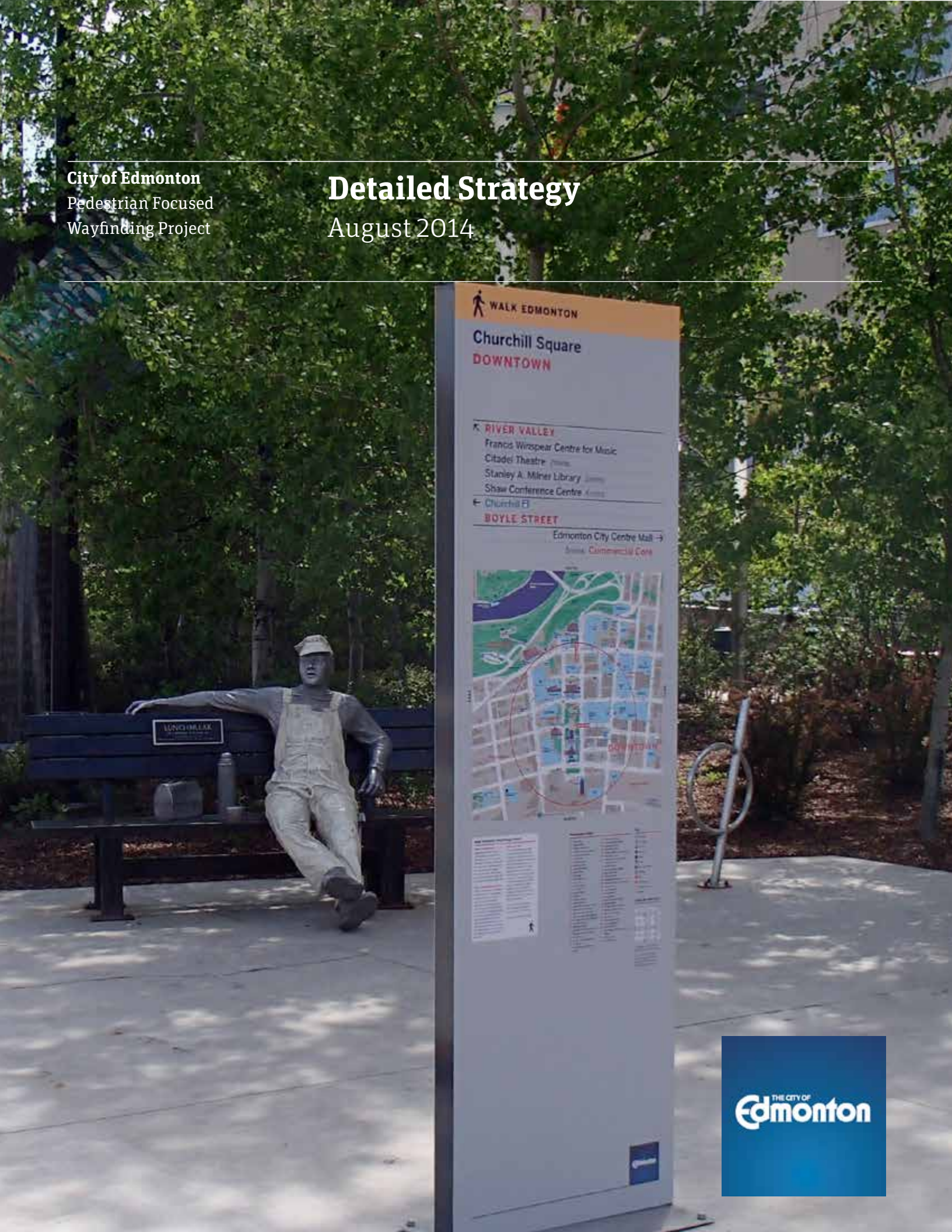
City of Edmonton
Pedestrian Focused
Wayfinding Project

Detailed Strategy

August 2014



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Executive summary

This strategy details a proposal for a consistent wayfinding system to provide seamless information for citizens and visitors. The project will initially be aimed at wayfinding in the Downtown, BRZ areas, pedestrian corridors and the transit system.

Following a research and prototype phase, this strategy has been prepared to explain how to coordinate information across different modes of transportation and media. A pedestrian-focused, map-based system is proposed as the core project recognizing the importance of walking as linking mode for all other transportation and its critical role in city life and business.

The strategy proposes that the system is developed around two Corporate Supportive Projects commissioned by the City. The first is the creation of System Manuals that would describe the elements, rules and applications of the system, the second is a geospatial master map that would allow wayfinding applications to be produced ready for street signs, print, online and on mobile devices. In this way the strategy proposes a system that can expand with technology and respond to the rise in digital information.

Prototype designs are suggested as tested with the public and City stakeholders. These serve as a direction for detailed development work recommended to create the System Manuals. Similarly, an outline family of sign types, digital applications other methods of improving city legibility are discussed.

The strategy concludes with a section that proposes a multi-year programme of projects that could be delivered using the System Manuals and geospatial master map. Budgetary cost ranges are provided for different potential options and assumptions. Finally, the way in which these projects may be delivered within the structure of city management is discussed for further consideration.

1.1 Purpose of this document

The Detailed Strategy is one of a series of reports that investigate and propose a corporate approach for urban wayfinding across the whole City of Edmonton.

Preceding this strategy a report entitled, 'Towards a Corporate Approach to Wayfinding', September 2013 provided a review of current signage and information across the city and initial recommendations for producing a seamless system of signage, print and geospatial components that could integrate transportation by focusing on information to support walking.

This strategy is also supported by the 'Wayfinding Business Case', May 2014 which provides a case for implementing a wayfinding system in the City of Edmonton. The focus of this project is on pedestrian scale wayfinding, focused on the Downtown, our pedestrian commercial streets, transit and LRT stations and the interface with the River Valley Park system. The business case also refers to a prototype design that was tested amongst the Downtown public by the City in April 2014.

Together these reports are intended to provide the context, plan and evidence to enable the necessary budgetary and organisational decisions.

1.2 What is wayfinding?

Wayfinding is the process of navigating places by 'reading' a wide range of signals including landmarks, memorable areas, edges and pathways, as well as more directly, by using signs and information. In our complex cities, wayfinding can be a challenge that may mean we are annoyingly late for an appointment or, in the extreme, something that leaves a negative impression of the whole city.

Wayfinding has become a term that focuses on the planning and design of a range of information tools. Wayfinding systems have developed in recent years that coordinate information on the web, mobile, print and signage so that journeys can be supported during planning and en route. Wayfinding systems often focus on pedestrian movement but include elements that integrate with other modes to support the idea of a seamless journey. Major cities including London (UK), New York and Toronto are developing multi-modal and multi-media wayfinding systems.

The breadth and sophistication of systems has allowed wayfinding to contribute to more than navigation and they are increasingly used by cities to influence transportation habits, support local business, encourage tourism and for city marketing campaigns.

1.3 City context

The City of Edmonton is a fast-growing and diverse community of people, businesses and culture. Edmonton's strategic plan, 'The Way Ahead', provides a framework to transform the city into a more sustainable, innovative, liveable and integrated place. The City decided that a corporate approach to wayfinding was needed to help meet its strategic plans and also to coordinate a range of ongoing initiatives.

Wayfinding is specifically mentioned in a number of strategic plans, including the Walk Edmonton Strategy, and the Bicycle Transportation Plan and is seen as a key streetscape element in a number of other plans including the Capital City Downtown Plan. An initial scan of City efforts related to wayfinding and mapping found little in the way of coordination or consistency, and very little wayfinding at all in the public realm.

