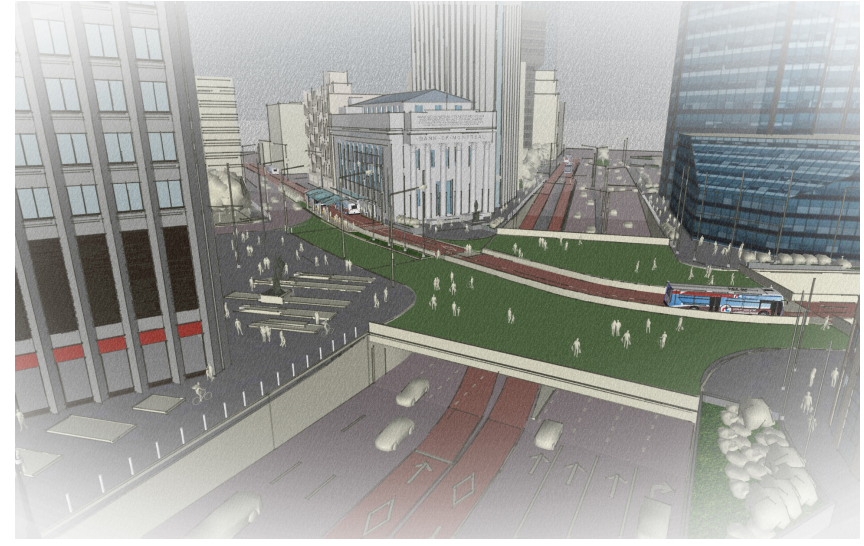

Figure 5. Draft vision concept: Park Over Cars



Figure 6. Draft vision concept: Monumental Public Art

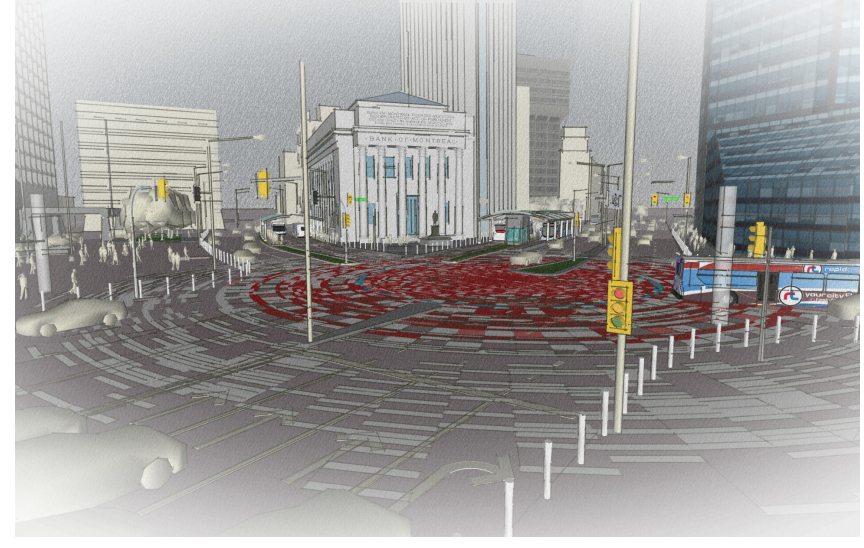

Figure 7. Draft vision concept: Edge to Edge Paving

City of Winnipeg Urban Design Preview (August 26, 2022)

- City of Winnipeg urban designers reviewed the draft visions and suggested minor changes. All concepts were approved to be shown to select stakeholders.

Property Owners' Previews (September 14 – 28, 2022)

- Meetings to gather impressions and feedback on draft vision concepts from property owners and Treaty 1 representative. The at-grade park-over-sunken-intersection option, and enhanced programming and lighting received the most positive response. Concerns raised include overshadowing the architecture, stealing street life with raised attractions, loss of concourse connectivity and foot traffic in underground commercial spaces, lack of maintenance for new infrastructure, and lack of winter activation. None of the responses were interpreted as fatal flaws triggering their removal.

Steering Committee Meetings (October 25 & October 31, 2022)

- HTFC presented the draft visions to the project technical steering committee composed of various City department representatives. Due to complexity of the ideas presented, a follow-up meeting was also organized. The committee was most supportive of the sky garden concept but raised issues about the park-over-sunken-intersection option's cost, utility impacts, and upstream and downstream impacts on Main Street. HTFC was instructed to remove this option from further consideration. They also instructed HTFC to address the paving pattern option's durability and its potential disorienting effect on drivers.

Design Opportunities (November 2022 – January 2023)

- In consultation with the City's project manager and public engagement coordinator, HTFC and the design team refined and reorganized the draft vision concepts as "design opportunities" based on direction from the steering committee and results of Phase 2 engagement. These are included in Appendix 6.

Stakeholder Presentations (February 2023)

- HTFC presented the design opportunities to representatives from social service groups, Indigenous organizations, accessibility advocates, business groups and residents' organizations Participants were asked to rank how the opportunities addressed issues of equity, activation, resilience, and image. The stakeholders responded favourably to the opportunities that included greenspace, flexible lighting, public programming, human scale, art, storytelling and activation. The sky garden received the least favourable commentary including concerns about shadows, reduced activity at street level, isolation, and accessibility challenges. Accessibility – physical, financial, social – was a recurring point of discussion at all the meetings.



Figure 8. Draft design opportunity: Sky Garden

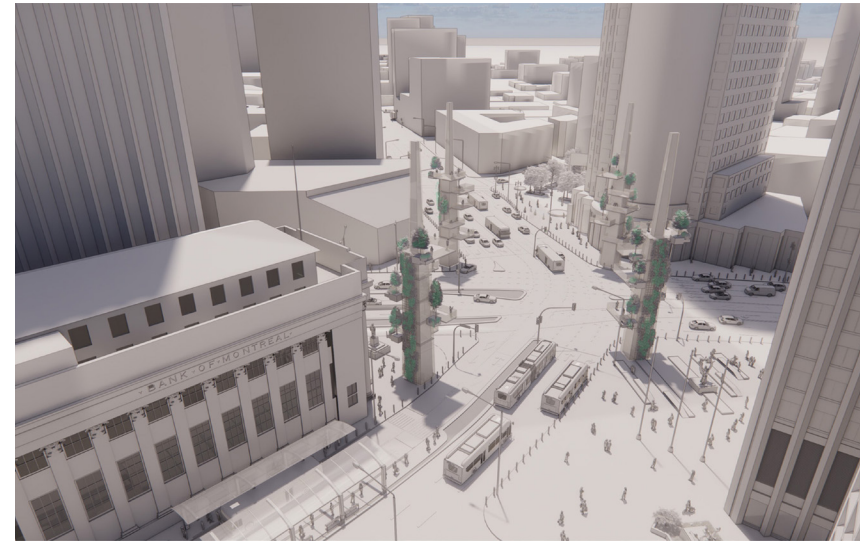

Figure 9. Draft design opportunity: Elevator Towers

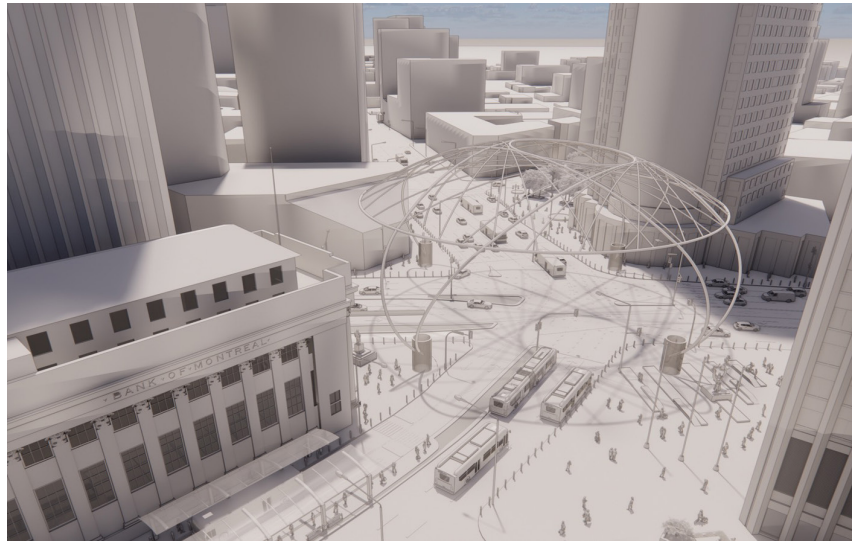

Figure 10. Draft design opportunity: Monumental Art

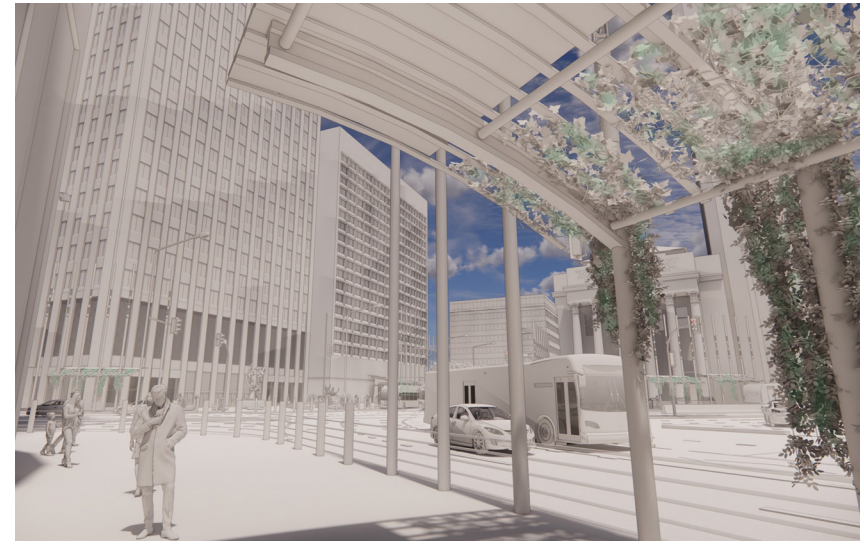

Figure 11. Draft design opportunity: Street Edge Canopy

Phase 3 Engagement (March – May 2023)

- Public survey and pop-up events – in May, 2023 Argyle organized and facilitated two public pop-up events showcasing the draft design opportunities, as well as one focus group discussion with representatives from various social service agencies and their community members. This was accompanied by a city-wide on-line survey of the same material, posted by the City of Winnipeg. In addition to excellent participation in the survey and events, this phase of engagement generated a high level of media interest and social media discussion, much of it centred on the debate about opening the intersection to pedestrian crossings. Generally, public support was split between interest in very bold opportunities like the sky garden and combining modest improvements like nicer paving, trees, shelter, multi-media and lighting. There was also wide support for various types of programming to activate to public spaces.

Owners' Preview (July 2023)

- Stakeholders and rightsholders whose properties were affected by the Vision were given a preview of the draft recommended vision. The revised vision was then vetted through City departments for technical feasibility and compliance with the terms of reference for the study.

Owners' Preview (August 2023)

- HTFC and the City project manager met key stakeholders and rightsholders to review the updated recommended vision and receive final questions and comments. The groups offered suggestions for cleaning/maintenance, improved wayfinding, appropriate terminology and crime deterrents, but all were generally positive about the Vision.

Recommended Vision (June – September 2023)

- Based on feedback and direction from the City, HTFC and the design team compiled a recommended vision, incorporating the most successful and well-supported attributes from design opportunities.

Stakeholder Presentation (August 2023)

- Argyle arranged a presentation and Q and A session for the recommended vision, inviting the stakeholders that participated in Phase 1 and 2 engagement events. Response was positive, with some requests for further detail on cyclist infrastructure, maintenance strategy and winter activation.

Final Reports (September 2023)

- Following final refinements, cost estimate updates and coordination with the membrane replacement strategy, the urban design vision and membrane replacement strategy reports were submitted to the City of Winnipeg.



Figure 12. OurWinnipeg

4.0 Background

4.1 Planning Context

The project study area encompasses the intersection of Portage Avenue and Main Street. The project limits extend to Fort Street on the west boundary along Portage Avenue to the eastern property boundary of the Fairmont Hotel, east of Main Street; and Graham Avenue at the south edge of the site to Lombard Avenue in the north (Figure 2). The study area is provided direction through a number of City of Winnipeg documents that are part of a hierarchy of plans and policies that are enabled through the City of Winnipeg Charter Act. These items include policy directive from Development Plan OurWinnipeg 2045, in addition, to Direction Strategies including the Complete Communities 2.0 and Sustainable Transportation. Other city-wide policies and plans also inform the study area, including Winnipeg's Transportation Master Plan, Winnipeg Transit Master Plan, Climate Change Action Plan, and Pedestrian & Cycling Strategies. Zoning tools such as the Downtown Zoning By-law 100/2004 provide specific implementation direction for these areas.

The City of Winnipeg Charter Act
The City of Winnipeg Charter Act is provincial legislation that sets out the structure and authority of municipal government in the City of Winnipeg. The Act enables the City of Winnipeg to pass by-laws including those related to planning and development (under Part 6 of the Act), such as the City's development plan (OurWinnipeg) and secondary plans.

Our Winnipeg 2045 (2022) ***RFP linked to older 2011 version*
OurWinnipeg 2045 is the City of Winnipeg's development plan by-law. The document was enacted in 2022 and replaces the City's earlier development plan, previously adopted in 2011. OurWinnipeg 2045 articulates the City's goals and aspirations at the highest level, setting out a long-term vision, plans and policies for the next 22 years. The plan provides direction for physical, social, environmental, and economic objectives and sustainable land uses and development within our city. OurWinnipeg 2045's objectives and policy directions inform all secondary plans and decisions on development within city boundaries.

Complete Communities Direction Strategy 2.0 (2022) **RFP linked to older 2011 version*
Complete Communities 2.0 (CCDS 2.0) is a city-wide secondary plan and one of four strategies that aims to advance the sustainable development goals set out in OurWinnipeg 2045, guiding growth, development, and land use in the City of Winnipeg. The primary goal of CCDS 2.0 is to establish an urban structure for the city's future growth and development, that physically and spatially support the principles of complete communities.

Winnipeg is expecting population growth with numbers of over 160,000 people, add more than 83,000 new jobs by the year 2040. The CCDS takes this into consideration, promoting opportunities for downtown revitalization, transit-oriented development and urban infill. The policy areas targeted for downtown – Land Use, Mobility, Urban Design, and Arts, Culture and Education.

The Vision for the Revitalization of Portage & Main aligns with the goals set out in CCDS 2.0, supporting the vision of transformation in the downtown area by reducing the impact of automobile use to enhance the pedestrian experience Downtown and by establishing of an enjoyable, accessible, and safe urban environment.

Sustainable Transportation Plan Direction Strategy (2011)
Sustainable Transportation Plan Direction Strategy is one of the four foundation strategies that supports OurWinnipeg. The direction strategy sets the framework for the City's Transportation Master Plan and guides the provision of transportation in the city over the next 25 years.

The purpose of the Sustainable Transportation Direction Strategy is to analyze the change of the urban structure over time, focusing on the social, environmental, and economic sustainability of moving goods, people, and services within Winnipeg. The document reviews current streets, public transit, active transportation network, and travel demand in the city, and provides direction in these areas based on future projections for the urban structure.

Key strategic goals of this document include the integrating of transportation with land use; developing a system that supports active, accessible, and healthy lifestyle options; creating a safe, efficient, and equitable transportation system; ensuring well-maintained transportation infrastructure; and creating a financially sustainable model for transportation.

Winnipeg Transportation Master Plan (2011)
The Winnipeg Transportation Master Plan is a supporting document to the Sustainable Transportation Plan Direction Strategy, that aims to guide the long term planning, development, renewal, and maintenance of Winnipeg's multi-modal transportation system.

The Master Plan aligns with the city's projected needs and supports growth and the overall vision for sustainable transportation within Winnipeg and the surrounding areas. The document takes into consideration the current and future conditions for land use, roads, transit, active transportation, goods movement, and travel demand in the city and the region.

Winnipeg Transit Master Plan (2021)
The Winnipeg Transit Master Plan is a document that provides and sets a 25-year vision for transit service and infrastructure in the City of Winnipeg, supported by strategic policy guidance that creates structure and transparency. The plan focuses on transit service classification, service guidelines, infrastructure guidelines, Winnipeg Transit Plus recommendations, and a fare strategy.