A strategy for a city wayfinding system was commissioned to consider all modes of transportation but to focus on walking. This reflects on the fact that walking is the connecting mode for all other transportation and the critical importance of walking to the liveability of Edmonton's neighbourhoods.

The strategy also focuses on the areas which could benefit most immediately from walking wayfinding, the Downtown area, BRZs, connections to transit and pedestrian corridors. Further integration to use the knowledge and standards for other modes and areas could be added in future.

2.1 Context

The initial report, 'Towards a Corporate Approach to Wayfinding', September 2013 summarised audits, research and public involvement as a basis for an outline strategy. The key observations are:

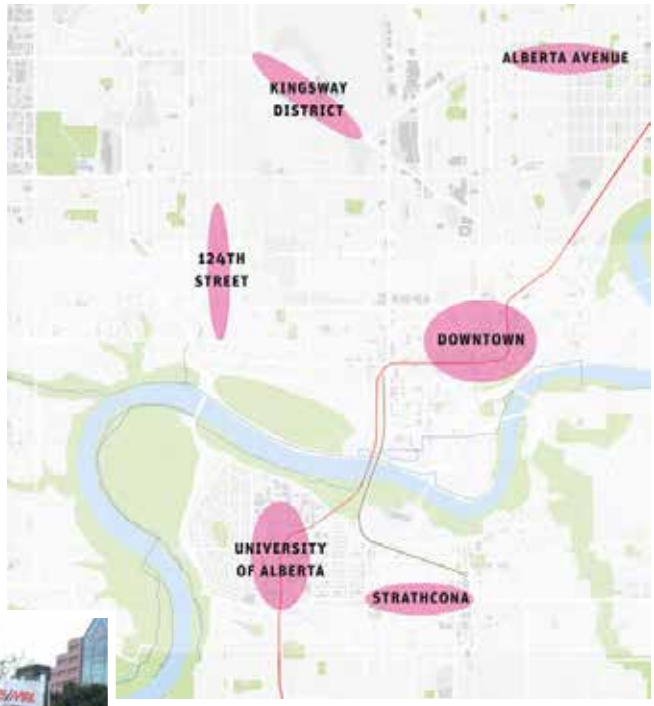
Fragmented - The research showed that the growth through the automotive era and resulting urban form of the city, had led to fragmented neighbourhoods separated by seemingly un-walkable distances. Transit and increasingly shared use paths, offer connections on many corridors, but most people prefer to drive reinforcing misconceptions about walkability.

Winter city - Climate has a significant role to play by encouraging inward-facing development and covered malls. Downtown, the higher level of office development and the Pedway, add to this trend leaving the streets unnaturally empty in the evening. A city winter city strategy is aimed at encouraging people to reconsider their city during the colder months.

Neighbourhoods - However life outdoors is important to Edmontonians and there are vibrant local centres and festivals that are a draw to visitors and an opportunity to encourage the many incomers to explore their city.

River Valley - One of the most important outdoor assets is the River Valley, the largest city park in the world. This natural phenomenon is so physically dramatic however that accessing it requires some knowledge.

Street grid - There is a largely consistent street and avenue numbering convention in the city. The grid is however, incomplete

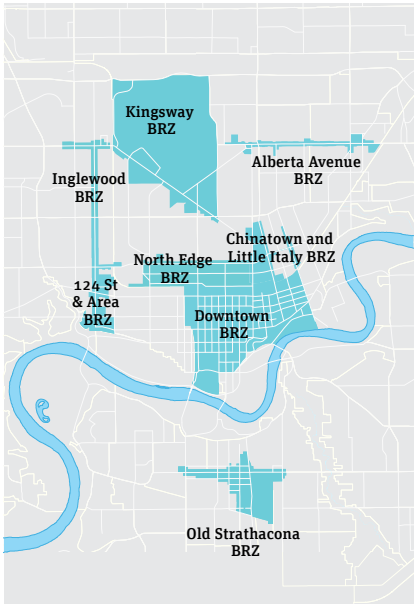


and convoluted around the River Valley, creating disorientation. Outside of the city core and mature neighbourhoods, suburban design has also broken the grid in many ways (curvilinear designed roadways, cul-de-sacs, etc.) creating similar challenges.

Walking information - Apart for street name signs, walking information is hard to find in the City and there is almost no wayfinding signage except for drivers. Where information is found there are examples of similar names and multiple names for the same places such '4th Street' being the local identity for the popular dining places on 104th Street. The real 4th Street is over 15km from its namesake.

Integration - ETS provide a range of transit information and is the most recognizable identity on the street, but there is little to help a customer plan a transit journey at an exchange or to orientate themselves on arrival. There is an industry in visitor maps and online tools produced by a wide range of businesses and organisations. These are not coordinated and represent many different views of the city and a large investment in overlapping approaches.

Pedway - The Pedway is the main wayfinding topic in the city. Most people have strong opinions on its pros and cons and think it confusing to navigate. The tortuous passageways, multiple levels, indoor and outdoor links, different opening times and degrees of accessibility mean it is difficult to visualise as a network. However it is an important asset in bad weather and after dark which deserves special consideration in parallel to a street system.



Growth
40–70% growth is predicted in Edmonton over the next 35 years.

ETS
Plans for significant expansion to the LRT network.

2.2 Strategic vision

This strategy recommendations a range of solutions and systems to improve navigation and legibility in the City of Edmonton. The recommendations focus on developing a seamless system of information that supports objectives in the City Strategic Plan and specifically, focuses on improving the walkability of the city. The strategy is the result of research, public involvement, best practice and city advice.

At the core of the wayfinding strategy are users: residents, visitors, businesses and many other communities and stakeholders who have an interest in the future success of the City. The design of information should be user-focused, accessible, coordinated, easy to use and useful. Properly executed, wayfinding should be a component of a better city experience, the glue that allows a seamless journey and a way to communicate what the city has to offer.

To direct this strategy ten wayfinding principles are proposed. These principles describe how all modes, communications, developments can provide consistent, clear and connected information. These are listed right:

Principles for Wayfinding in Edmonton

1. Seamless
Integrating core elements and rules for information across modes to connect them and reflect the real journeys that people make.

2. Walkable
Breaking the city into walkable neighbourhoods or 'stepping stones' to structure people's mental maps and promote walkable connections.

3. Named consistently
An agreed set of names for areas and places allows people to describe what are called and where they are reliably.

4. Map-based
Creating and using a consistent map of the city supports our preference for visual explanation of complex information. Arranging maps in the line of sight (ahead up) makes them more accessible.

5. Progressively disclosed
A rationale for spreading information along a journey to avoid overload and provide a sense of arrival.

6. Predictable
Consistent appearance, placement and references in information foster trust and promote a sense of care.

7. Intuitive
Don't make me think. A planning approach that ensures simple and clear information that is placed at natural decision points.

8. Inclusive
Information designed to be as clear and easy to use by anyone. Different media should be used to allow different needs to be met.

9. Welcoming
Designing information to communicate the image of the city and the diversity of its core, urban villages and attractions in a positive tone of voice

10. Flexible
Future-proofed by creating systems and standards that can be applied to adapt to growth, new media and new users

2.3 Strategic Framework

The strategic recommendations that have been made fall within four themes:

Legible city – clarifying the image of Edmonton and the relationship between its downtown, urban villages and places as a connected whole

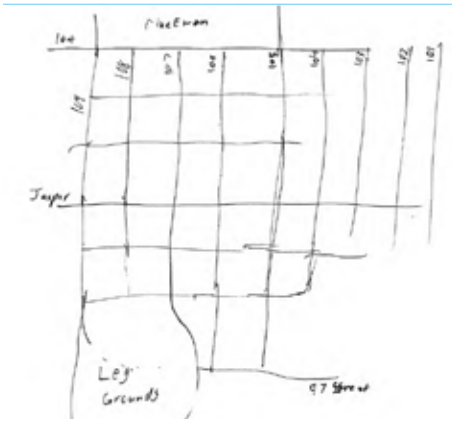
Connecting places – explaining how to travel between places in the city and encouraging people to consider other options than driving.

Walk Edmonton - focusing on walking to link different types of transportation and to reveal what the city has to offer.

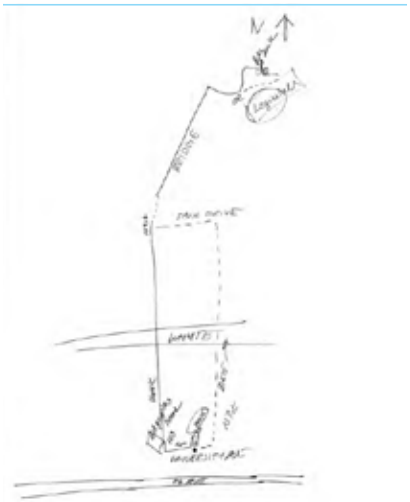
Attractions and seasons – providing information to support the festival city, local business and seasonal effects.

2.4 Legible City

The City of Edmonton covers an area of over 680 sqkm. Its 375 neighbourhoods reflect a vast diversity of urban forms from the towers of Downtown to the heritage centre of Strathcona and from the major industrial districts to the mature residential streets of Westmount and Garneau.



The scale and process of development, much of which has occurred during the automobile age, has led to a city that can be hard to get your bearings in and one where landmarks are very valuable as points to anchor journeys. Experience provides the knowledge of how the street numbering ascends and how to cross the River Valley, but to the visitor, Edmonton is hard to comprehend. Mental maps (left) show that people see the city in terms of its grid, with limited knowledge of what exists between destinations that can drive to.



While the city continues to change physically, improving legibility through the wayfinding strategy focuses attention on creating a consistent visual image of the city. A map-based system would provide the ability to view the city at different scales. At the highest level it would provide a context for the whole city marking centres and major attractions. A middle layer would indicate the key arteries formed by roads, rapid and frequent transit and by the shared-use corridors. The most detailed level would show the information needed to help people walk around its neighbourhoods.

Another important aspect of the visualisation of the legible city will be to properly reflect the asset and 'seam' produced by the River Valley Parks (RVP). The RVP is a remarkable natural feature but can seem like more of a barrier than an asset. The development of a map system for Edmonton should include graphic devices to convey the sense and scale of the River Valley topography and communicate how to access the area, its grades and steps to knit it into street network and allow people to make better use of it and more informed decisions about how to access and cross it.

2.5 Connecting places

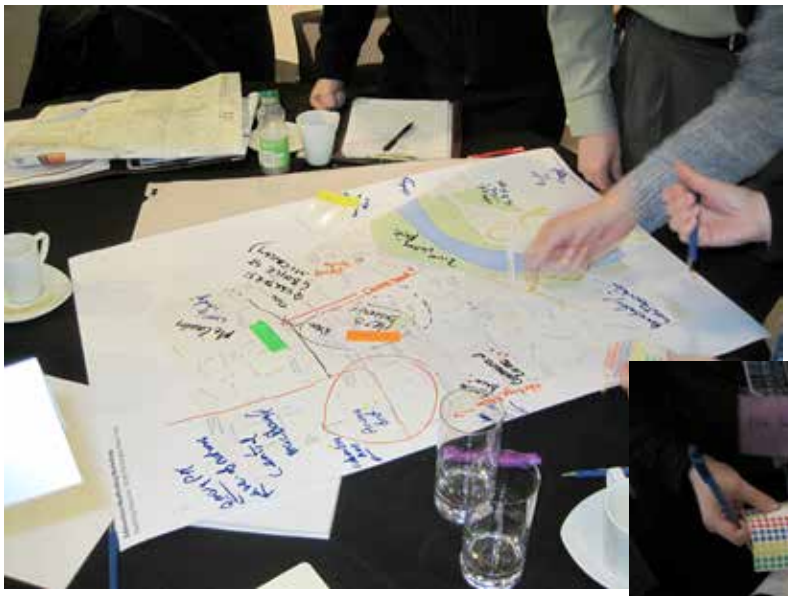
Edmonton is made up of different centres, attractions, parks and places spread across a wide area. While people may naturally be drawn to Downtown and from there need information to help them explore, there needs to be information to encourage people to make the initial decision to visit other neighbourhoods.

The wayfinding strategy therefore needs to connect Edmonton's many places together in a simple, predictable and reliable way to help users navigate the area and its transportation options.

As there are countless possible combinations of route and mode, the wayfinding strategy employs a planning approach that structures the choices into a series of hierarchies. Hierarchies that

- Simplify all transit choices to those that connect at a city level before those that service local areas
- Identify the more connected walking and biking routes to provide a rationale for signage locations; and
- Describe districts containing neighbourhoods which themselves contain places forming a consistent system of addressing.

As part of this strategy a prototype project was developed that included a naming and route hierarchy workshop on January 21st, 2014.



2.6 Walk Edmonton

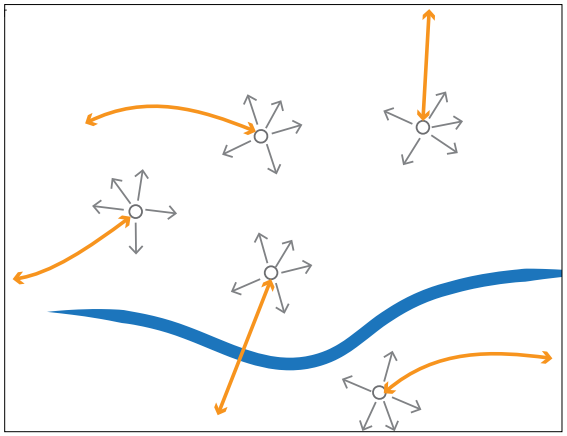
The wayfinding strategy focuses on walking for several reasons:

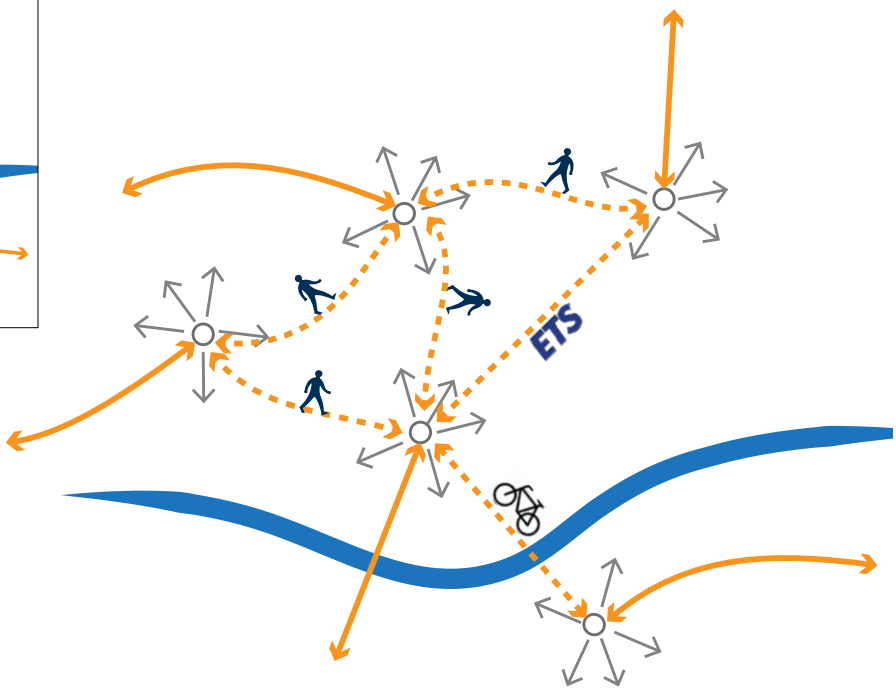
- Increasing walking is a strategic objective which can be supported by improved information;
- Walking is also the critical connecting mode for all other transportation.
- Preparing wayfinding for walkers requires considering the finest level of detail and in so doing, provides a framework for other modes where speed and infrastructure make movement simpler to describe.