Figure 13. GIS satellite image of Portage & Main

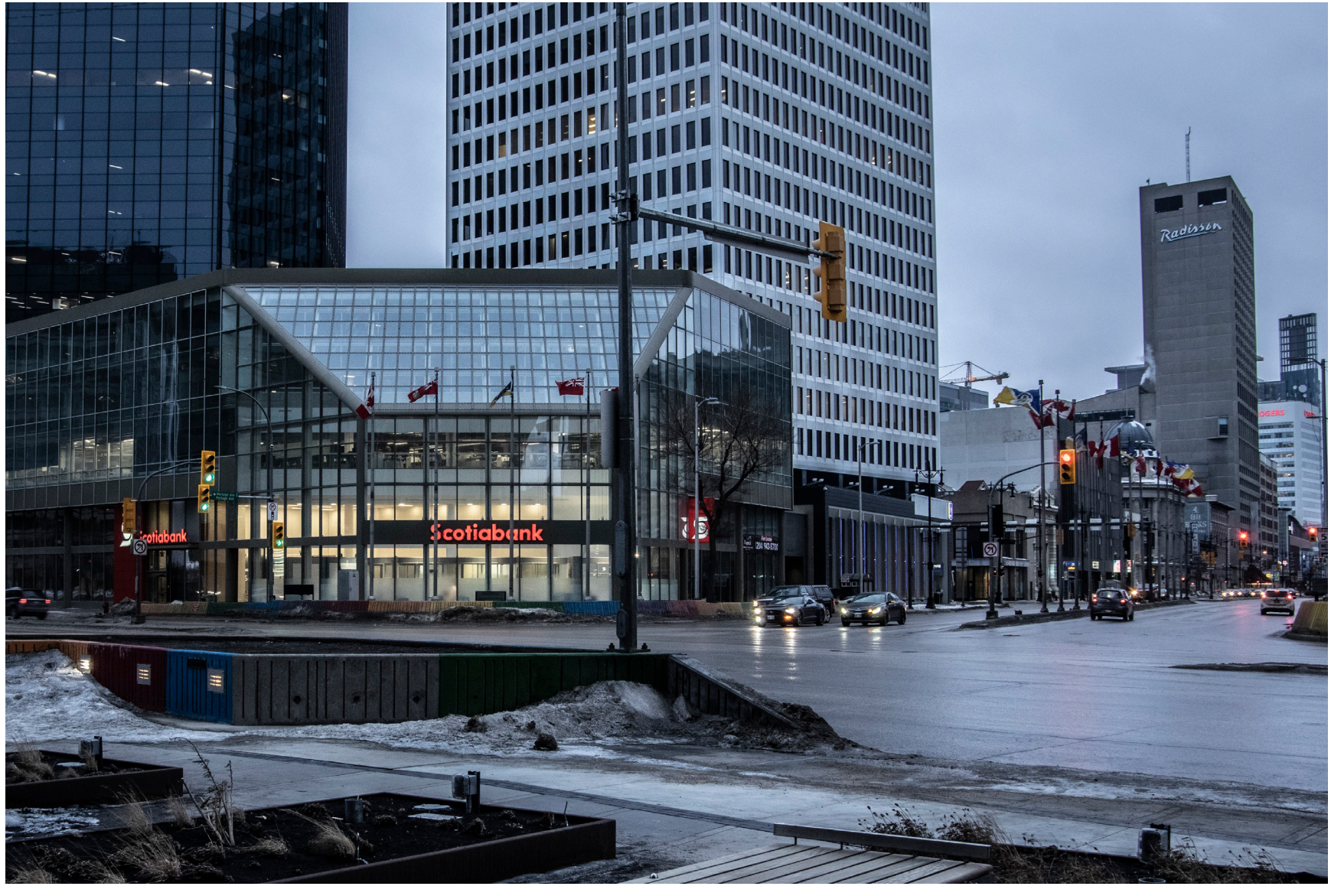

Figure 14. Photo by Bob Kurylko

Winnipeg Transit Master Plan (2021) *continued*
The Vision is supported by nine goals including the enhancing of customer experience, increasing ridership, improving downtown mobility, complementing land use development, improving multi-modal mobility, ensuring inclusive transit, continuously innovating, empowering health communities, and balancing investment with affordability. These objectives aim to provide an improved transit system for Winnipeggers.

Winnipeg Climate Change Action Plan (2018)
Winnipeg's Climate Action Plan provides a framework for effectively mitigating climate change by reducing greenhouse gas (GHG) emissions. The goal is to collaboratively revitalize the local economy, while creating walkable neighbourhoods and livable communities, improving transportation networks, building and maintaining healthier buildings, and enhancing connectivity between greenspaces and parks throughout Winnipeg.

The Portage & Main Vision aligns with goals in the action plan that promote climate resilience, including the greening of the intersection to mitigate the urban heat island effect and creating a more welcoming and vibrant public realm to encourage pedestrian activity in the downtown core.

Winnipeg Pedestrian and Cycling Strategies
The Winnipeg Pedestrian and Cycling Strategies (WPCS) is a comprehensive document aimed at maximizing transportation options in the city. These strategies are intended provide a long term vision for the next 25 years that gives direction for walking and cycling policies, infrastructure, and programs. The WPCS focuses on accessibility, comfort and safety for pedestrians and cyclists, and includes a detailed implementation plan for improvements throughout the city and build upon the guidance OurWinnipeg, the CCDS and the Transportation Master Plan.

As indicated in the Strategic Goals, Directions and Actions section of the document, the Portage & Main Vision aligns with these plans to improve upon connectivity, convenience, safety & accessibility, maintenance, vibrancy, and awareness at street level of the intersection.

Winnipeg Downtown Zoning By-law 100/2004
Winnipeg Downtown Zoning By-law 100/2004 is an implementation tool that controls and regulates the use of property and development in the portion of the city referred to as Downtown Winnipeg (designated in Part 8) and is intended to advance OurWinnipeg downtown policies.

The Portage & Main study area lies within the Multiple Use sector of the By-Law (in Part 3), which encourages the range of uses, sites, activities, and buildings typical to a diverse and vibrant central business district. Urban design review in the Multiple-Use Sector is intended to enhance pedestrian comfort and encourage high-quality built form. The Vision for the Revitalization of Portage & Main follow the direction laid out in the Winnipeg Downtown Zoning by-Law.

Centre Plan 2050
The City of Winnipeg is in the process of creating a long-term plan to guide development in Downtown Winnipeg over the next 30 years. CentrePlan 2050 will focus on investing in parks, streets, and buildings downtown as a mechanism to draw more people to the City's core as visitors and inhabitants. The plan aims to transform the Downtown and has provided public feedback through five key themes: Living and Visiting Downtown, Greening the Downtown, Transportation in and around Downtown, Buildings and Public Spaces, and the Redevelopment of Graham Avenue.

CentrePlan 2050 plan is currently in early stages of its development but is scheduled to move into the implementation phase after it's recommendation to Council in the Fall of 2024.

Business Improvement Zones
Winnipeg Business Improvement Zones (BIZ) are non-profit associations of business owners in a defined geographic area that provide support for businesses and assist in the development of economic activity through the enhancement of street beautification, safety, and marketing initiatives to create a more positive environment for local businesses to thrive. The City of Winnipeg currently has 16 Business Improvement Zones, two of which apply to the Portage & Main intersection, the Downtown Winnipeg BIZ and the Exchange District BIZ. Both were represented in each phase of the stakeholder engagement process.

4.3 Previous Studies & Initiatives

In the two decades prior to this commission, Portage & Main has been the subject of several studies and initiatives, including an international design competition.

City Crossing International Competition (2003/2004)

In 2003 the City of Winnipeg initiated a single-stage multidisciplinary design competition focused on revitalizing Portage & Main and exploring its role as a cultural space in Downtown. Representatives from various sectors and professions from within city were brought together to share perspectives and priorities about redevelopment opportunities for the Portage & Main intersection. From the 72 entries, Janet Rosenberg & Corbett Cibinel Architect's "Light Forest" was selected as the winner. Their entry listed the following design objectives:

- Respect and augment the functions of the intersection.
- Create further connections to the city as a whole.
- Construct visual connections between vertical layers of the intersection.
- Reforest the downtown core.
- Utilize light as an identifying feature.
- Tap into existing passive energy resources (wind and sun).
- Involve stakeholders and activate the public.
- Create a site of landmark quality

Janet Rosenberg, Corbett Cibinel winning entry brief, 2003.

All of these objectives, with the exception of reforestation, are carried forward in the current Vision.

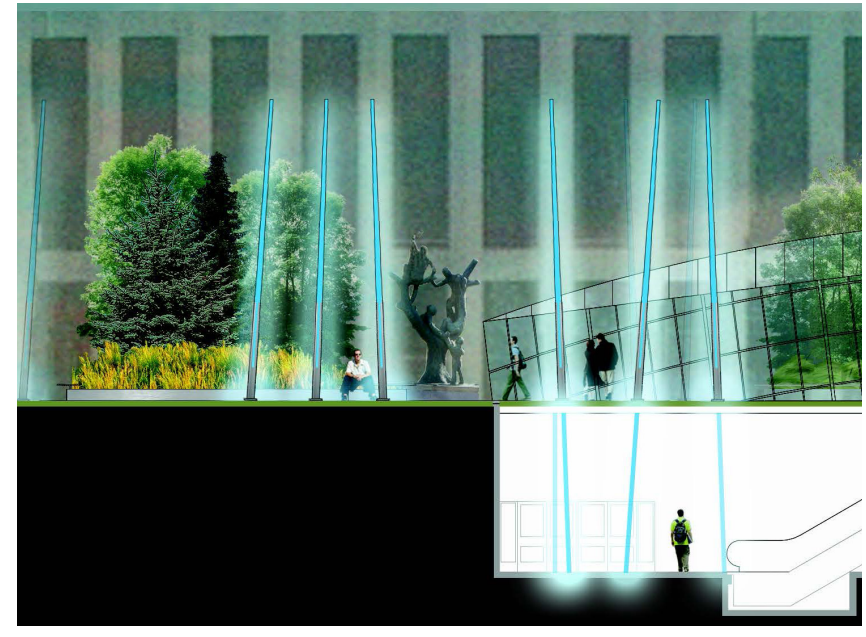

Figure 15. "Light Forest" winning competition entry, Janet Rosenberg, Corbett Cibinel Architecture. Image from 2006 feasibility study.

Light Forest Feasibility Study (2006)
The Rosenberg/Cibinel team was commissioned to prepare a feasibility study for the 'Light Forest' concept in 2006. Conclusions relevant to the current Vision include:

- Recommendation to replace existing concourse access points with glass structures;
- Inclusion of wind turbines, planting, and sculptural lighting;
- New canopy at 210 Portage concourse access;
- Phased and scalable implementation, tied to ongoing assessments and studies;
- Implementation of a special operating and maintenance budget for the intersection

Portage & Main Vision, Studies, & Assessment (2017)
In 2017 The City of Winnipeg hired the firm Perkins +Will to develop a Portage & Main Vision Guide and accompanying video, in the face of Winnipeg's changing downtown. Their aim to was to guide design efforts to animate the space and restore a sense of place to P&M, redefining how this intersection supports and connects people, places, and transportation across Winnipeg.

Recommendations from this exercise revolved around four key pillars:
1. Celebrate the history & heritage
2. Restore the vibrancy of Portage & Main
3. Enhance the connectivity
4. Transform the intersection beyond just movement

These objectives can be achieved by activating the street edge, enhancing the street level activity, and improving connections to the concourse and the street, allowing Portage & Main to keep pace with the rest of Winnipeg's evolving downtown.

Portage & Main Transportation Study (2017)
Dillon Consulting conducted a microsimulation analysis of impacts related to restoring pedestrian crossings at Portage & Main. The report takes a holistic view of transportation, evaluating impacts for all current forms of transportation, including comparisons between travel times for able-bodied pedestrians and people using wheelchairs. The report offers detailed and nuanced findings, but overall the analysis suggests that only 50% of the vehicles using the intersection will experience increased congestion and variability, and this is balanced by the significant improvements to mobility for non-auto users, particularly those with disabilities.

Portage & Main Intersection Revitalization RFP and Plebiscite (2018)
In 2018, based on the results of the 2017 Transportation Study, and assent from the surrounding property owners, the City of Winnipeg released a request for proposals to design the phased re-opening of Portage & Main to pedestrian crossings, in parallel with concourse membrane replacement work by others.

Before the work was awarded, Council elected to hold a non-binding plebiscite on the question of opening Portage & Main to above-ground foot traffic. Winnipeggers voted nearly two-to-one to keep the intersection closed. Though he supported opening, Mayor Brian Bowman pledged to honour the plebiscite results, which put plans to revitalize the intersection on hold for several years.

365 Main Street Portage & Main Underground Concourse Facility Condition Assessment (2019)

SMS Engineering Ltd. was hired to conduct a facility condition assessment for the underground concourse. Work included evaluating and costing required repairs/upgrades to architectural, structural, mechanical, and electrical systems, as well as a review of life safety and building code compliance. The study reported deficiencies in accessibility, wayfinding, fire suppression, mechanical and electrical systems, and evidence of chronic water seepage and related damages, Costs for the repairs, including an allowance for surface works and inflation, were estimated at $$46M, though access to the roof membrane and a formal pricing package were recommended to confirm the membrane replacement cost.

Portage & Main Concourse Membrane Renewal (2022)

Stantec was hired to work on the design and costing of high priority structural, mechanical and electrical repairs in the concourse, based on the SMS Condition Assessment.

City of Winnipeg Downtown Recovery Strategy (2021-2024)

The Downtown Recovery Strategy is a three-year coordinated action and investment plan to stimulate the social and economic recovery of Downtown post-pandemic, with the support of three levels of government and the participation of a range of agencies invested in the wellbeing of our core. The strategy identifies five overlapping streams of activity: revitalizing places, energizing spaces, supporting people, living downtown, and building business: all of which to varying degrees will apply to the new vision for Portage & Main.

5.0 Opportunities and Constraints

5.1 Site Analysis

The site analysis for this study was targeted: inquiries focused on the known issues of finding more usable pedestrian space for social interaction and programming, enhancing pedestrian comfort, and ensuring proposed elements don't compromise important views or the architectural integrity of surrounding buildings.

Available Public Space

Figure 16 shows the limited extent of existing publicly-owned space at the intersection. With the removal of the existing concrete barricades, an additional 1.5 to 6 metres of sidewalk space will be reclaimed, but they remain relatively narrow and linear, which is not conducive to vibrant programming, lingering and socializing.

To increase the amount of usable public space, there are only three options: create new spaces above the sidewalks, find it at-grade by claiming unused pockets and narrowing the roads, or create more space below grade. The site analysis process started with a series of studies to understand how vehicles and pedestrians experience the intersection visually, as any above-grade structures could have a significant impact on the views to and from the surrounding buildings (at-grade and below-grade found spaces do not present the same potential for visual impacts). It was found that all the buildings have podiums or other character-defining architectural features in the lower five stories that should remain unimpeded by revitalization design (Figure 17). So any new public space would need to be constructed six stories above street level. This finding is reflected in the early urban design vision explorations of overhead structures.

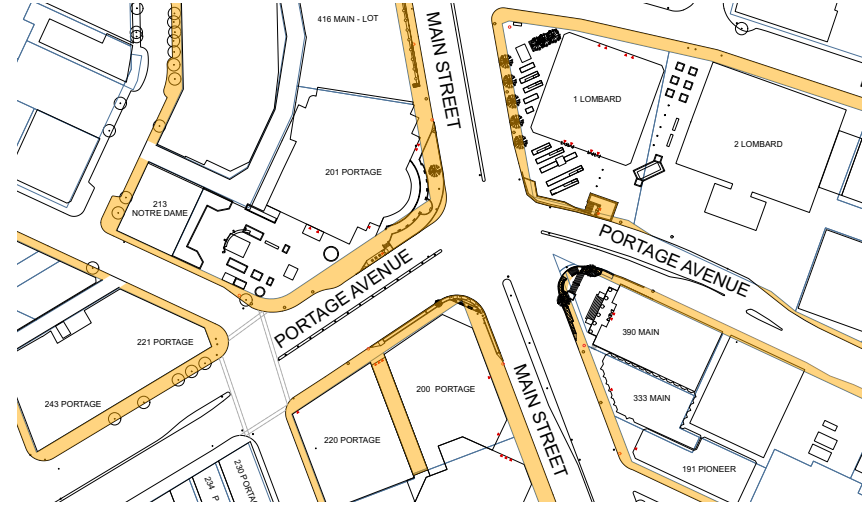

Figure 16. Public pedestrian space highlighted at street level.

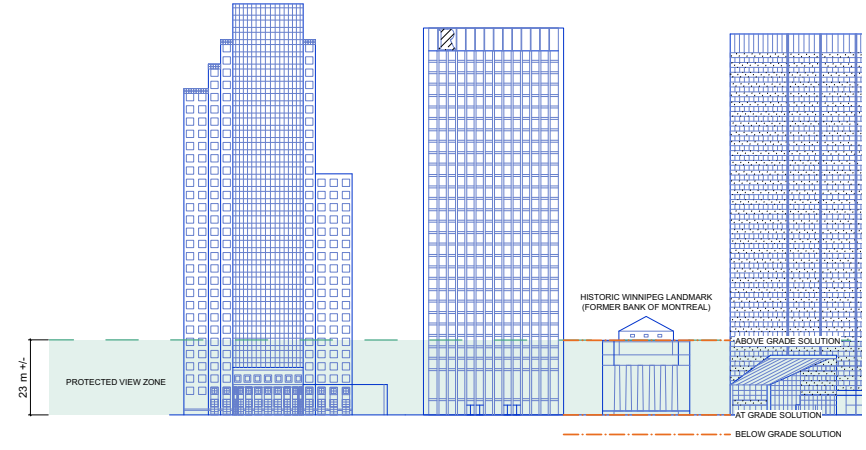

Figure 17. Façade protected view study.

Activity Generators
This was followed by an inventory of the activity generators in the area, such as entrances and exits, transit stops, restaurant patios, and programmable venues. While all four corners have several activity generators, most are concentrated on the north and east sides of the intersection, which suggests the need for additional attention to activating the public realm on the southwest side in the Vision.

Shadow/Sun Study
The shadow study looked at sunlight penetration into the public spaces in the summer months, spring/fall (September and March are identical), and winter. It revealed reliable sun in the plazas and sidewalks north of Portage through the summer months until around 5 pm, with the corner of Fort and Portage remains sunny into the early evening, and patches of sun in the spring fall. In winter, the public spaces will be mostly in shadow, with a shaft of sunlight slipping across Main Street over the lunch hour. In June and July, people pausing in the sidewalk spaces and plazas will appreciate some options for shade, and in the shadowy winter, shelter from the wind will be important to improve comfort.

Wind
Portage & Main is known for its frequent high wind speeds and gusts. As Jino Distasio points out in a 2017 article for CBC, wind and weather were among the primary reasons the City began planning weather protected walkways at the corner. The strongest and most frequent winds in Winnipeg come from the south and northwest, which are channeled along the Main Street corridor, and intensified by the downdrafts that occur when they interact with the towers (Figures 18 & 19).

In high wind situations, soft landscape features like plantings are mostly ineffective as mitigation measures. The most effective way to reduce winds around tall buildings is with architectural features like podiums and canopies. While podiums around existing buildings are not a practical recommendation, free standing or attached canopies could be added and would likely significantly improve the comfort of people using the sidewalks and plazas. The other implication of this analysis it that spaces that are not oriented due south or northwest may experience some buffering by adjacent

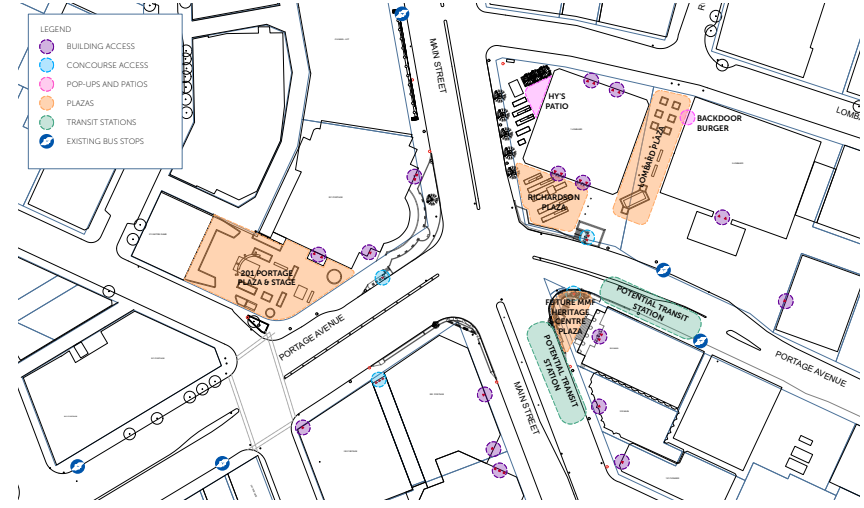

Figure 18. Activity Generators

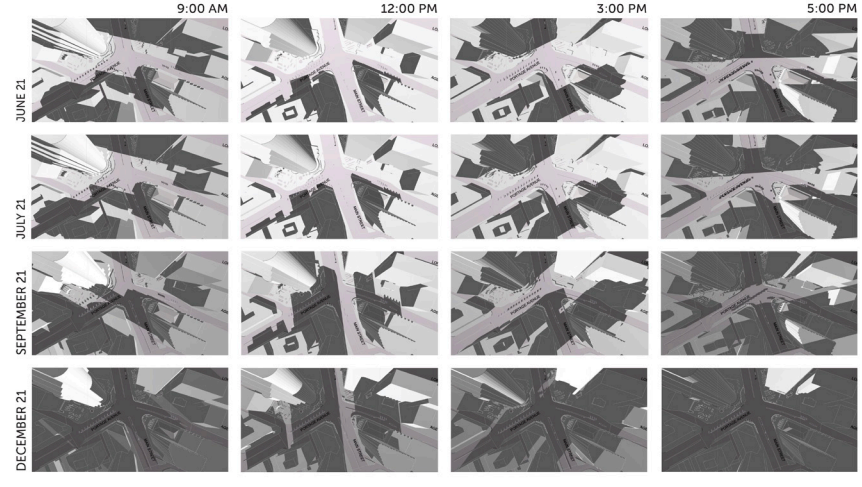

Figure 19. Shadow/Sun Study

buildings and will generally be less windy – these include the plaza at 201 Portage and the south sidewalk of Portage Avenue. This said, the turbulent wind patterns in any urban core are complex and difficult to predict without further study and modelling.

Lighting

Team members and lighting specialists Ombrages prepared a lighting study for Portage & Main, involving investigation of existing lighting infrastructure, review of relevant reports and studies, and a night walk around all corners of the intersection to assess firsthand the quality and quantity of light (Figure).

Portage & Main offers unique challenges for lighting, including the prominence of traffic, presence of monumental buildings, nearby residential development, and lack of vegetation to serve as a backdrop or illuminated accent. Ombrages' analysis identified opportunities to create a more welcoming and comfortable environments for pedestrians and residents utilizing more energy efficient and environmentally sensitive systems for illumination.

Accessibility

Though well known within the accessibility community, the debate leading up to the 2018 plebiscite brought public attention to the challenges Portage & Main presents for people living with disabilities. The Independent Living Resource Centre, with offices in the northeast corner of the intersection, provided a summary of some of the key barriers faced by their community members. The concourse accessibility will be dealt with in a separate study, but comments related to the publicly owned concourse access points and conditions on the sidewalks leading to the access points are applicable:

- As there is no ground level pedestrian crossing at Portage/Main, and no standardized accessible points of entry (to the underground) from the four corners of the intersection, the accessibility of pedestrian crossings (curb cuts, tactile identification, road repairs, etc.) within a 1-2 block radius of the intersection needs to be a priority.
- All City of Winnipeg pedestrian access points (street level) to the underground; at the four corners of the intersection, are inaccessible (only stairs), and include no accessibility information (wayfinding for how



Figure 20. Downdrafts and turbulence at the base of a tall building. From Pedestrian Wind Comfort and Safety Studies, City of Missisauga 2023.

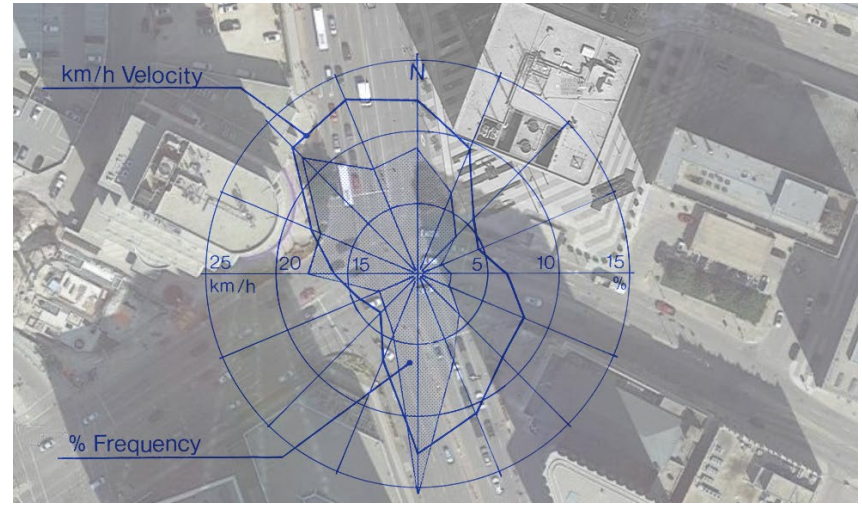

Figure 21. Winnipeg wind roses showing average velocity and frequency. The strongest and most frequent winds aligning with Main Street.

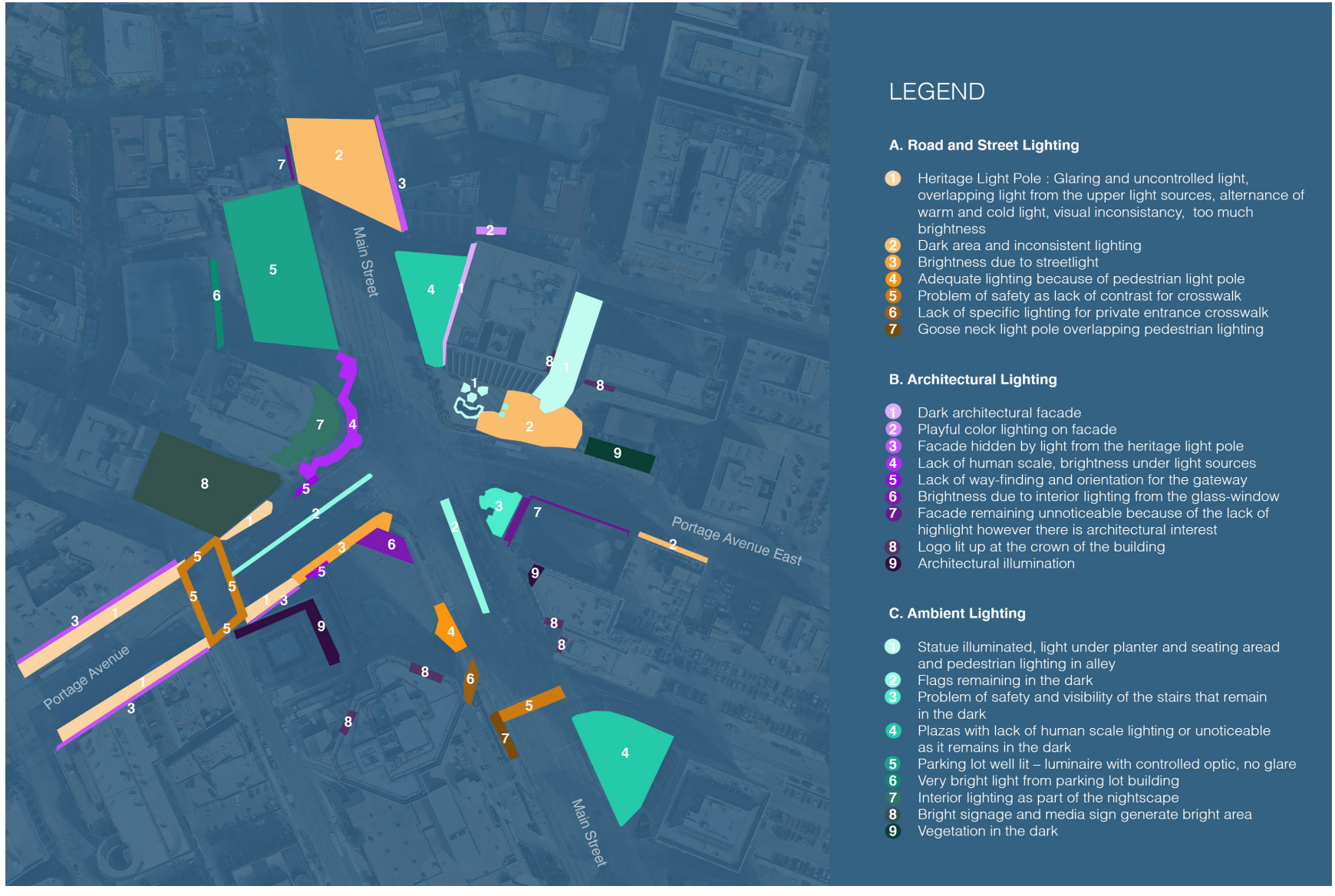

Figure 22. Lighting Study by Ombrages. More detail in Appendix 4.

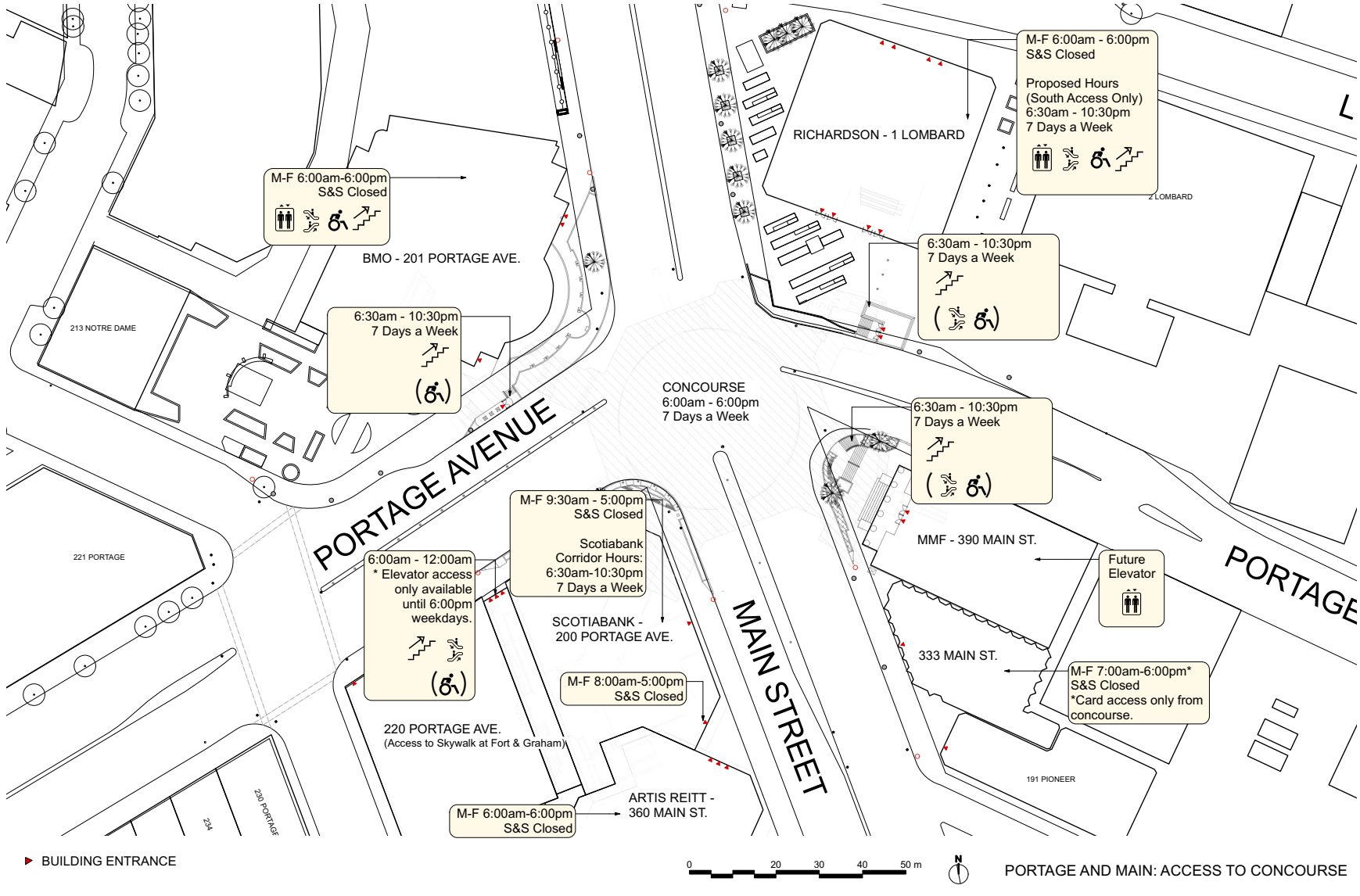

Figure 23. Various hours of operation

a person with a disability is supposed to access the underground).

- Access to the underground from street level, including lifts, wayfinding signage, ramps, elevators and hours of availability differ between the four (private) properties. Standardization of accessibility amenities/ requirements are vitally important to ensure the free movement of all citizens.
- Within the underground network it is difficult to impossible to navigate the accessible route without prior knowledge of the various lifts, paths, elevators, barriers, etc. A standardized wayfinding system (i.e. "You are here") for people with disabilities is needed.

Source: Independent Living Resource Centre Correspondence, June 2022

Crime Prevention Through Environmental Design (CPTED)

Safety and security are critical to the success of public spaces. Crime Prevention Through Environmental Design (CPTED) is a powerful tool that can help prevent criminal activity and improve community safety and comfort for all individuals, influencing both the physical and social characteristics of a place. These techniques have been taken into consideration during the initial analysis of Portage & Main, and in developing a new vision for the intersection.

Culture & Connectivity

The four corners of Portage & Main, in their current state, lack a cohesive and unifying design, with little space dedicated to culture and placemaking initiatives. The public realm of the intersection could benefit from activation with art, displays and other cultural features that draw people and create a community connection to the site. Recommendation: That the Portage & Main Vision has been designed with flexible spaces that promote these activities, help to develop a sense of community and ownership where people care about the spaces they are in. This helps to animate the space in a way that can improve safety and perceptions of safety.

Sightlines & Lighting

There are currently areas within Portage & Main of low visibility, particularly in and around the large impermeable concrete concourse access bunkers. These create obstructed views and areas of refuge not visible from the street which can deter pedestrians entering and exiting the underground. The existing lighting on site is successful in illuminating the area at nighttime, leaving few shadowed spots on site, although there is room to improve the quality of light for a more positive pedestrian experience. Refer to the Lighting Strategy in Appendix 4.



Figure 24. Above ground bunker entrance to concourse



Figure 25. Night walk

Access Control

Access to the buildings at Portage & Main and the concourse is currently monitored by security guards and controlled through set operating hours. As Figure 23 illustrates, the hours of operation vary from door to door, which complicates monitoring and reduces the effectiveness of these controls. This also has a detrimental effect on accessibility, safety and convenience for all users.

As of mid 2023, the City and owners of the Richardson Building are in discussions to extend the hours of public access to the concourse through their building, in exchange for the removal of the existing free-standing concourse access adjacent to Portage Avenue East. From a CPTED perspective, this is a positive change – offering better supervision, sightlines, and experience for the public. However, such agreements are subject to change over time and may not be negotiable with all building owners. If the concourse is to remain in operation, ensuring safe and inclusive access from property fully under the City's control should be the ultimate goal.

Landscaping & Maintenance

Many of the intersection's existing barricades double as flowerbeds, in some spots creating narrow paths that make a quick exit difficult in an emergency. The general upkeep of the planting beds on City property varies. The narrower beds are often well-tended and healthy looking, while the wider beds include large bare patches, providing little public amenity to justify the constriction of the sidewalk.

Maintenance was one of the most common concerns raised during conversations with the users, stakeholders, and administrators. It was reported that City forces are challenged to keep up with regular cleaning and repairs at the intersection and connecting public spaces like the concourse, and that this has a detrimental effect on perceptions and behaviors at Portage & Main. In CPTED, the 'broken windows theory' states that visible signs of neglect and civil disorder in a public setting can encourage further crime and anti-social behavior. Therefore, these issues are more than cosmetic.