Edmonton does not have an easily understood network for walking. While most streets have sidewalks, the grid is incomplete in many places and around the River Valley, streets curve or start and end according to the geography creating disorientation There are also a number of hidden walking routes such as stairs into the River Valley, shared-use paths that lie between blocks and cross parks, and perhaps most notably, the malls and subways comprising the Pedway.

To encourage walking it is important to provide a way to understand reasons to walk and the nature, duration and effort involved. Walkers in unfamiliar areas need frequent reassurance that they are heading in the right direction. There needs to be clear wayfinding information at intersections where people need to make a faced with directional decisions. Many of these locations are also 'dwelling points', offering an opportunity to give people an overview of that part of the city and possibly inspire them to find a new route or area.

The prototype project investigated some of these issues which are explored in the following sections.





A central idea is to change habit of driving to a single place and then leaving (above) and to encourage walking as a choice to connect areas of the city and the other modes (right)

2.7 Attractions and seasons

Life in Edmonton is defined at one level by the weather. Relatively long winters and occasionally severe weather, make walking outdoors an unpleasant prospect for many. The Downtown Pedway, cars and transit are more important at these times of year. However the are opportunities to get out and a multi-media wayfinding system should provide information relevant to the season allowing people to make informed choices about the appropriate way to travel. This might include maps that show sidewalks and paths on snow clearing routes or cross country ski routes into the city.

During the spring, summer and fall Edmonton has a reputation for a packed programme of festivals, farmer's markets and local events. It also has its popular night life areas, notably Whyte Avenue as well as a number of emerging evening hot spots, which contribute significantly to the economy and vitality of the city.

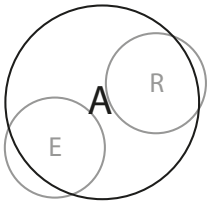
Wayfinding information for Edmonton should include graphic devices and methods using digital media, to provide or enable third-party information that makes travelling to and between events easy. Travel should not become part of the experience and so wayfinding should work simply and effectively in the background to a good day or night out.

3.1 System architecture

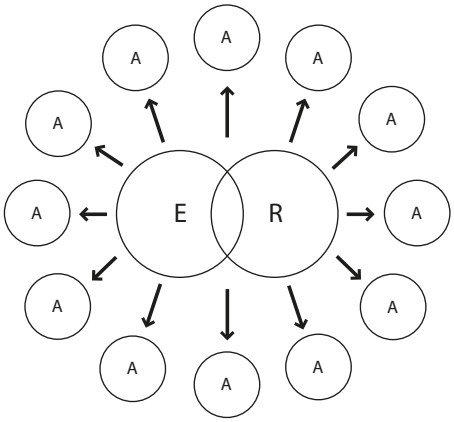
Most wayfinding projects are driven by a particular need – to produce a walking map or some signs for a development. This is a discrete application that may create information elements and use some particular rules to direct the solution. However the elements and rules created in this way usually do not consider wider application or integration and end up becoming a fragment that works only for that particular application.

The wayfinding strategy aims to create a seamless solution that works across different modes, environments and phases of implementation. By separating out the elements and providing agreed rules, many applications run by different organisations can benefit from one consistent, high-quality system architecture.

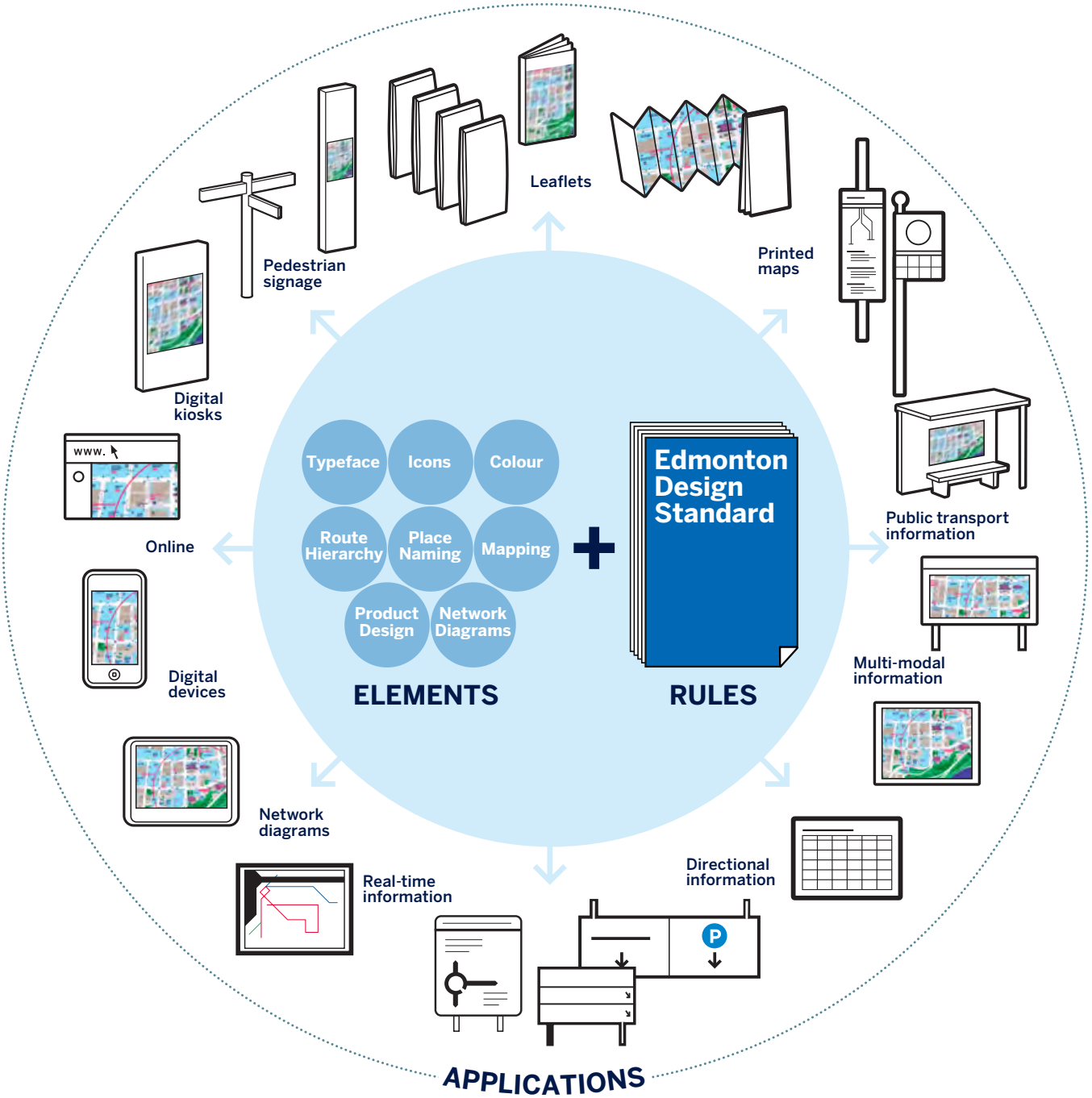
The Elements include the agreed references for the system such as naming, route hierarchies, iconography and visual standards, including mapping. The Rules define how the elements should apply in different situations, for instance the criteria for agreeing content on different scales of mapping. The Applications include specifications for signage, print maps and web pages as well as general principles that can be used to guide the development of future applications, such as bike share docking stations. The Elements, Rules and Applications would be described in a centrally held manual.