Figure 26. Above ground entrance to concourse



Figure 27. Planter boxes

Surrounding Plaza Development
The plazas at the Richardson Building and 201 Portage contribute significant 'social capital' to Portage & Main – that is, they expand the possibilities for interactions between people and broaden the range of activities that can occur there. During summer months, Back Door Burger and food truck festival animate the Richardson plaza, while 201 Portage is enlivened with its own well-visited hot dog vendor, regular concerts and performances, and the electronic marquee. The plaza space at 335 Main (Métis National Heritage Centre) will similarly contribute social activity and programming options once it is complete.

In April, 2022, the design team met with the designers responsible for the surrounding plazas, both complete and in development. Though all corners are developing independently, all participants shared an interest in working toward making Portage & Main a single, unified public space, and a commitment to continue the collaboration into subsequent phases of work at Portage & Main.

Summary of Membrane Requirements
Stantec Architecture Ltd. prepared a study outlining the preferred process and costs for replacement of the existing concourse waterproofing membrane, which is at the end of its service life. Work included a review of existing conditions through construction records, and consideration of the associated structural, geotechnical, and mechanical engineering requirements, as well as the impacts on utilities and transportation management during construction.

The full report is included in Appendix 1. Key recommendations that will affect the implementation of surface works are:

- Extent of excavation: In order to uncover the concourse roof and walls and accommodate working space and shoring structures, the excavation will extend beyond the limits of the roadway and require extensive restoration of public and some private lands, as well as careful coordination of vehicular, cycle, and pedestrian circulation during construction. The estimated construction limits are shown in Figure 28.
- Utilities: Available record drawings are not necessarily accurate or complete, but it is clear that a significant number of major services and utilities occupy the space between the concourse and the road surface. These include a 50" interceptor, water main, fibre optic cables, gas lines and LDS.
- Drainage: Surface and sub-surface drainage has been an issue affecting the interior of the concourse and surrounding buildings. The revitalization project needs adequate surface drainage with redundant protections to ensure the work does not contribute to future deterioration.
- Planters: It is difficult to maintain continuity of the waterproofing membrane around complex subsurface structures, and the planters create a constantly wet environment with the added threat of root penetration. Any future planters need to include proper root barriers, waterproofing details, subdrainage and incorporate materials suitable for intensive green roof construction.
- Penetrations of the membrane for services, fasteners, accessories and foundation elements should be minimized, with special attention to detailing at the transitions.
- Future repairs – consider demountable or salvageable materials and assemblies.

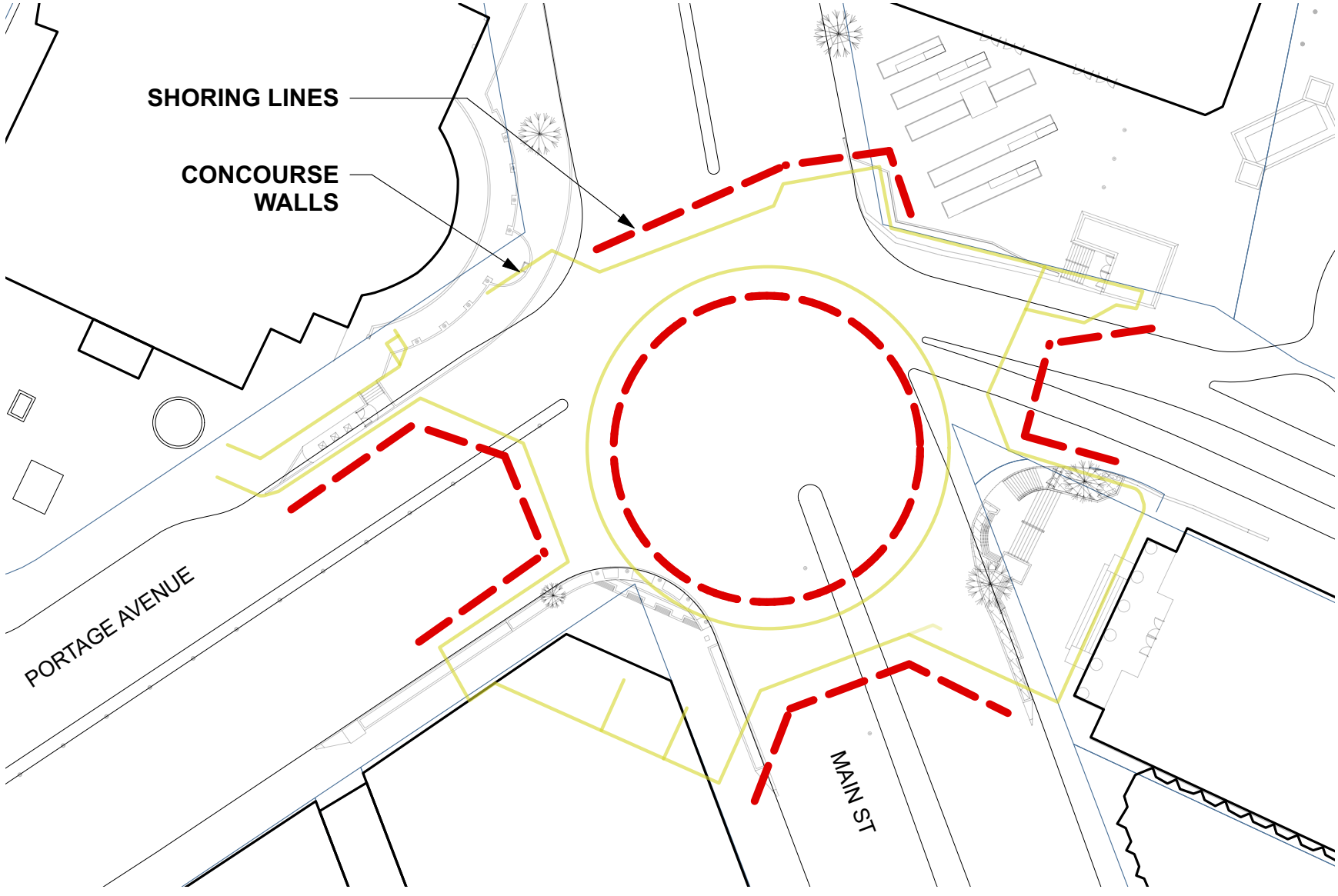

Figure 28. Concourse waterproofing membrane replacement excavation extents

6.0 Indigenous Heritage Themes

"The area that is today Portage and Main was part of an interdependent, reciprocal, healthy, ecological network connected with life on the land, and rooted in Indigenous knowledge, in community, and in the rich and diverse ecology of the area. Life in this gathering place was one of interchange and exchange. As M.E. Kelly, et al. write, until the early twentieth century, the area "was one of the key crossroads in the movement of goods and ideas across interior North America."

- Anne Lindsay, "Indigenous Histories at Portage and Main (2021), Appendix 2, page 5.

The recommended vision has been developed in consideration of the Indigenous Histories of the intersection. Historian Anne Lindsay has undertaken this research, consulting archival records and oral history sources, as a means of enriching and grounding recommended place-making practices.

6.1 Process

The Indigenous histories of Portage & Main have often fallen to the wayside in processes of design and consultation. It has been our intention throughout this study to reflect on these foundations and consider the rich tapestry of culture and contributions in our design process, integrating Indigenous stories, teachings, rights and inspirations in a meaningful way to honour this past and its peoples. Historian Anne Lindsay provided an overview of events and personalities involved in the history of the intersection and surrounding lands, drawing on archival records and oral history sources (Appendix 2). This provides a starting point to enrich and ground the recommended Vision, offering a fuller sense of the human history of the site. This process has benefited from the support and guidance of many Indigenous collaborators, designers, advisors and rightsholders, all of whom contributed to a more robust and holistic approach to the design of Portage & Main.

6.2 Themes

For millennia, Indigenous peoples have been using Portage & Main as a place for gathering, connection and exchange. Well before it was an intersection, as we know it today, the land beneath Portage & Main was a place of intersection between people, cultures and ideas, connecting Indigenous groups through networks of rivers and trails to much of North America. Defined by interdependent social, cultural, and ecological networks that have always been complex, deep, and reciprocal, these relationships have found their meaning and direction in traditional understandings of land, community, and ecology. Within this research, several themes stood out that could guide the design for a new vision:

A Place of Gathering

The Indigenous history of the Portage and Main intersection, reaches back more than six thousand years, and continues today. The land on which this intersection sits is part of the vibrant histories of First Nation and Métis occupation and land use, campsites, resource harvesting, gatherings, and ceremonies all took place in and around the site. The networks of rivers and trails supported the travel, trade, and interchange that occurred here and extended throughout most of North America, making this place ideal for gatherings and ceremonies.

Wahkohtowin
Wahkohtowin, the Ininew term meaning "kinship", is founded on the concept that all relationships, communities and natural systems are interconnected. In early times of settlement, this principle defined the Red River and its interactions among settlers and Indigenous groups of the area.

Conflict
Alongside the spirit of kinship and hospitality, relations between Indigenous peoples and settlers have also been marked by conflict: fur trade wars, racism, land tenure, commercial competition, targeted acts of violence and persecution against Indigenous peoples, were all parts of our collective history. Some events specific to Portage & Main include Manitoba's Reign of Terror after 1870, and the smallpox epidemic that ravaged the Indigenous communities across the plains, resulting in mass burials around the intersection.

Other Stories and Events
There are many fascinating and important events, personalities, and stories surrounding this intersection that will enrich our understanding of the long cultural history of the place:

- The Indigenous and Métis Red River carters and cart brigades that laid the physical and economic foundations for the intersection;
- The story of success and supports early settlers received from the pre-existing social, cultural, financial, and trading relationships with local indigenous communities of the area;
- The acknowledgement of the political identity of the intersection with earlier meetings of the Métis in the 1860s.

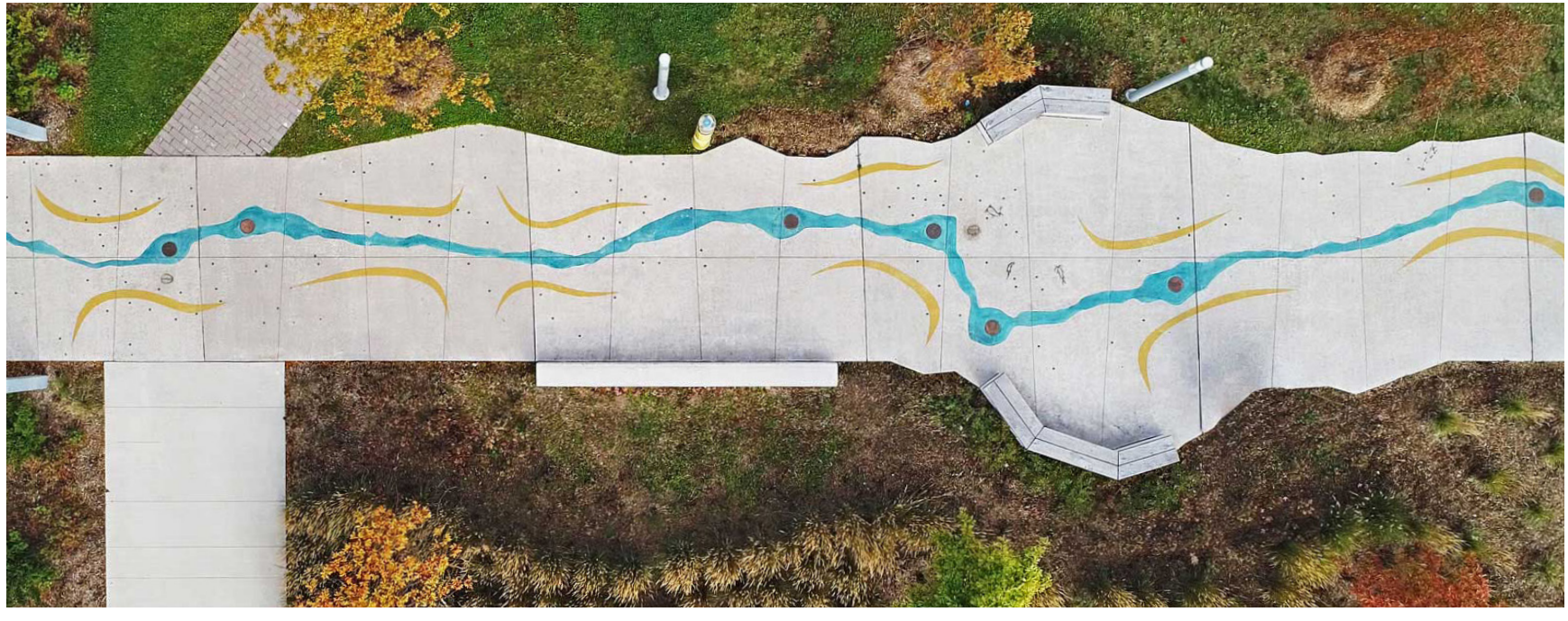

Figure 29. Indigenous cultural markers at Humber College designed by Brook McIlroy

7.0 Engagement Strategy

The engagement strategy for this project aimed to inform stakeholders and public about the opportunities and constraints for a new design vision for Portage & Main and involve them to understand their concerns, priorities and aspirations for the intersection. Communications emphasized the need to replace the waterproofing membrane that protects the concourse, and the resulting opportunity to re-imagine Portage & Main.

7.1 Process for Selecting Stakeholders

The team held a stakeholder mapping workshop to identify and sort key stakeholders by their level of interest and influence on the project, focusing on the people who are frequent users of the sidewalks and concourse. Candidates were organized into groups: property owners at the four corners; organizations that represent or work with businesses and people who use the intersection including social service organizations; and people who live and work near the intersection. Following the workshop, research was conducted to fill in gaps in representation. With this information, the team was able to tailor the communications and engagement strategies for each group.

7.2 Engagement Methods

A combination of in-person, virtual and online engagement tactics were used throughout the project, summarized in the accompanying tables. Detailed stakeholder lists, engagement materials, and findings are summarized in Appendix 10.



Figure 30. Pop-up in May 2023

Phase 1

METHOD	TIMING	WHO WAS ENGAGED	PURPOSE
Stakeholder interviews	April-May 2022	Primary and secondary stakeholders	Seek input to inform guiding statements for design
Designers meeting	April 2022	Designers working for property owners at four corners	Identify opportunities to work toward cohesive design for intersection
Stakeholder workshop and follow-up interviews	July-August 2022	Primary, secondary, and tertiary stakeholders	Gather feedback on design statements and ideas for design
Stakeholder meetings (in collaboration with Transit)	August-September 2022	Property owners on Portage Avenue East	Understand concerns, constraints and opportunities for how changes to the intersection might impact owners, tenants and people coming and going from their buildings

Phase 2

METHOD	TIMING	WHO WAS ENGAGED	PURPOSE
Stakeholder meetings	February 2023	Primary and secondary stakeholders	Gather feedback on design ideas
Pop-ups	May 2023	Public	Gather feedback on design ideas
Online survey	May 2023	Public	Gather feedback on design ideas
Community gathering	May 2023	Social service organizations and community members	Gather feedback on design ideas

Phase 3

METHOD	TIMING	WHO WAS ENGAGED	PURPOSE
Stakeholder meetings	August 2023	Primary and secondary stakeholders	Present draft design and answer questions

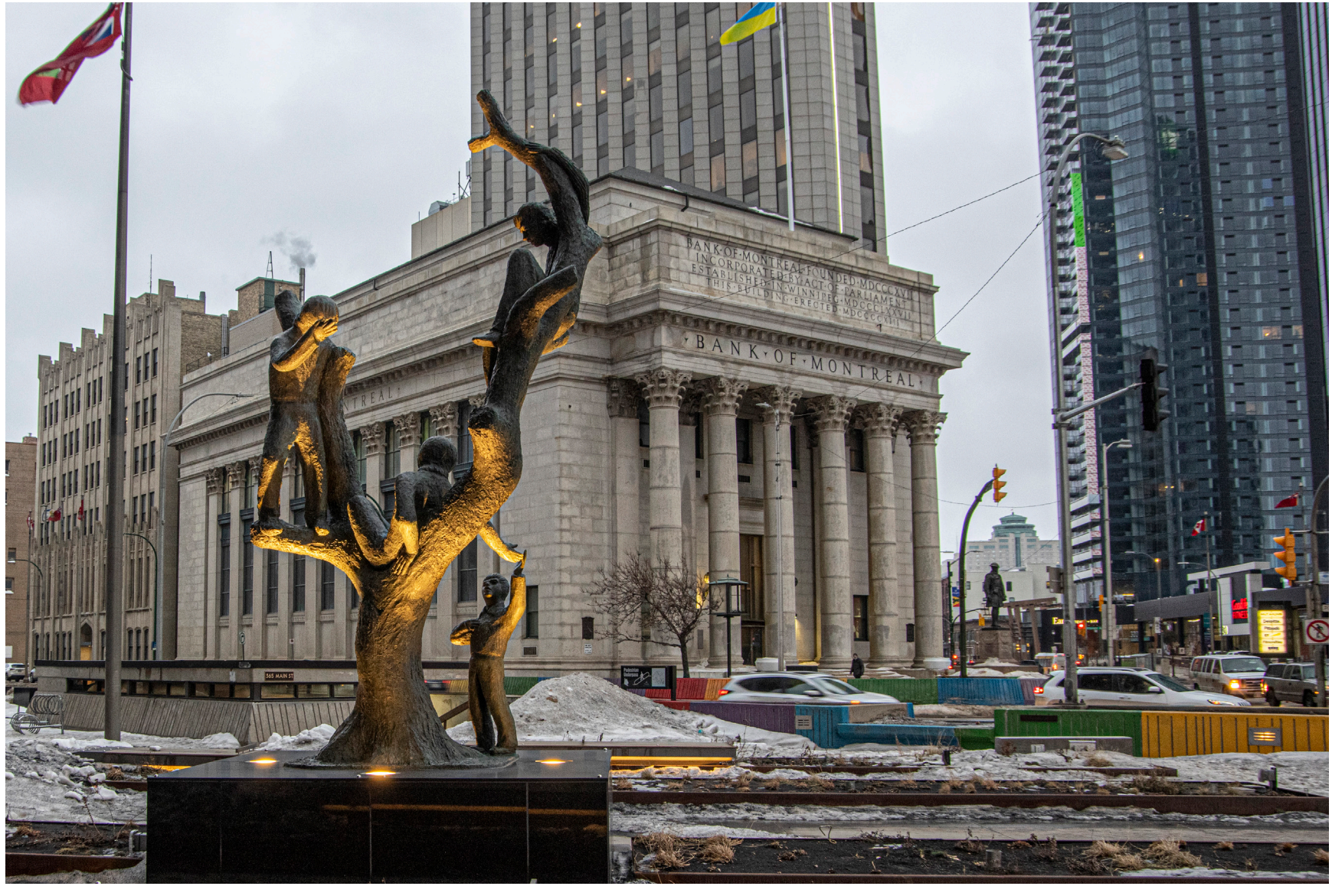

Figure 31. Photo by Bob Kurylko

8.0 Design Drivers

Based on the engagement process, City feedback and the design team's analysis, the following arose as key drivers shaping the recommended Vision:

- **Accessibility:** Accessibility issues were raised repeatedly as a critical shortcoming of Portage & Main, so providing more convenient, reliable and safe concourse access, as well as improved accessibility for people at street level is essential.
- **Transit Station:** Though the details are not known currently, Winnipeg Transit is committed to creating a major station at Portage & Main. The consultants team's initial design options showed a transit station as a placeholder with little emphasis on its impact, but later in the process it became clear that the positive transformative power of bringing thousands of additional people to the intersection each day needs to be fully embraced, despite the uncertainty around its configuration.
- **Safety and Activity:** The Vision should focus on safety and the comfort that comes from social activity and tie in with the programming and placemaking investments of the property owners at the four corners.
- **Roots:** To do justice to the importance of this intersection, the design should help people connect with the unique qualities of this place – highlighting the force of the wind, the height of the buildings, First Nations and Métis historic and present-day stories and contributions. The Vision should help people feel rooted to this place, strengthening the intersection's identity through storytelling, public art, plantings, lighting and distinctive details integrated into the streetscape.
- **Cohesion:** All four corners have either completed or are about to complete upgrades to the spaces around their buildings, heightening the importance of a shared design language within the public realm, adding unity and coherence to Portage & Main.
- **Clarity:** Wayfinding challenges were a common theme throughout the analysis and engagement stages of the project. The Vision should assist people to navigate to and through the concourse and orient themselves within the intersection and centre of the city.



Figure 32. View of urban design Vision looking northwest

1 A new transit station will be located at Portage & Main. The new station may include public washrooms and will have controlled pedestrian crossings to access the platform.*

*Note: The Rapid Transit Downtown Corridors Preliminary Design Study will involve sections of Portage & Main, and will determine the exact location for a new transit station at the intersection. The study, expected to begin in 2025, will include a public engagement component.

9.0 Design Strategies

The recommended revitalization measures for Portage & Main, referred to as the Vision, consists of a set of interrelated strategies that respond to the key design drivers.

9.1 Transit Integration

Of all the changes envisioned for Portage & Main, the proposed transit station will have the largest impact on the character and vitality of the intersection. Not only will it bring an estimated 10,000 riders to corner daily, it will also spread that animation throughout the day and evening (not just rush hour and lunch), and allow for reallocation of space in select areas of the right-of-way to the benefit of pedestrians. And bus riders, unlike drivers, will be transitioning to foot traffic at the intersection, which means more potential customers for businesses in the concourse and surrounding area.

Based on the anticipated timeframes for the forthcoming Rapid Transit Downtown Corridors design study and the concourse membrane replacement work, construction of the Portage & Main station and the membrane replacement work could overlap. For this reason, a placeholder for the future station figures prominently in the Vision renderings to remind us of its importance and to show how its design can complement other design features at the intersection.

For the Vision, it is assumed the station will be located on a widened median on Portage Avenue East, which Winnipeg Transit identified early in the project as a reasonable option (among several) for the future station. The Transit canopy design will be unique to Portage & Main, with an architectural expression similar to the proposed new concourse access pavilions. The platform could include self-cleaning public washrooms which are in high demand in the downtown, and depending on its location, could provide direct access to the concourse. In the location shown in the renderings, direct access is not a realistic option.

The renderings also show pedestrian access to the platform from both sides of Portage East. Like other transit stations in the Bus Rapid Transit system, there are ways to control crossing and ensure the safety of pedestrians accessing the station.

Though the final configuration will likely vary from what is illustrated, the Vision should influence the character and amenities considered in the detailed design for the station.

9.2 Circulation

Portage & Main will undergo significant changes in vehicular circulation as a result of the new transit station, wherever it is located. If the rapid transit planning process determines the station should be located on Main Street instead of the location shown in the renderings, Portage East remains an opportunity to increase usable public space through reducing lanes and eliminating the rarely used northbound right turn movement. This change is supported by the analysis in Dillon's 2017 Portage & Main Transportation Study (page 31): "Removal of the northbound right turn at the Portage/Main intersection is of clear benefit to all travel modes." So narrowing the roadway of Portage Avenue East is recommended whether the station occurs there or not.

In addition to Transit and regular traffic, the intersection must incorporate loading areas for delivery vehicles as well as tour and school buses visiting the Fairmont Hotel and the Heritage Centre. Again, the specific movements are subject to future study including technical analysis and public engagement.

There may be opportunities to expand the boulevards on west side of Main Street, depending on the ultimate routing for buses and trucks. Wherever possible, the minimum workable turning radius should be applied to corners to maximize room for pedestrians, snow storage, and roadside amenities

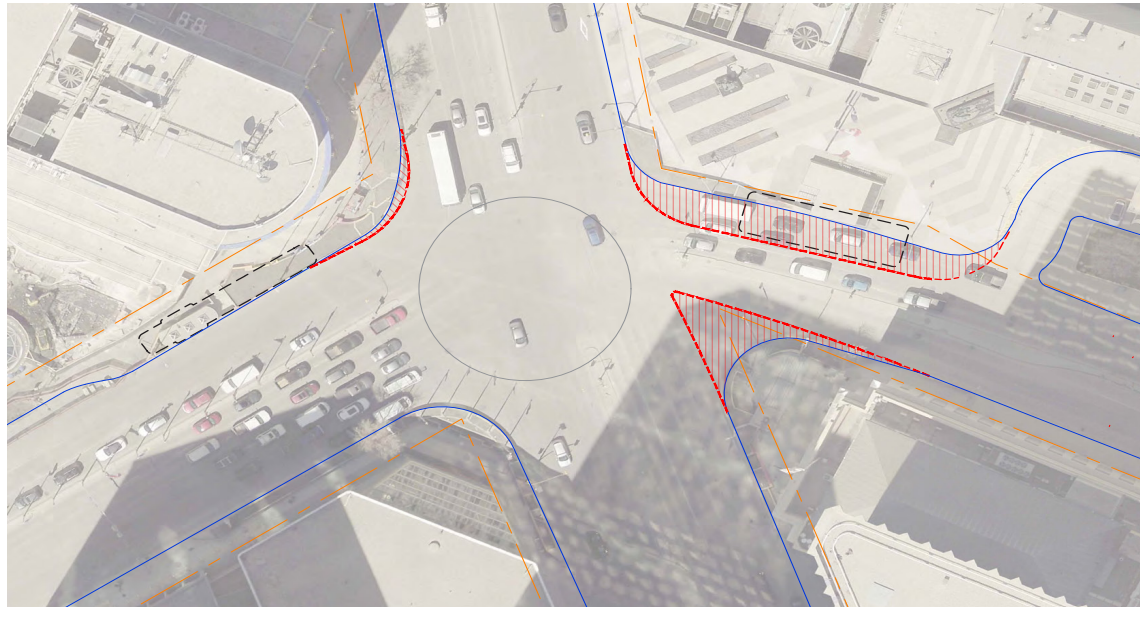

Figure 33. Plan view showing existing (blue) and potential (red) curb layout revisions. The orange lines are property limits. Considerable additional public amenity space can be gained. The black dashed lines indicate future concourse access pavilions.

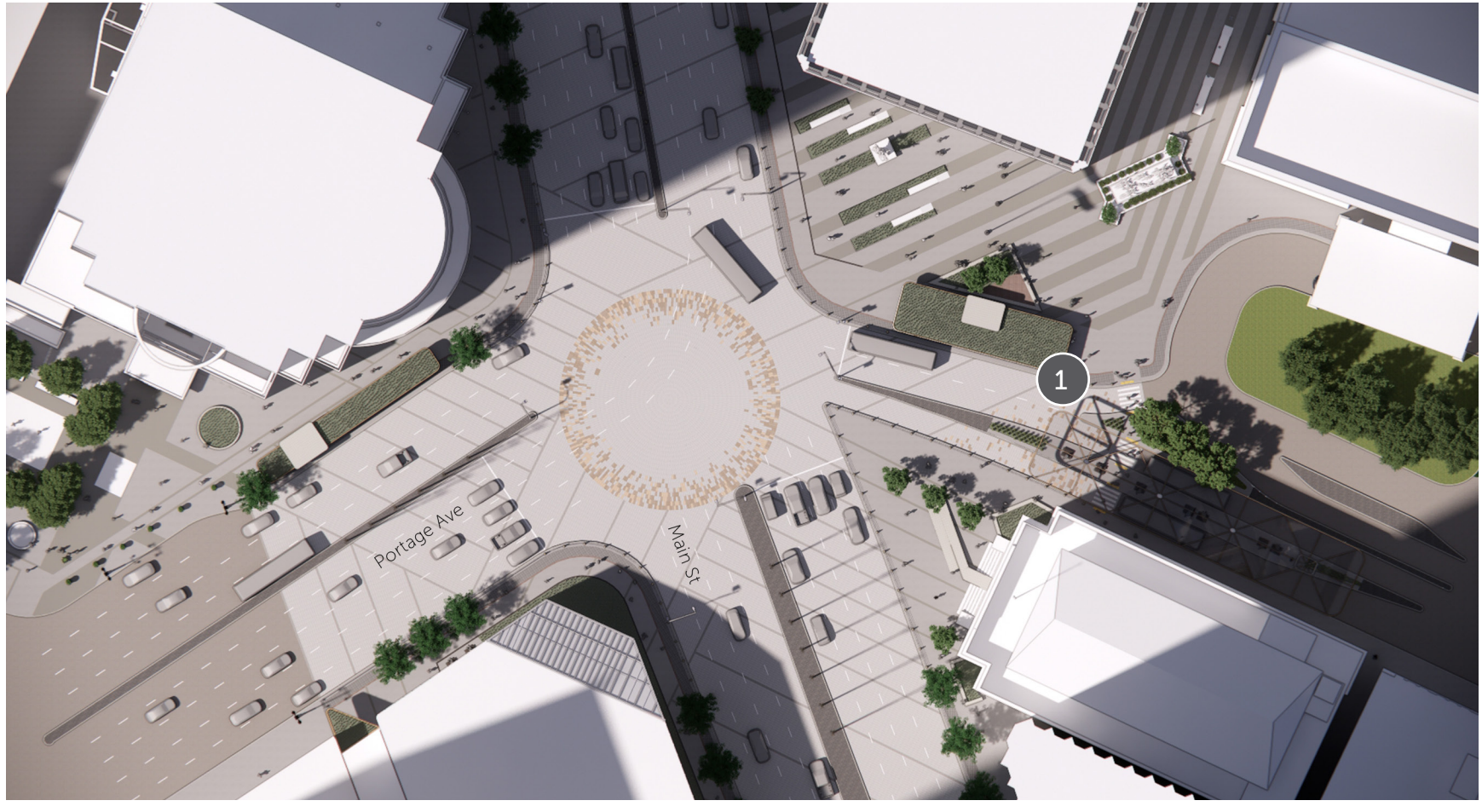

Figure 34. Plan view

1 Revised curb layout on Portage Avenue East, narrowing the roadway to provide additional public space on both sides of the road.



Figure 35. Perspective showing barrier design

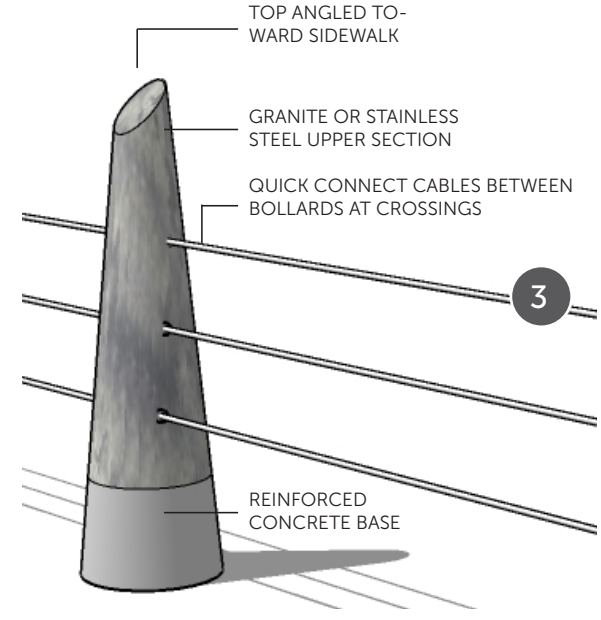

Figure 36. Diagram showing bollard design

1 New barrier designed for lightness, ease of opening, safety, and snow clearing operations.

2 Removal of existing concrete barricades frees up significant space for seating, planting, and sidewalks.

3 Barrier will have removable cables or rails that allow pedestrian access for events and celebrations. Barriers will generally follow existing barricade extents.

9.3 Adaptable Pedestrian Access

Barrier Design

The existing barricades present an aggressively fortified image at Portage & Main, obscuring views of the surrounding plaza spaces, sidewalks, and creating uninviting hidden corners at concourse entrances, as discussed in the CPTED section. They also occupy valuable space within the narrow public sidewalk zone, extending in some spots to 6.5 metres wide. Improving or eliminating the barricades was mentioned frequently throughout the engagement process. Concerns were also expressed that the barricade planters are contributing to water damage of their interior spaces, though this has not been verified through this study.

The Vision suggests removing the concrete barricades and replacing them with a line of conical bollards, infilled with cable or rigid rails (Figure 35 & 36). The extent of the new barrier has been minimized to focus on primary pedestrian crossing alignments, and places where the plazas with lower structural capacity need protection from vehicles.

The bollards are envisioned to be granite to complement the granite paving inlay. The granite could be flame finished so it is forgiving of minor nicks and damage and easy to powerwash clean. Stainless steel would also work if the granite proved cost prohibitive. Each bollard would be set on a low conical concrete base, which will offer some protection from equipment damage and facilitate setting the bollards plumb.

The conical shape of the bollards is both an identity element, unique to Portage & Main, and a means to reduce to damage during snow clearing, as the blades can run along the concrete base without coming into contact with the granite upper section. The tops are angled to hold short inscriptions, artwork, or other storytelling elements.

Note the proposed barrier design will not prevent climbing any more than the current barricades do; their purpose is to provide a visual cue that there is no at-grade crosswalk and to keep cars from entering the plaza spaces.

Special Events Operation

Whether cables or rigid rails, the pedestrian protection measures must be removable to allow free access to the intersection for special events. If cables are used, they would be fitted with commercial grade quick connectors that include a special tool to release sections of cable at every third bollard (approx. 10 m lengths). Single or multiple cable runs could be removed depending on the size of the event. The cables would have to be re-tensioned with wrenches when they are reconnected. To reduce labour with each opening, the number of cables could be reduced or the pattern revised (say to crossing diagonals).

If the intersection is opened more frequently than for a few events a year, the cable system may be too labour intensive, and rigid bars or other options should be considered. Rigid bars could similarly be attached with a fitting that uses a custom wrench or Allen key. For both cables and bars, some form of secure storage for the removed parts would be beneficial.

If in future the intersection is opened very frequently, such as evenings or weekends, then two other options could be considered:

- Cables or bars could be located in the medians only, between the multi-media lighting masts. This would deter crossings, but leave the boulevards open for easy access to the street.
- Install no cables or bars anywhere; rely on the bollards, signage, and enforcement to deter prohibited crossings.

These alternatives could be part of a later phase in the evolution of the intersection. However, both have pedestrian and traffic safety implications that are beyond the scope of this visioning study, so additional engineering analysis is required before implementing. In all cases, bollards and cables would need to consider cane-detectability in the detailed design stage.