Unique applications can create discrete elements and rules



System architecture creates the elements and rules that guide all applications


Leaflets
Pedestrian signage
Printed maps
Digital kiosks
Public transport information
Online
Multi-modal information
Digital devices
Network diagrams
Real-time information
Directional information
Typeface
Icons
Colour
Route Hierarchy
Place Naming
Mapping
Product Design
Network Diagrams
ELEMENTS
Edmonton Design Standard
RULES
APPLICATIONS

3.2 System Manuals

The System Manuals are central supporting projects. The System Manuals would therefore be a important city document owned and overseen by a management level member of staff (see 5.5).

The system manuals would contain describe elements and design standards, as well as specifying applications. It would contain:

- **Principles**
- **Information planning guidance**
  - naming hierarchy
  - route hierarchy
  - asset selection
  - sign placement
  - directional and addressing rationale*
- **Design standards**
  - typeface
  - icons
  - colour
  - system identity
- **Graphic applications**
  - sign family
  - sign layout
  - map specifications
  - digital media standards
- **Product specifications**
  - signage product design
  - installation advice
  - maintenance guidance

* Draft directional and addressing rationale have been prepared for the downtown prototype and are included at Appendix 1.

Other information planning guidance was discussed in a workshop in January 2014 as a precursor for a future full System Manuals development project. Information planning is discussed further in the following pages.

3.3 Map-based system

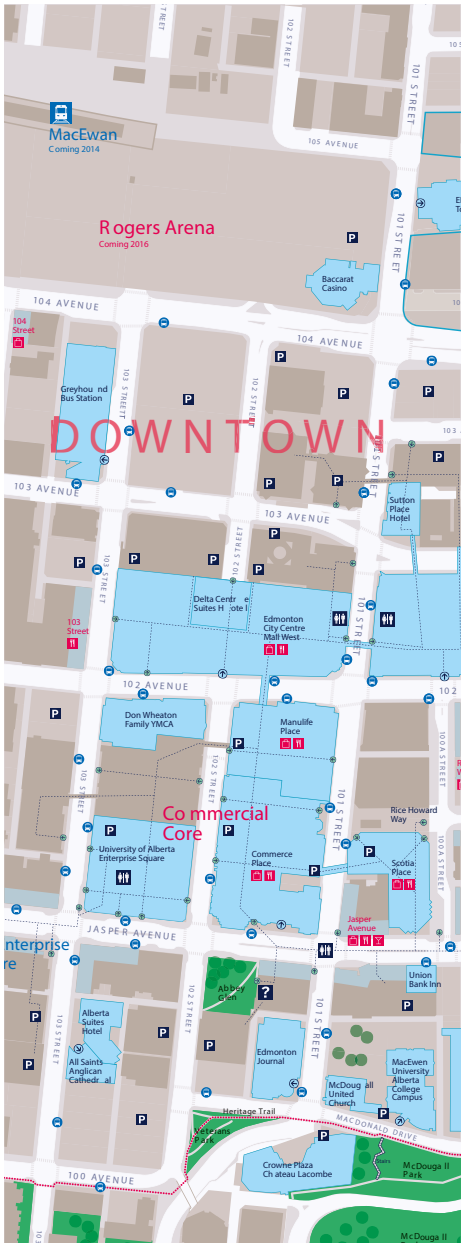
3.3.1 Master map

The wayfinding strategy and principles places a central importance on the use of maps and diagrams. A master map is therefore a core supporting project. As a core element it is expected that the City would create and administer the master map although it may use consultants to create it and maintain it.

The technical requirements of the master map reflect the foreseeable applications. As it would need to be able to support walking as well as overviews of the city and be used on various media, it will be necessary to output the map at different, zoom-able scales. The principles also directs that maps used on walking signage should be ahead up, and so the master map should be set up to produce maps for signs in various orientations. As a central resource, the master map may also be required to be designed for specific uses, such as events or for BRZ's to create local leaflets. This requires an easily editable system that avoids redrawing the entire map for new purposes.

A prototype street sign design (see 4.1) included an initial map design. This used a single **'vicinity scale'** map for walking (left). A master map would likely include two other scales for different uses:

- A **neighbourhood scale** showing the relationship between areas of the city and the important transit, shared use corridors and street connections between. This would provide a sense of the structure of the city and encourage visitors and residents to explore the city. This could be used alongside the vicinity map on signage, online and print maps
- A **regional scale** map would show strategic,city-wide view focused on main areas, visitor needs and interests. The lower level of detail means this would not be suitable for signage information but would most likely be seen in print and digital applications, since it offers a context for journey planning. Importantly it creates an easy to remember image of the city which is lacking.



Extract of the prototype Edmonton vicinity map

3.3.2 Map system

The master map could be created in a number of ways. There are three basic approaches with differing costs and qualities.

Manual mapping (far left) represents the typical current situation where a map is created as a one-off production or, more often, licensed from a cartographer. These maps can be the most cost effective solution for single uses but are inflexible and can be expensive to update.

Levels One and Two are map systems that are essentially drawn from data. Reference is made to a 'cartoengine' which is software that can render GIS data as artwork quality outputs for different uses. Cartoengine could also be replaced with standard products such as ArcGIS. Either approach could be largely automated once set-up.

The far right approach would be a completely digital system maintained in the cloud and updated as often as needed. This digital approach provides complete control, flexibility as well as revenue opportunities with third party users but can more expensive to create.

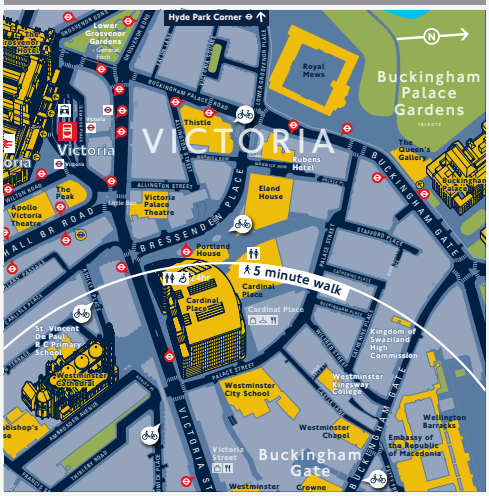
The choice of map system is highly relevant to the scope of future uses and management. In this respect it should be included in the City's business analyst process that is assessing and recommending on geospatial management strategy.