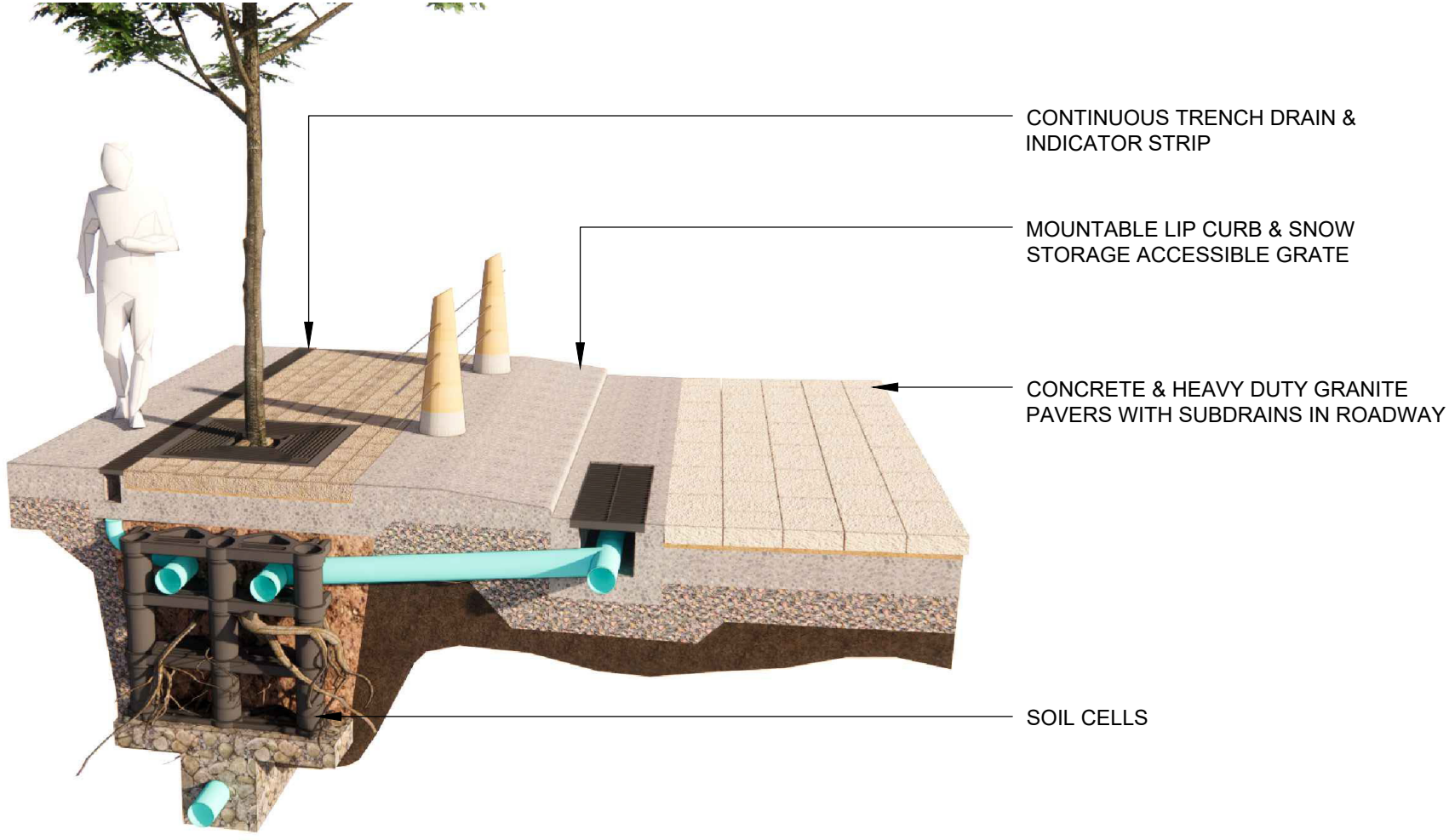

Figure 37. Section showing mountable lip curb and integrated green infrastructure

Roadway Elevation
Providing equitable access to the intersection for special events requires rethinking how people move from the sidewalks to the roadway. If, following the membrane replacement, the concrete barricades are replaced with removable barriers but the curbs remain, only able-bodied people will be able to stream directly onto the road surface during special events. People with mobility challenges must travel to the nearest intersection curb ramp to get onto the road.

The Vision recommends that selected sections of curb at the intersection be replaced with a broad concrete splash strip that slopes down 75mm to the roadway surface. At these locations, the road surface would also be elevated 75mm, creating a shallow, wheelchair-mountable gutter for drainage and a cue for pedestrians with low vision that they are leaving the boulevard. Beyond these sections, the elevated roadway would transition down to its existing elevation, with standard ±150mm curbs. Barrier cables or rain gardens may need to be placed at these transitions to prevent tripping hazards along the curb edge.

This form of curbing will allow for easy snow storage and removal and will add to the visual cohesion of the intersection. The elimination of the curbs means that the bollards will be more susceptible to snow plow and vehicular damage, so adequate setbacks, robust detailing and proper instruction for snow clearing crews will be important, as will ensuring their locations are not prone to vehicles deviating from the roadway.



Figure 38. Perspective looking east

1. New pavilion with access to the concourse via elevator and stairs. Other features include a green roof, artwork, storytelling, and crime prevention features through environmental design (CPTED).

2. All access points to the concourse will have similar architectural features to assist with wayfinding.

9.4 Concourse Access Pavilions

The concourse access points have been redesigned to address CPTED and accessibility issues, and to enhance the image and narrative for the intersection. The first new access point or pavilion is situated in the 'found' public space created by narrowing Portage Avenue East, adjacent to the existing access that is being decommissioned. It includes an elevator next to a single-flight staircase with no blind corners. Wraparound polycarbonate glazing for the stairs and elevators offer reassuring sightlines in and out of the pavilions and reduce the pavilion's visual weight (Figure 39).

The second pavilion replaces the existing access at 201 Portage. It also has both a staircase and elevator, in this case arranged in a single line to maximize sidewalk space next to it (Figure 38). And the final access point is a renovation, not a reconstruction. It is located at 210 Portage, in the narrow publicly-owned concourse access between Scotiabank and RBC and consists of a new canopy and refurbished skylights.

Rounded corners, a broad wood fascia and green roofs are defining features common to all concourse accesses, contributing warmth and colour to the streetscape. All will be well illuminated inside and out, serving as public beacons and adding some ambient light to the adjacent public spaces (Figure 43).

Because the transit station and Heritage Centre at 335 Main are not complete, and both may influence the final configuration of concourse access, it is recommended that the as part of next stage of design development, the concourse pavilions undergo a detailed Code review to ensure egress requirements are being met. It is also important that hours of operation are coordinated across all access points, and safe, accessible alternatives provided when the concourse is closed.

Other Accessibility Improvements

The Vision recommends upgrades to some of the streets and intersections surrounding Portage & Main that do not comply with the City's current accessibility standards, as these become required travel routes for people with disabilities after hours and when concourse elevators are not functioning. These include the sidewalks on Lombard Avenue and Portage Avenue East, and the intersection of Lombard and Rorie: all should be retrofitted to include new, smooth paving, indicator strips, shallower curb ramps and detectable warning tiles at a minimum.



Figure 39. Interior of concourse stairway

1. Stairs connect street level to concourse in a single, straight flight for improved visibility.
2. Pavilion and elevator has glass on all sides to allow views in and out.
3. From councourse level pedestrians can see the buildings surrounding the intersection and orient themselves.
4. Roof structure is inspired by Indigenous weaving patterns.
5. Walls and glass can be inscribed with storytelling, artwork, wayfinding patterns, inspired by the Bruce Head artwork in the concourse.
6. Bike ramp to aid in wheeling bicycles down to concourse storage lockers.

9.5 Cycling Infrastructure

Due to the high volume of traffic and nearby alternate routes, Portage & Main was not identified for any cycle infrastructure upgrades in the 2015 *Pedestrian and Cycling Strategies*. However, the proposed transit station will increase the need for safe access and secure storage options to serve cyclists who are shifting modes. Space on the median platform is limited, but some bicycle lockers could be situated at the ends. To store larger volumes of bicycles securely, the pavilion access points could include a bike ramp on the staircase to allow cyclists to access storage lockers in the concourse and/or surrounding commercial spaces, assuming the hours of operation align with the periods of demand for storage. Nearby parkade owners can also be encouraged to dedicate a few stalls to bike compounds. In both of these options, nominal parking charges would likely apply.



Figure 40. Perspective of wayfinding features looking east

1 Consistent material use for all public entries provides intuitive wayfinding.

2 A system of wayfinding icons and patterns will differentiate the four corners and help visitors navigate the concourse.



Design sketches by Brook McIlroy architect, Ryan Gorrie.

9.6 Wayfinding

Many stakeholders and members of the public reported they find Portage & Main confusing to navigate – the entrances are hard to identify, and the circular concourse is disorienting. Matters are worse for people with mobility challenges, whose routes from elevator to elevator are even more circuitous. The Vision recommends a wayfinding system that clearly directs visitors to their destination and supports the urban design goal to make the intersection more legible and accessible to all.

The principal features of the system are:

- Providing clear and consistent cues to identify access points: using common forms, materials, lighting and signage for each.
- Introducing a distinctive, elegant and attractive graphic system to differentiate the four corners and guide people from entrance point to destination.
- Including historically significant points of reference, such as the rivers, to supplement cardinal directions or street names and aid in orientation.

Methods such as the cardinal directions, the river with landmark buildings will help orient visitors. The graphic system should be unique to Portage & Main, referencing the historic First Nation and Métis trails that intersected at this site and gave birth to the intersection we know today. The trails can be represented by linear Indigenous patterns that flow uninterrupted from the pavilions through the concourse. Each corner would have its own distinct pattern or 'trail'.

Other elements of the wayfinding strategy may include wall-mounted signage, free-standing kiosks along the curb, and maps at public entries and pedestrian decision points that connect to the concourse. The next stage of design for the system should include a wayfinding specialist, graphic designer, and accessibility consultant, and must include Indigenous representation. To improve equity, the system the design team should consider incorporating international symbols, multiple languages, audio prompts, braille, and tactile lettering as well as support for phone-based accessibility aids.



Figure 41. Night time perspective looking east

1 Multi-media lights in the median, Wind turbines were added to address public comments about responding to wind and weather, and offset electrical costs.

9.7 Lighting Strategies

Following are the lighting strategies for Portage & Main, refer to Appendix 4 for full report:

Creation of a Lighting Hierarchy
To mitigate inconsistencies in lighting quality, it is recommended that a lighting hierarchy is developed that caters to the urban fabric; to uniquely visualize the skyline, important places, buildings, landmarks, artwork, and human-scale pedestrian lighting. Defining a lighting hierarchy and differentiating lighting applications based on the typology of streets, walkways, traffic intensity, gathering places, etc., would provide coherence, organization, improved wayfinding, orientation, and reduce energy consumption and light pollution.

Enhancing Character Areas and Human-scale Pedestrian Lighting
The lighting strategy considers identity, culture, human perception, environmental impact to craft a nocturnal identity unique to Portage & Main. The strategy creates visual links for pedestrians at night and encourages visitors to the intersection. Lighting represents significant potential for enhancing the character for the area and is a safety asset around circulation areas that are currently deemed dark and unsafe. Adaptive and evolving technology, such as the modular light masts, offer lighting and projection that can change depending on needs, activities, celebrations, or commemorations at the time.

Highlighting Heritage Elements and Architecture
With the complexity of lighting needs, there is a risk that the grand architecture of Portage & Main may suffer from light pollution, light spill, or lack of adequate lighting. Architectural lighting can be used to highlight distinctive elements of each building such as heritage facades, fenestration patterns, building entrances and notable changes in massing. Consideration should also be given to lighting at various elevations such as commercial windows at pedestrian level, and at building peaks to emphasize the towers that are a defining feature of the intersection.

Policy, Regulation & Engagement
There is a need for the development of a clear policy for long-term procurement, upgrading, and repair of new lighting systems. Incremental upgrades can lead to inconsistent colour temperatures and qualities, which can be avoided with careful planning and management to promote best lighting practices and protect investments.

Specific interventions at Portage & Main include the following measures:

- Street Lighting will rely on the existing tall heritage fixtures to continue illuminating the roadway and sidewalks. They are of an appropriate scale and are part of the streetscape of both Portage Avenue and Main Street. However, they require a consistent light type, temperature and spacing and need to be retrofitted to achieve this.
- Multi-media light masts in the median provide a sense of arrival lining the street. The lights highlight artful features such as the circular paving in the intersection and in combination with the projectors can be programmed to provide various lighting and video content customized for events. This will be particularly valuable in winter when paving patterns are less visible. Light masts are also modular and various components can be mixed, repaired, and upgraded with minimal cost.
- The pavilions' exterior and interior lighting is designed to create a safe, welcoming, human scale environment and not overshadow the dramatic architectural lighting of the surrounding buildings. Following are some of lighting aspects for the pavilions:
- Integration of downlights inside the pavilions
- Transparency
- Indirect lighting of woven wood beams on ceiling
- Handrail lighting
- Special architectural lighting to be used to highlight the grass roofs.
- Lighting on the pavilions and the wayfinding elements will support the pedestrian linkages at night.
- In general, lighting will be designed to obscure the source, reducing the risk of vandalism and glare.
- Where possible, fixtures and luminaires will be selected and placed to comply with dark sky guidelines to reduce light pollution.
- Trees along pedestrian sidewalks will be illuminated.
- Façade lighting recommended on all buildings as described above.

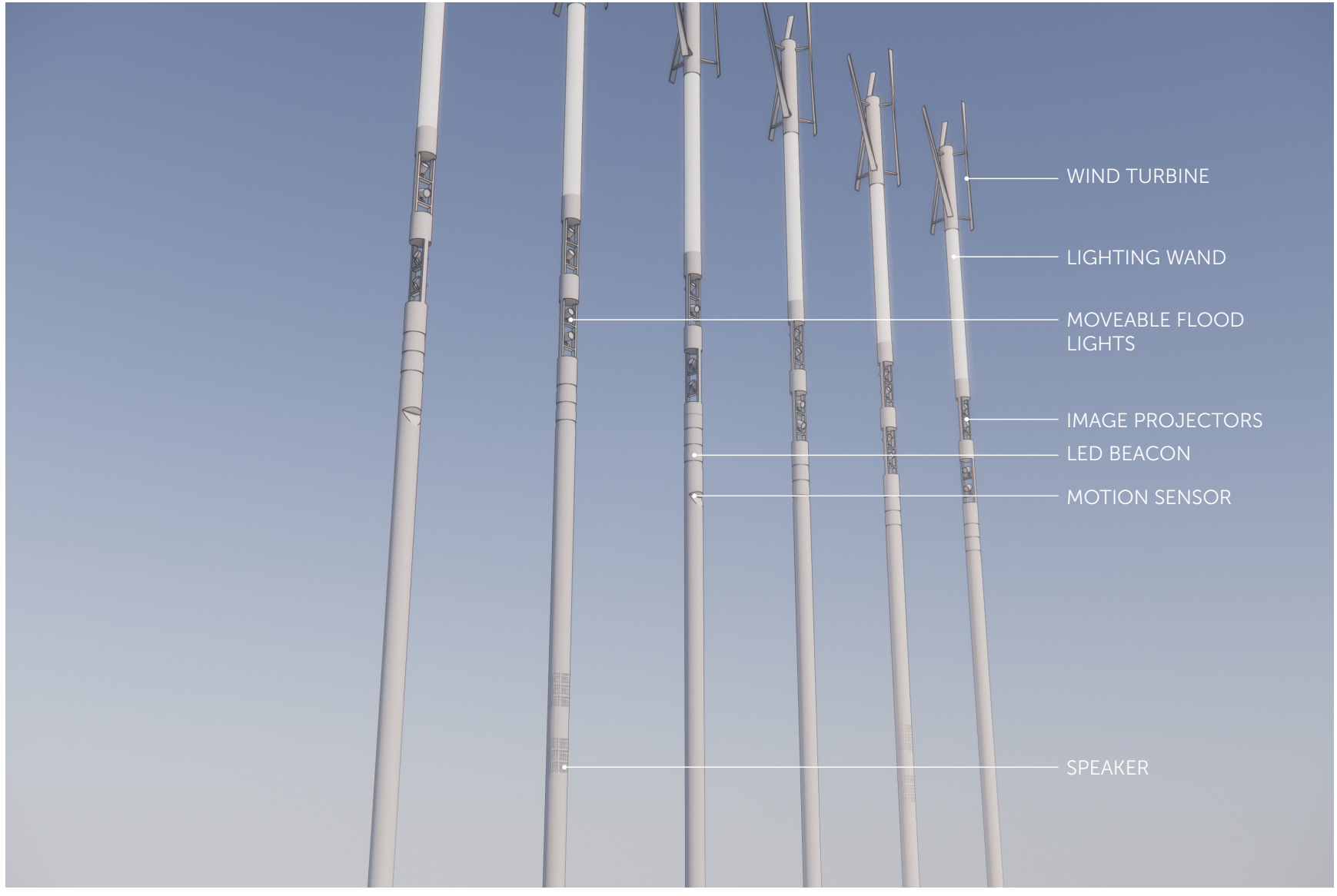

Figure 42. Multi-media lighting and wind turbine components



Figure 43. Winter night time perspective of concourse exterior



Figure 44. Street level perspective looking south

1. Additional tree plantings on the boulevards will be part of an integrated subsurface bioretention system using stormwater cells along with soil cells.

2. Integrated stormwater trench and storage cells will irrigate the trees and reduce the load on drainage infrastructure.

9.8 Green Infrastructure

Public and stakeholder support for greening Portage & Main was consistently high through all phases of engagement. The Vision takes this a step further, promoting strategies to incorporate 'green infrastructure' into the streetscape. Green infrastructure is a set of design technologies that use natural systems to solve urban and climatic problems. The growing conditions and limits on space at Portage & Main are not very conducive to green infrastructure solutions, so they are applied strategically, at locations where they will have the best opportunity for success.

Street trees are sparingly distributed along the sidewalk edge, only where there is adequate light and space. In all cases, street trees would be planted using a soil cell system to provide adequate soil volume for these few trees to attain a size appropriate to the scale and height of the buildings surrounding the intersection – approximately 30 - 35 cubic metres per tree. The soil cells would be linked in a continuous gallery that also serves as a bioretention reservoir, irrigating the trees and treating and slowing the flow of stormwater before it enters the land drainage sewer. This water would be collected from the roadway via curb inlets and from the sidewalks by a trench drain that can also serve as an indicator strip to mark the edge of the accessible path of travel for people with low vision.