Mapping Quality & Levels of Automation/Interactivity

Manual Mapping

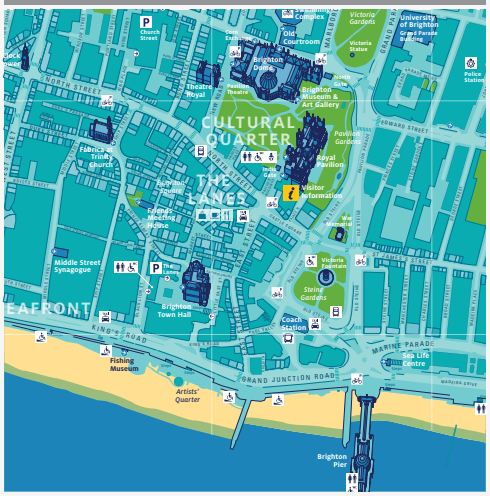
- Each mapping output is manually produced through Adobe Illustrator
- Any data updates require remastering of entire suite of affected maps from scratch
- Manual process requires lots of (human) design time
- Cheaper to initially set up, but more expensive to maintain accuracy in the long term

Level One - Intelligent Static Mapping: Legible London



- Uses intelligent wayfinding principles
- Individually branded designs can be held as style sheets, so multiple designs may be applied to the same data
- CartoEngine reduces the manual time required on each map output
- Site specific 'head up' rotations of maps can be efficiently produced
- Rich levels of information and mapping hierarchies are finessed through the design process
- Updates available quickly through CartoEngine which outputs maps from a central database

Level Two - Digital Platform Mapping: Brighton App



- Cost effective mapping for digital platforms based upon outputs from static mapping
- Mapping is self contained once downloaded onto device (eg. smartphone app).
- No internet/data connection required
- Geo-referencing locates user within map (if using GPS enabled device)
- Search functionality – limited based on pre-existing database set up
- Updates available quickly through CartoEngine which outputs maps from a central database
- Zoom capability available through pre-defined map scales
- Ability to select and display different layers of information/content
- Each zoom level and layer of information is mastered and finessed manually prior to build

Level Three - Fully Interactive Digital Mapping: Living Soho

- Based upon intelligent static mapping but with additional interactive capabilities
- Data delivered through a centrally managed database
- Instantly updateable through live data feeds
- Links to other public API's offers users rich interactive information e.g. traffic updates, next bus at the bus stop, opening and closing times for shops, accessible information
- Comprehensive search functionality
- Hyperlink capabilities to websites
- QR code capability
- Ability to embed photographs
- Full zoom capability
- Digital systems manage look and feel of map and updates through style sheets
- Links to social media and events based information
- Allows fully interactive touch screen capability

3.4 Information planning

3.4.1 Naming hierarchy

A notable issue from the research was that Edmonton is not easily communicated as walkable. This is indicated by the lack of small area descriptions in common use that could be used to give short 'stepping stone' directions for walking.

What is seen is that area descriptions have been defined by the City and are perceived to exist for neighbourhoods, but these may cover relatively large areas that are hard to visualise. Below the neighbourhood level there is often only the street name. While some smaller areas do exist such as Chinatown and Little Italy, they are not easily defined geographically or in terms of memorable characteristics. As a general rule stepping stones should broadly follow the 'Pedshed' scale of a 5 minute walk (400m) although character is an important consideration and may result in irregular shapes, smaller or larger areas.

A workshop exercise with city staff and external interests in January 2014 revealed the existence of a finer grain in Downtown at least that could be adopted to promote walking. This approach should be expanded in development of the full System Manuals including development proposals, further workshops and research.

The result of this exercise would be to create a naming hierarchy that could be used as an address following the hierarchy on the right.

Region
City of Edmonton

Neighbourhood
Stony Plain, Old Strathcona, University of Alberta,..

Stepping Stone
Little Italy, The Quarters, Civic Centre, ..

Destination
Visitor attractions, community centres, transit,..

3.4 Information planning

3.4.2 Route hierarchies

A route hierarchy is essential for the efficient, reliable and intuitive placement of information. Route hierarchies are accepted practice for highway planning where major highways feed arterial streets which themselves feed local access streets. The idea of route hierarchies is also developing for cycling with the emergence of AAA routes and greenways as premium condition facilities.

These existing structures allow priority networks for driving and cycling to be easily defined for the location of directional and confirmation signage at intersections. In the case of cycling however, in urban areas with limited infrastructure, cycling route hierarchies may be established by considering perceived safety, conflicts, connectedness and comfort.

Route hierarchies for transit also exist in the sense that trains are preferred by most passengers to buses. Preference is also given to bus express routes over slower, less frequent services.

This differentiation and the effect it has on the accessibility of the transit network without extensive planning, means it is possible to draw a 'Frequent Transit Network' diagram that is the backbone of the network offering fast, frequent and all day services. All that is required is to agree the parameters for inclusion, one typical standard being services that run for 15 or more hours a day, 7 days per week and with a headway of 15 minutes or less.

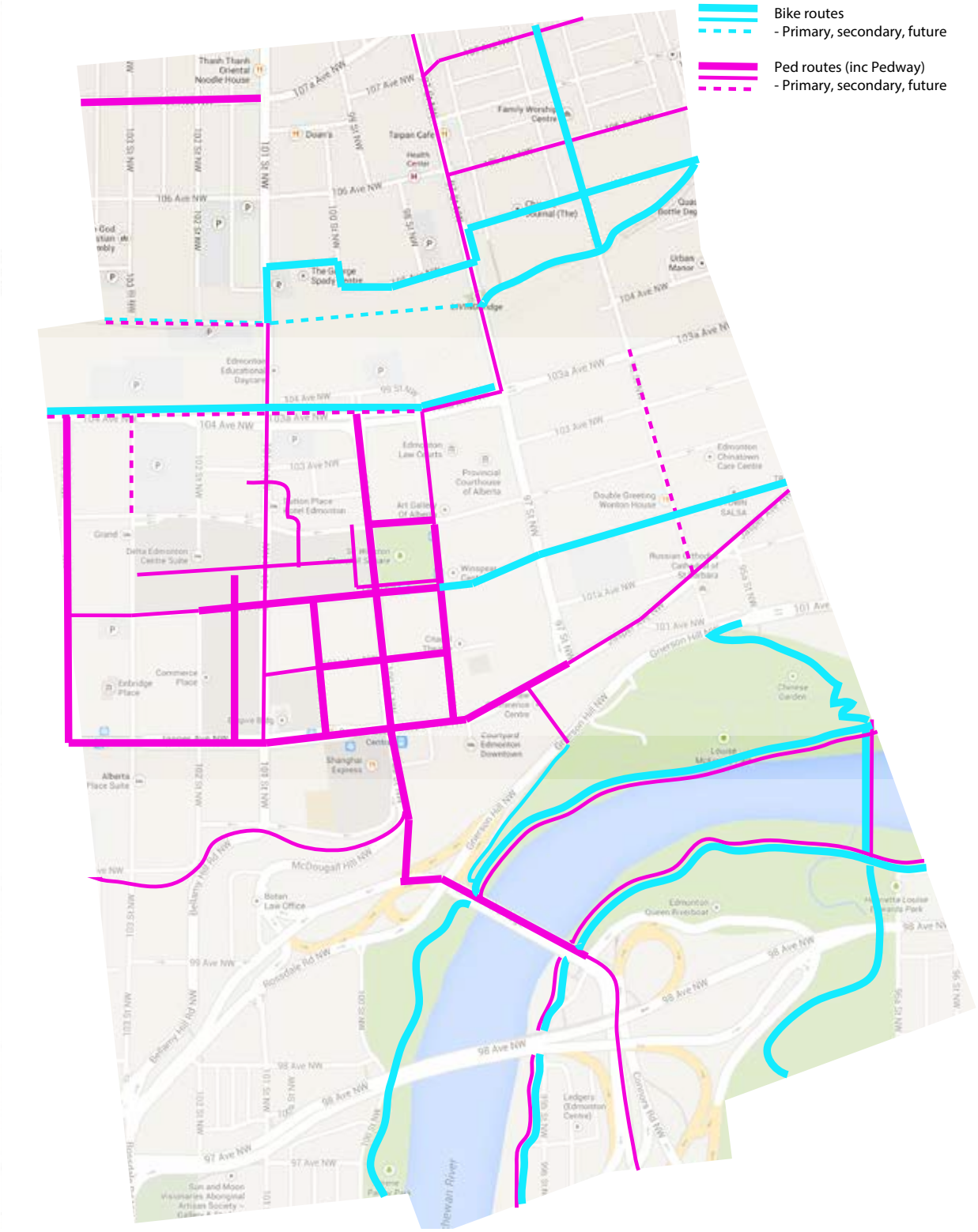
Route hierarchies for walking are much less common. This is because city infrastructure is not developed around the idea of differential conditions for walking. However a natural order does develop responding to the accessibility and safety. A walking route hierarchy is particularly important for wayfinding as it will control signage clutter.

Workshop exercises in the development of this strategy focused on Downtown Edmonton indicated a walking and cycling hierarchy could be agreed as shown overleaf.

In this case three levels were defined. The intersections of the primary and secondary routes would be the priorities for wayfinding information:

- Primary routes - these routes form the main connections between groups of destinations or stepping stones. They will have active frontages such as store fronts, to animate the journey or include attractive views and spaces. These routes are well-lit, of a good standard of physical design and space and accessible to all users.
- Secondary route - these routes often form connections between the primary network or connect to specific popular destinations. These routes are direct and uncomplicated and should be predominantly well-lit, of a good standard of physical design and space and accessible to all users.
- Other routes - the rest of the street network that is walkable or bikeable but that would not be considered as priorities for signage.

Summary of January 2014 naming and route hierarchy workshop showing emerging walking and cycling hierarchy. [Map data © 2014 Google]



3.4 Information planning

3.4.3 Asset selection

A central consideration is that the function of mapping for pedestrian wayfinding is to provide a guide to the streets, rather than a scaled version of reality. This means that what is shown on a map is selected rather than a copy of everything. Selecting the content, or 'assets' shown on a map requires a careful balance of what a user might wish to use and the overall clarity and consistency of the map design.

Asset selection criteria are an important part of the wayfinding architecture not only because they guide map design, but also because cities come under pressure to add content as a result of commercial pressure and special interest groups. It is important that the asset selection criteria are therefore consulted upon before decisions are made to adopt them. Once adopted the criteria can be applied consistently and fairly.

Asset data is collected, cross-referenced and verified through a combination of desk research and field survey. Where possible, information should be obtained from a reputable primary source (City GIS, CanVec, company websites etc.) as many out-of-date websites still exist. This is particularly important where assets are included on the basis of reaching certain thresholds such as tourist volumes.

The asset selection criteria consists of two main categories:

Base assets include the geography and are included by default. They include categories that are largely immovable, clearly defined and perennially useful. Some categories of Base asset require discussion to finalise, such as stepping stone names, but will definitely be included. Base assets therefore fall into two categories; those that are clearly defined such as streets, transit facilities and bodies of water, and those that need discussion such as named open spaces and promoted areas (such as '4th Street).

Live assets include a wide range of content that show attractions and place character. Live assets can be very subjective and must be carefully managed to ensure a reasonable density that remains clear. Live asset criteria can and should be adapted to respond to the density and scale of the area in question.

The primary reason for including live assets should be its function as a wayfinding tool. The secondary reason is to reflect the assets attraction. Live assets holding the widest appeal and landmark value are considered a priority and may be included by use of 3D illustration on the maps.

Representation of assets

Assets are shown graphically in the following ways:

- Icon
- 2D (Vicinity maps / Neighbourhood maps)
- 3D illustrative (Vicinity maps only)

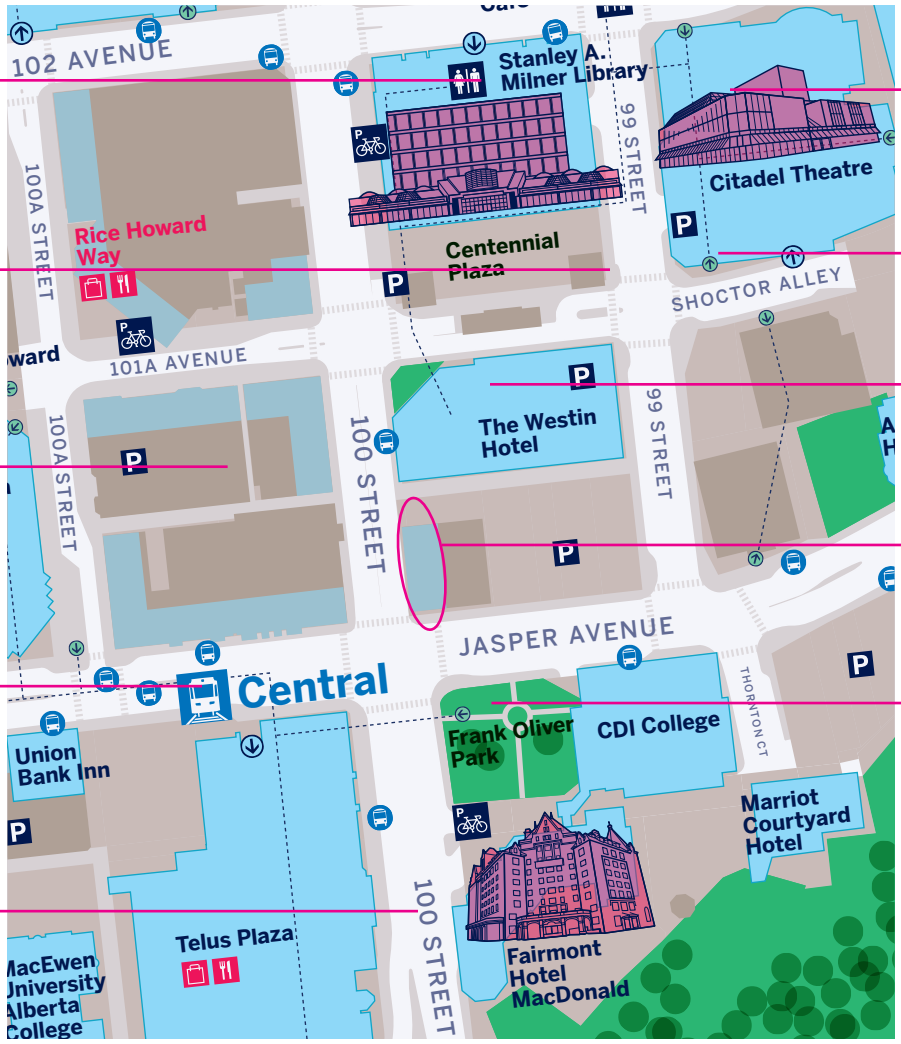
2D Base asset (washroom icon)

2D Base asset (Curb detail)

2D Base asset (Building footprint)

2D Base asset (Station icon)

2D Base asset (Street name)



3D Live asset (Theatre)

2D Live asset (Pedway entrance)

2D Live asset (Hotel)

2D Live asset (Public active frontage)

2D Base asset (Green open space)

3.5 Signage

While the system will include print and online tools, the most visible components will be the signage.