The second form of green infrastructure recommended for Portage & Main is green roofs. Beyond their value in enhancing the image of the intersection, green roofs on the proposed concourse access pavilions take advantage of 'found space', and are protected from salt spray, foot traffic, and casual vandalism. They will also significantly prolong the lifespan of the pavilion roofing membrane and serve a similar stormwater management function as the street tree bioretention system.

Having these sophisticated systems prominently displayed in a landmark public space reflects well on the civic administration's forethought and environmental sensibilities.



Figure 45. Pavilion pattern on glass and lighting



Figure 46. Bruce Head's concrete form concourse wall



Figure 47. Wayfinding imagery

9.9 Public Art Integration

The Vision proposes a public art program for the intersection intended to enliven and deepen residents', workers', and visitors' connection to the intersection and its stories. The program would be developed in collaboration with the Winnipeg Arts Council and Indigenous organizations as part of the next phase of design, similar to the public art programs included in other major infrastructure projects like the South Winnipeg Transit Corridor and the East Exchange District renewal.

One essential component of the art program is the Paving Circle, a large-scale graphic inscribed in the centre of the intersection, representing 'Wahkohtowin': the tradition of cultural exchange, hospitality and coming together that was central to the history of this intersection and the birth of Winnipeg. The Circle also recalls the concourse 'circus' below, and marks Portage & Main as the heart of Downtown.

This major public art piece would be commissioned by the Winnipeg Arts Council, inviting teams that include First Nations and/or Métis artists. The successful team would include technical experts to address the City's requirements for traffic operations, safety, durability, and maintenance. As is typical with Arts Council projects, a maintenance fund would be included in the budget for the work.

As a placeholder, renderings of the Kinship Circle show a variegated ring of Manitoba granite pavers, inspired by an Indigenous weaving pattern created by Nadia Myre of the Kitigan Zibi Anishinaabeg First Nation. See the section on Materials below for further discussion. In winter, projectors on the light masts can cast a similar graphic onto the road surface. The timing, intensity, and patterning will be reviewed and approved by Public Works to ensure this does not compromise traffic safety.

Other public art opportunities include:

- Bollard inscriptions
- 'Woven' pavilion roof structural system
- Pavilion patterns on glass and concrete surfaces
- Wayfinding system at street level and through the concourse
- Temporary vinyl graphics in windows of surrounding buildings
- Light shows/projections using the light masts
- Pop-up installations throughout the surrounding public spaces

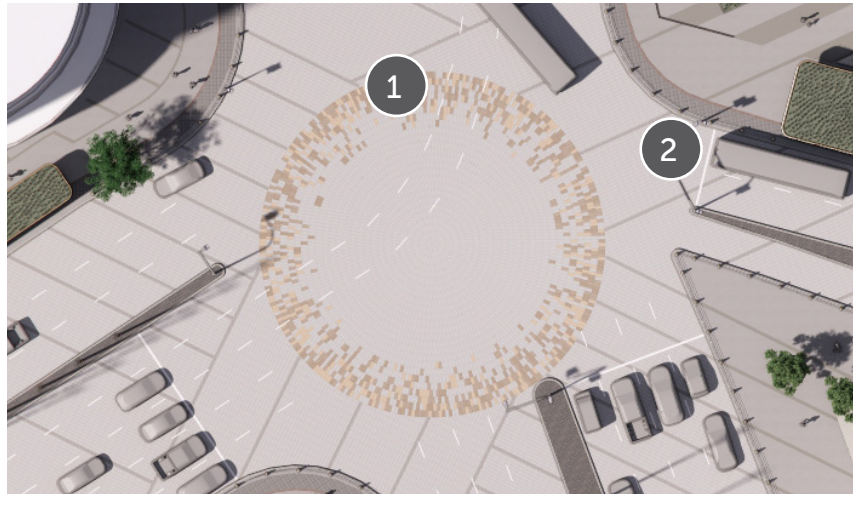

Figure 48. Paving Circle

1 Circular paving pattern/inscription recalls the concourse 'circus' and identifies this as the key crossroads in the Downtown. It, and other art opportunities at the intersection, will be the subject of a public art commission by a team of Indigenous and Métis artists, in the spirit of cultural exchange that was so prevalent in the history of this intersection.

2 Diagonal banding on sidewalk and roadway relates to features in the plazas and architecture at the four corners.

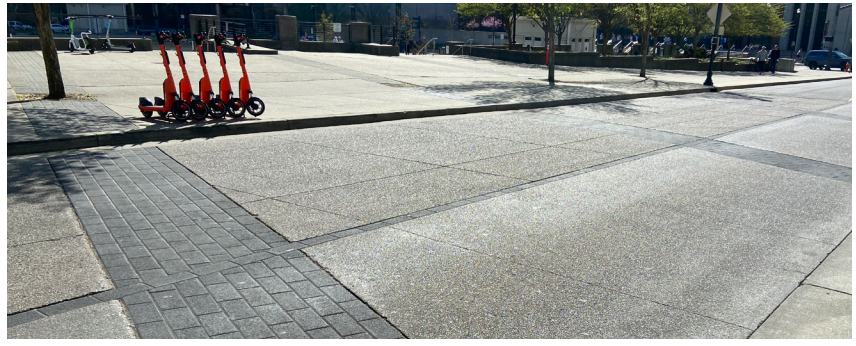

Figure 49. Granite unit paver inlay in driving surface



Figure 50. Stainless steel railings in Steinkopf Gardens by HTFC

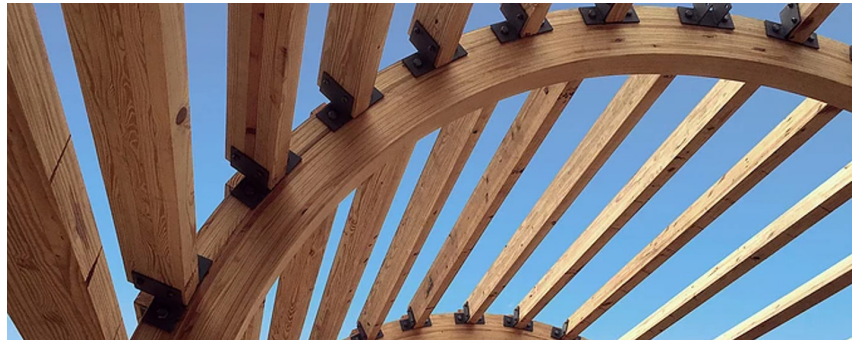

Figure 51. Glulam wooden beams. Photo: Beautex Wood



Figure 52. Bruce Head concrete work in concourse

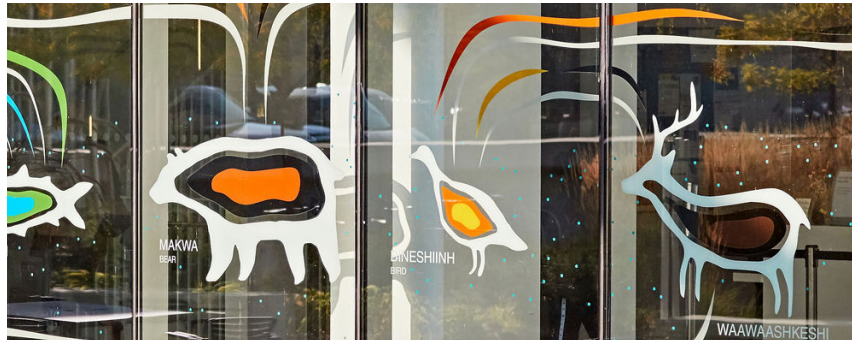

Figure 53. Glass glazing at Humber College by Brook McIlroy



Figure 54. Tall grass prairie

9.10 Materials & Furnishings

Materials Palette

The materials recommended for the revitalization were selected to complement the varied architecture and offer an appropriate level of distinction for the intersection. This limited palette was applied in a consistent manner at the four corners and within the right-of-way to create the sense of a unified, cohesive and legible public space. The key materials are:

- Granite: Locally-sourced granites are proposed for paving strips, the Kinship Circle public art installation, and bollard uppers. Granite pavers have been used in busy roadways all over North America, and their richness, hardness, and colour-fastness would substantially elevate the quality of the materials palette of the intersection.
- Wood: Glulam wooden fascias and 'woven' timber beams on pavilions and transit station canopy will create a warm, distinctive image and useful wayfinding cue.
- Glass: Based on current incidents at the intersection, the proposed glazing on the pavilions could be a regular target for vandalism. High-strength glass such as RockGlass is recommended to reduce repairs and hazards associated with breakage. Glazing on pavilions will extend over the glulam fascia to protect it from UV damage.
- Stainless Steel: Durable, strong, salt-resistant and easy to clean, stainless steel is proposed for hand rails, pedestrian control cables/rails, and for the light masts, which are likely too tall to construct with aluminum.
- Concrete: Used for pavilion walls and columns, walkways, curbs, and bollard bases. Both vertical and horizontal surfaces may incorporate sandblasted or cast-in patterns.
- Tall Grass Prairie: Portage & Main could benefit from an alternative solution to plantings that are easy to see through and over, low maintenance and aesthetically pleasing. Well-maintained areas express a sense of ownership and people tend to protect and area they feel belongs to them. The new Vision proposes native grasses and other vegetation to enhance the public realm, which can also help to deter graffiti and soften the exterior of the walls. This plant community is hardy and drought tolerant and recalls the original landscape prior to urbanization. Tall grasses also respond beautifully to the wind.

Alternate Materials

If the cost or technical challenges of incorporating granite pavers in the roadway prove unworkable, other options may include precast concrete pavers, surface applications of thermoplastic routed into the asphalt (which would require regular re-application) sandblasted images, formed grooves with epoxy infill, or ductile iron (as used in manhole covers). For all materials, attention to drainage, lane markings, repairability, and resetting to accommodated future asphalt overlays and 20 year re-paving cycle must be incorporated into the design.

Furnishings

A few potential locations for seating and perching are identified in the renderings, but the Vision recognizes that most of the passive seating and programming will occur on the surrounding private plaza spaces. As indicated in the analysis, the narrow, linear public walkways at the four corners are best suited for the passage of pedestrians to and from these plazas and concourse/building entrances. Catalogue furnishings with stainless steel frames and thermally-treated wood seating slats are preferred for their durability and ease of repair and replacement. BIZ and City-approved waste receptacles should be placed in convenient locations at each corner, in conjunction with seating but not immediately adjacent to it to limit odors and insect nuisance.



Figure 55. Photo by Bob Kurylko

Coordination with Plaza Development
The design team applauds the building owners for their investment in the public realm and welcomes the activity these investments will generate. Fortunately, the palette of materials and design styles of the completed plazas are similar: both are patterned with medium grey and uncoloured concrete paving and incorporate raised planting beds edged with custom hardwood seating. This simplifies the task of knitting the revitalized sidewalk spaces and the plazas into a seamless whole. The Vision proposes a pattern of regularly spaced granite paving bands extend perpendicular to the plazas and buildings into the driving surface, similar to Figure 49, creating another form of weaving that also gives drivers a gentle tactile reminder of the intersection's unique status. As indicated in the Materials Palette section, the site furnishings lining the revitalized sidewalks will use materials complementary to those in the plazas.

The Manitoba Métis Federation's National Heritage centre plaza is still in development. The renderings incorporate a preliminary plaza design concept provided by the Heritage Centre design team. It has not been vetted through the City's Urban Design Advisory Committee, and depending on the timing of construction, it may require an interim version to serve the Heritage Centre's access needs prior to membrane replacement and construction of the transit station.

9.11 Design Responses to Indigenous Themes

There are many opportunities to incorporate Indigenous stories past and present into the design and programming of the site in a manner that acknowledges and celebrates this rich presence. While it may not be possible to tell the entirety of the long and complex history of the site, we can pay tribute to key events and peoples that contributed to the establishment of this place.

A Place of Gathering
The gathering tradition is reflected in the Circle inscription in the roadway, and measures to accommodate events, celebrations and ceremonies that occupy the entire intersection. Every closure is a symbolic shift in power from cars to people. It is also supported by improvements to the public realm that encourage lingering and social interaction like seating, shelter, and plantings, equity-based placemaking, and reassigning space dedicated to cars & barricades to pedestrians.

Wahkohtowin
This concept of interconnectedness has been integral to much of the design process, encouraging connection between people, nature and the elements. Materials have been chosen for the site that are flexible for cultural programming, with spaces and surfaces that are intended for the sharing of stories. The palette of native plantings and grasses on each corner reflects the history of the Plains and celebrates our connection to nature.

Indigenous Storytelling
The Vision celebrates Indigenous stories of conflict and cooperation, sacrifices and contributions by weaving meaningful imagery and symbolism throughout the design (see Public Art section), and dedicating areas and spaces that can be used for the telling of stories, past and present (see Equity-based Placemaking).



Figure 56. Pride celebration pavement markings, Tallaght, Ireland



Figure 57. John Hirsch Place Woonerf by HTFC



Figure 58. Pop-up Food Vendors. Photo: Ferla Bikes



Figure 59. Indigenous Arts Programming. Photo: Vancouver Mural Festival

9.12 Equity-based Placemaking Measures

The pandemic brought attention to the injustices that surround us and that many of us have been complicit in perpetuating, particularly toward Indigenous people, minorities, people with mobility challenges and people living in poverty. Through design, the Vision speaks to these issues and seeks to better empower those that have often been disenfranchised in our city.

Equitable placemaking, like reconciliation, is a process that starts with a mind-set that recognizes systemic injustices and is open to doing things differently. It requires an understanding that urban space means different things to different people, and an acceptance of these differences – some of which may be messy.

Some hallmarks of equitable public space management, applicable to Portage & Main are:

- Ensuring access for all, regardless of age, ability, ethnicity/national origin, gender identity or expression, race, culture, class, housed/unhoused, religion/spiritual practices;
- Co-existing in space, which means recognizing and planning for shared space and participation of individuals experiencing homelessness;
- Honoring the history and people of a place by accommodating gatherings & ceremonies, using design to share teachings & culture, and celebrating or show support for a movement (e.g., flying a rainbow flag during Pride Week);
- Flexible programming that opens the spaces up to a variety of demographics;
- Conducting respectful interactions and fostering partnerships with agencies and trained specialists such as the Downtown Community Safety Partnership that can deescalate conflicts and help build bridges between groups using the public space.

These are primarily operational measures. Physical measures in the Vision that improve equity include:

- Connections to public transportation
- Urban design that is open, comfortable, and welcoming
- Gender neutral washrooms
- Public seating
- Trash bins that facilitate access to refundable containers
- Equitable wayfinding (signs with language translations, tactile icons, easy to read font)
- Greenspaces, which improve mental & physical wellbeing and should be available for everyone to enjoy



Figure 60. Alleyways Market in the Exchange. Photo: National Trust for Canada

9.13 Programming

Enhanced programming was one of the most broadly supported improvements to Portage & Main among all groups contacted. There was a clear and widespread appetite for more reasons to visit and linger at the intersection. As indicated in the CPTED analysis, flexible, community-oriented programming is a powerful means to promote a sense of belonging and shared ownership within a public space.

Any new programming can build on the activities already occurring in the plaza spaces at 201 Portage and the Richardson Building, and activities that are envisioned for the new MMF Heritage Centre when complete. Much of this programming is summer-oriented; one of the challenges will be to extend the vibrancy through all four seasons. Seasonal lighting and decorations, fire pits, recorded music, and snow sculptures can enliven the winter months, and spring and fall can look to participation of the BIZ and downtown arts and cultural groups to include the plazas in their community outreach and performance calendar.

When traffic volumes are lower, such as summer Sunday mornings, the intersection might be closed to traffic and host a specialty markets or events with offerings unlike other markets around downtown – an art market, vintage car show, theatre in the round, etc.

9.14 Participation of Building Owners

The Vision for Portage & Main will be more successful with continued participation from private property owners. The building frontages and plazas that surround this intersection are part of the public realm and have a considerable influence on its look, feel and vibrancy. Following are some measures the owners could undertake further contribute to the success of the intersection:

- Façade lighting highlighting specific architectural features, emphasizing the tops of their buildings (see Appendix 5)
- Include interpretive elements on main floor glazing and/or other interventions to animate the public sidewalk.
- Add green spaces to offset the expanses of concrete.
- Enhance and diversify programming on the plaza spaces.

As the intersection becomes a more active, building owners may be motivated to replace office spaces and blank walls on the ground floor with retail/commercial tenants fronting onto the streets and plazas, and provide more direct access into buildings from the corners.



Figure 61. Construction of the Portage & Main underground, 1977. Photo: University of Winnipeg Archives

9.15 Membrane Replacement Coordination

Though the membrane replacement report is a stand-alone component of this study, some coordination between the surface works and the subsurface works is required. The design and installation of pile foundations, demolition of barricade planters, removal or installation of subsurface structures, and any irrigation and wiring for power and controls will all have to be carefully coordinated with the work on the concourse membrane. As well, any new planting beds and soil cells will need to incorporate carefully detailed subdrainage and root containment to protect the concourse and surrounding underground spaces from damage.

Potential Alternatives to Full Membrane Replacement
The RFP requested exploration of alternatives to full membrane replacement for the concourse. The design team considered the following:

- Negative side (interior) membrane: Stantec assessed the option of placing a crystalline coating on interior wall surfaces in the concourse. In this option, the roof membrane would still be on the exterior surface, but the extent of excavation laterally to access the exterior walls would be reduced considerably. Stantec's Membrane Replacement Report (Appendix 1) indicates that due to a number of factors, like discontinuity of the membrane, potential damage to the Bruce Head artwork, and typically limited performance lifecycle, this option should only be considered for short-term remedial repairs.

- Permanent shoring 'shell': The design team raised the concept of building permanent shoring structures to create an access chamber around the exterior of the concourse, facilitating inspections, lowering repair costs and disruption, and reducing the hydrostatic pressure on the walls and roof. Stantec did not perform detailed analysis of this option because it was felt the any savings would be countered by the additional costs to build (and maintain) the permanent walls, and the vertical clearances may not be adequate to prevent excavation for the roof in future.

- 'Park Over Cars' and overhead crossing options: Any of the early revitalization concepts where vehicular traffic is channeled below grade, or pedestrians moved to overhead structures (e.g., the Sky Garden) would provide alternative pedestrian crossing opportunities, and therefore could allow for the closure of the concourse. This will likely meet with resistance from the building owners, who are currently investing in upgrades and see substantial benefit in keeping the concourse open, such as continuity with the skywalk system and their malls, weather protection, and admittedly imperfect accessibility. In addition, these revitalization options had other feasibility issues that demoted them to a lower ranking: Park Over Cars ran into challenges with utilities, transit Station integration, cost, clearances and roadway grades; and the overhead options were dismissed due to shadows, negative impacts on street life, safety & accessibility concerns, and cost.

- At-grade crossings: Though the plebiscite decision of 2018 stands and has been respected by the recommended Vision, it is worth noting that the lowest cost alternative to full membrane replacement is to open the intersection to pedestrian crossings and close the concourse. For either this alternative, or 'Park Over Cars', a full analysis of the Code implications of this change would be required, to ensure the remaining underground malls meet the requirements for access and egress.

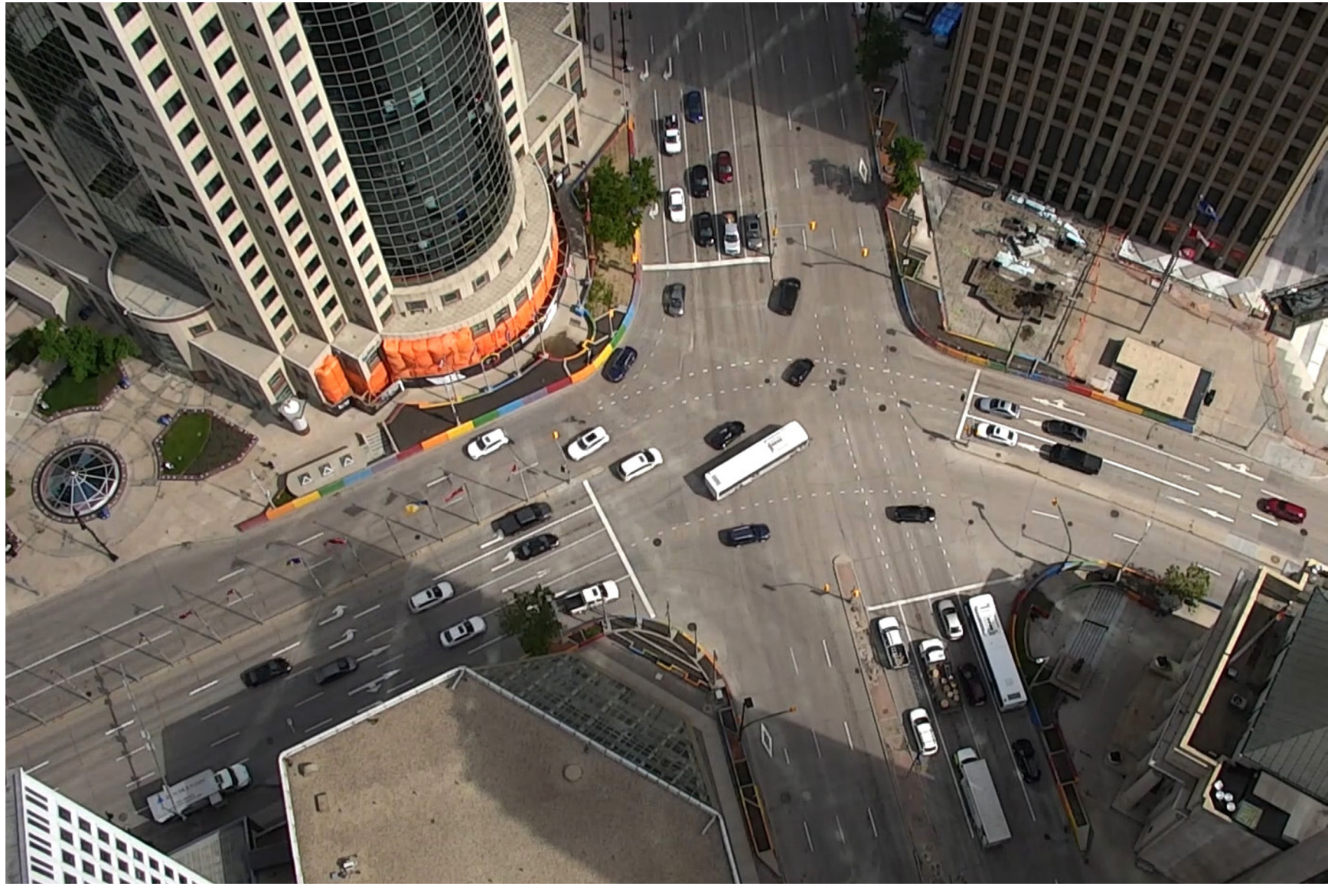

Figure 62. Photo by HTFC

9.16 Annual Maintenance & Life-Cycle Renewal

Adequate funding for ongoing maintenance and renewal of any infrastructure investment is required to ensure the desired benefits and levels of service are achieved over the life of the asset. Given historic maintenance funding challenges, there is risk that investments in pavement works, public realm improvements, street trees and other amenities could deteriorate over time, and trigger the cycle of adverse effects predicted by the 'broken window theory'.

There are a number of potential strategies and approaches that the City of Winnipeg could consider to fund the ongoing operations, maintenance and renewal of Portage and Main infrastructure including:

Continued and New Partnerships

Partnerships, such as those with the Downtown Community Safety Partnership, the Downtown BIZ and others can continue to contribute to the creation of a healthy, safe and connected downtown, non-emergency safety and outreach response, and support litter and graffiti removal, beautification and programming of downtown spaces. In addition, there may be opportunities for strategic partnerships with the major businesses and property owners at Portage and Main to support enhanced maintenance, beautification, and programming.

Dedicated Tax Revenue

Consideration could be given to dedicating a portion of incremental City and Provincial property tax revenue realized from Portage and Main properties after the redevelopment investments, to support a reserve or endowment type fund for ongoing maintenance and renewal. This may be in the form of annual allocations and/or larger lump sum allocations that enable creation of an endowment fund, whereby annual accrued interest supports maintenance and renewal requirements.

Local and Regional Street Reserves

In July 2023, Council approved a long -term funding strategy identifying dedicated property tax increases for the Local and Regional Streets Reserves to support multimodal roadway and bridge infrastructure renewal, as well as expanded funding for road safety, pedestrian and cycling program and tree replacement and preservation on renewal projects. The intent is that this ongoing funding strategy will enable the required investments to achieve and sustain desired levels of service. Consideration could be given to allocate funding from this source to finance required life cycle renewal of pavement, public realm amenities and streets trees at Portage and Main to ensure that desired levels of service are maintained.

10.0 Construction Costs & Fees

10.1 Class ‘4’ Cost Estimate

Estimated construction costs were prepared by Hanscomb Quantity Surveyors, Stantec Engineering and HTFC Planning & Design to a Class ‘4’ cost classification based on the consultants’ conceptual work on the design vision, underground services, concourse waterproofing system replacement and supplemented by existing conditions documentation provided by the City of Winnipeg.

Prices are defined and classified based on the stage of a project’s development and the level of information available at the time of estimate. This Class ‘4’ Estimate has an expected degree of accuracy of -30% to +60%, in accordance with the City of Winnipeg Cost Estimate Classification System. The extent of work included in the costs varies by type of work, as depicted in Figure 63: watermains and sewers, membrane replacement, and surface works all have different limits of construction. Based on those limits, a summary of construction costs is provided in Figure 64 below. Detailed breakdowns for each type of work are provided in the appendices as listed in the figure.

The Cost Estimate does not include the transit Station and related elements such as crosswalks, furnishings, signage, and structures. This will be part of The Rapid Transit Downtown Corridors project which will examine the entire downtown, including siting a new station at Portage & Main. The study is expected to begin in 2025.

Other exclusions are included after the Estimate Summary.

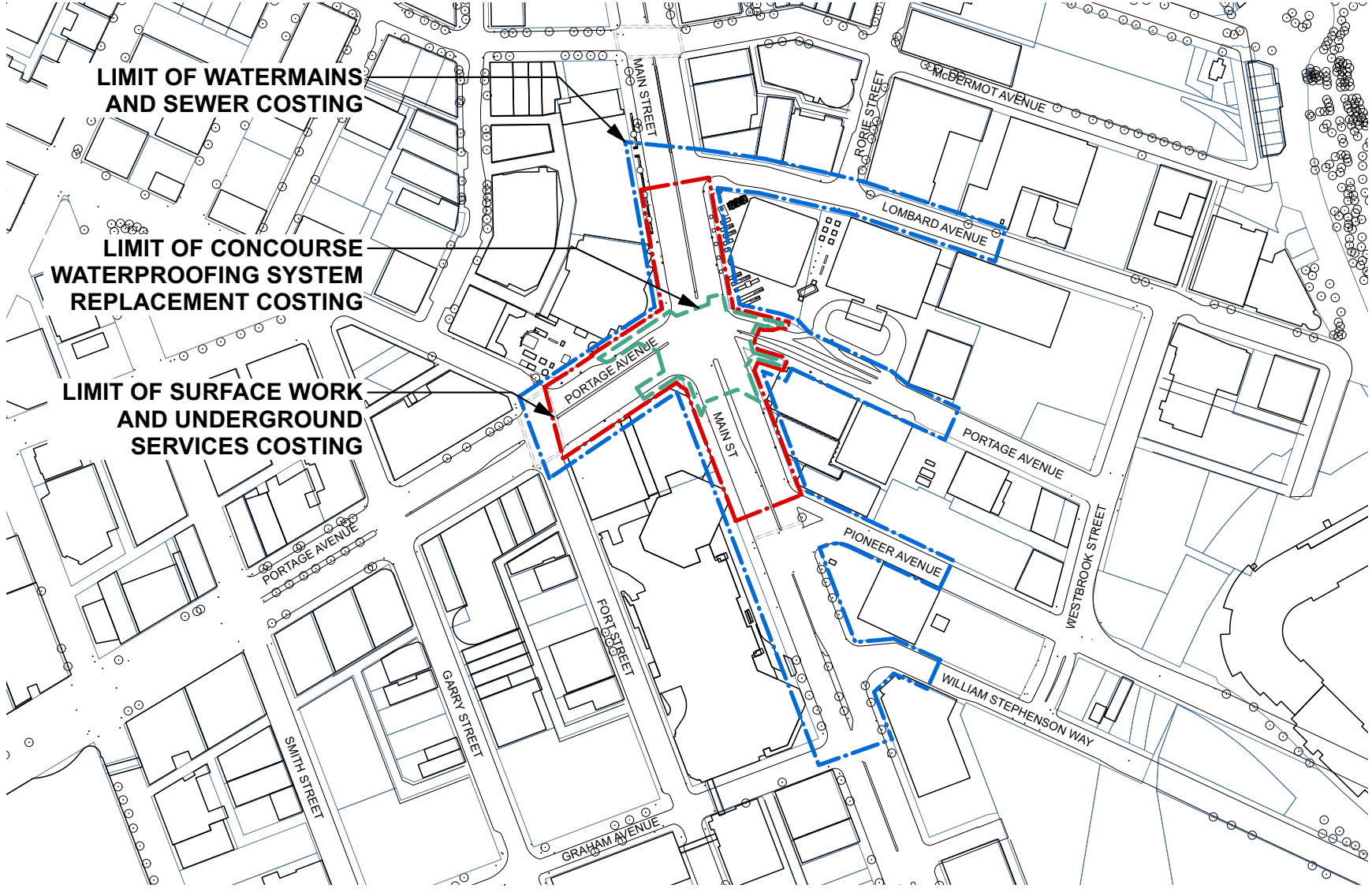

Figure 63. Project costing limits for water mains & sewer (blue), concourse waterproofing system replacement (green), and surface work & underground services costing (red)

Portage & Main Revitalization - Class 4 Construction Cost Estimate Summary

ITEM	DESCRIPTION	DETAIL	ROUNDED ESTIMATE
	WATERMAINS & SEWERS (see blue area on map)	See:	
1	Demolition and Installation of Watermains and Sewers	Appendix 1-B	$7,155,000
2	10,000 sq m of surface works replacement includes: surface works, subgrade and grade work, sidewalks, drainage works, miscellaneous works	Appendix 1-B	$5,450,000
			$12,605,000
	TRAFFIC MANAGEMENT PLAN (extents are downtown)		
3	Infrastructure Improvements (including shallow utility relocation - Shaw, Bell, Hydro, Telecom, etc.)	Appendix 1-B	$8,720,000
4	Temporary Structures to Support Construction	Appendix 1-B	$2,180,000
5	Installation and Maintenance of Traffic Control Devices	Appendix 1-B	$1,090,000
			$11,990,000
	CONCOURSE WATERPROOFING SYSTEM REPLACEMENT (see green area on map)		
6	Demolition of surface works, existing membrane and installation of new concourse waterproofing	Appendix 1-C	
			$28,912,000
	SURFACE WORKS (see red area on map)		
7	Restored & accent paving, green infrastructure, barriers, wayfinding, special lighting & furnishings, surface demolition outside of Item 1 & 6 above	Appendix 8	$10,744,000
8	8,000 sq m of drainage, subgrade, street lights, signage	Appendix 1-B	$2,180,000
			$12,924,000
	CONCOURSE ACCESS PAVILIONS (see red area on map)		
9	Includes two new access pavilions and one new access canopy		
			$6,346,000
	TOTAL		**$72,777,000**

Figure 64. Construction Cost Estimate Summary. References to "map" are referring to Figure 63. Refer to the appendices listed for additional detail.

Notes:

- Prices include Design & Engineering Contingency of 25-30%
- It is assumed underground structures beyond the limits of surface works will use directional boring where feasible to lower remediation/ restoration cost.
- Professional fees are not included in the construction estimates. They are presented separately below.

Exclusions:

This Class '4' Estimate does not provide for the following:

- GST or PST
- Construction Contingency
- Cost of contaminated soil removal
- Escalation Contingency
- Cost of hazardous material (e.g., asbestos, lead, PCB, etc.) removal
- Equipment beyond that identified in this estimate
- Financing costs
- Winter Construction (Concrete foundation and masonry heating & hoarding)
- Water & sewer utilities renewal cost
- Traffic management cost
- Premiums associated with Public-Private Partnership procurement model
- Trade tariffs
- Third party commissioning costs
- Cash allowances
- Overtime premiums for work done outside normal working hours
- Phased construction premium
- Soft Costs:
    - Building permit
    - Development charges
    - Easement costs
    - Fundraising costs
    - Land acquisition costs and impost charges
    - Legal fees and expenses
    - Owner's staff and associated management
    - Preventative maintenance contracts
    - Professional fees and expenses
    - Relocation of existing facilities, including furniture and equipment
    - Right-of-way charges
    - Unexpected labour unavailability and productivity disruptions
    - Supply chain disruptions

Escalation Contingency

Considering current market volatility, and construction escalation tracking at approximately 1.5% per month at the time of writing, it is recommended that the project carry an escalation contingency from July 2023 to the anticipated date of Tender Close.

10.2 Consulting Fees to Preliminary Design Stage

The City of Winnipeg's expectations for Preliminary Design Services include the necessary investigations, surveys, testing, engagement, coordination, and design work to achieve a level of certainty around function and cost that allows the project to proceed to detailed design and construction. This typically culminates in a Preliminary Design Report and Class 3 cost estimate (accuracy –20% to +30%). For the Portage & Main membrane replacement and revitalization work, it is anticipated the following services will be required to complete Preliminary Design:

- Landscape Architecture
- Architecture
- Public Engagement Specialist
- Transportation & Civil Engineering
- Interior Design
- Structural Engineering
- Mechanical Engineering
- Electrical Engineering
- Code Consultant
- Building Science Engineer
- Graphic Designer
- Public Artist and/or Art Consultant

Note that Indigenous participation in the design process is expected to be integrated across several disciplines, and therefore no separate Indigenous advisors are listed above.

Portage & Main Revitalization
Summary of Consulting Fees for Preliminary Design & Class 3 Estimate

Surface Works	$	375,000
Pavilions	$	177,700
Municipal Services	$	202,000
Traffic Management Plan	$	440,000
Roadworks	$	280,000
Membrane Replacement	$	285,000
Specialists		
Graphic Designer	$	30,000
Public Engagement	$	120,000
Historian/Interpreter	$	20,000
Art Consultant/Artist	$	20,000
Total Preliminary Design Fee Estimate:	**$**	**1,949,700**

Figure 65. Estimated Consulting Fee Summary to Preliminary Design. Refer to Appendix 9 for additional detail on disciplines involved and assumed fee percentages.

Appendices

Appendix 1: Membrane Replacement Report (Stantec)
Appendix 2: Heritage Report (Anne Lindsay)
Appendix 3: Design Intents Boards
Appendix 4: Lighting Vision (Ombrages)
Appendix 5: Draft Vision Concepts
Appendix 6: Design Opportunities Renderings
Appendix 7: Recommended Vision Renderings
Appendix 8: Surface Works Construction Cost Estimate
Appendix 9: Consultant Fee Summary
Appendix 10: Public Engagement Report (Argyle + City of Winnipeg)