The strategy is focused on walking but considers the role of walking as a connecting mode to all other forms of transportation. A sign family would therefore be developed that integrated walking information needs with other modes.

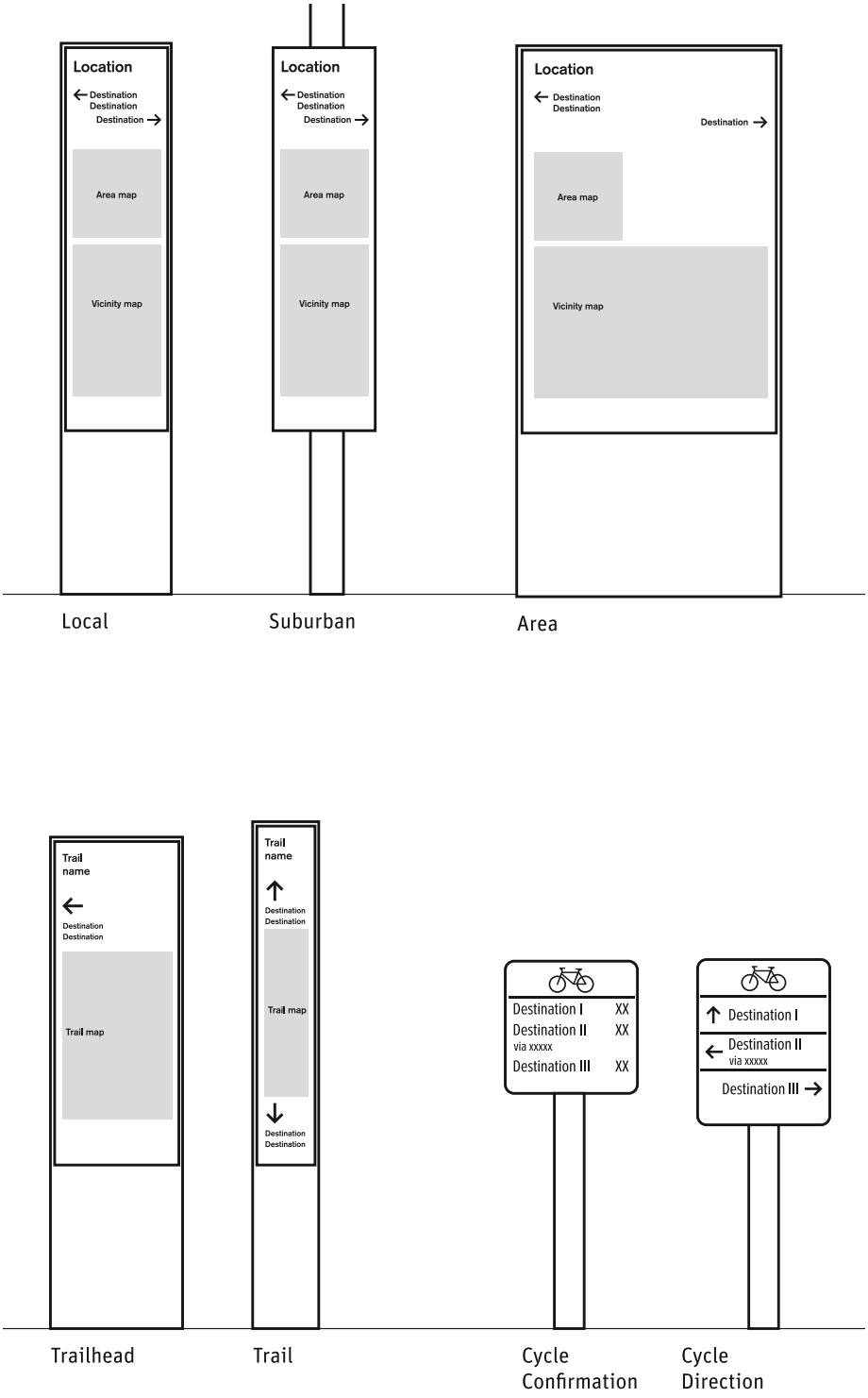
A detailed design exercise will be required to develop the signage family but it is possible to propose the main elements based on understanding the functional roles they would perform to meet the strategic framework.

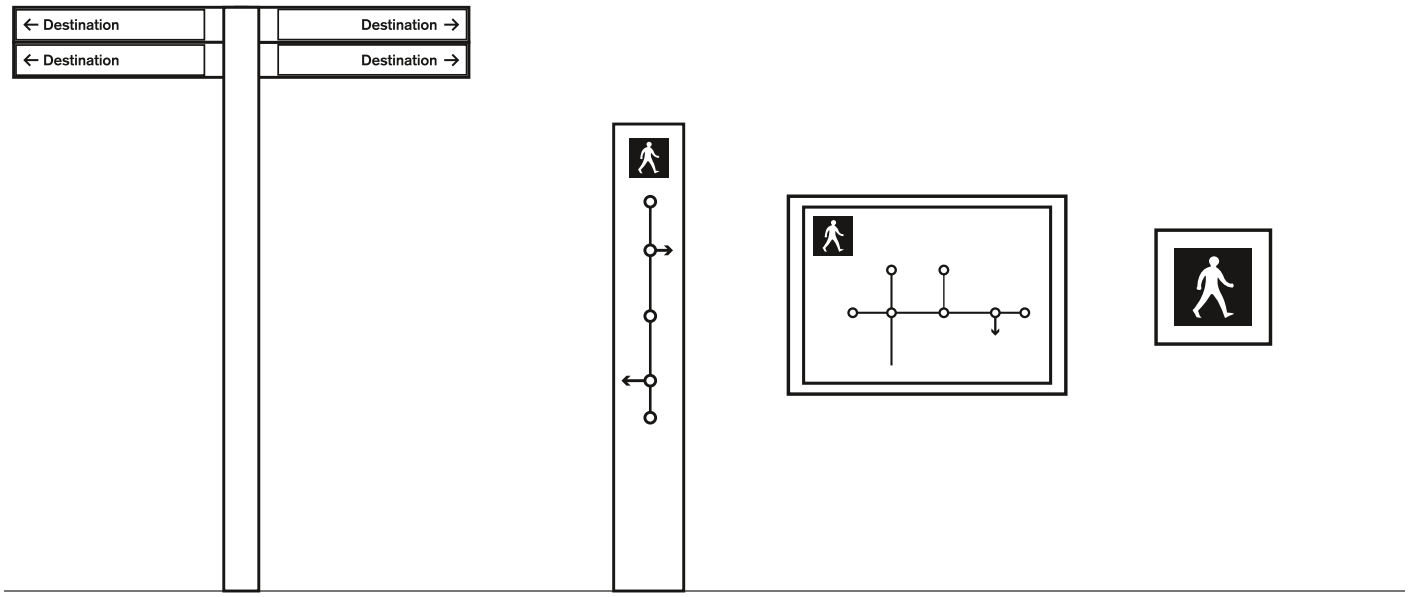
The family shown here includes monolithic street sign elements based on the success of the map-based prototype. Map based signs also provide opportunities to install similar elements in transit facilities.

One of the exercises necessary in the detailed design development will be to decide whether there should be one design for all wayfinding information across the City to highlight its presence consistently everywhere, or whether the information content should be the overriding consistent element with signage designed to suit local character.

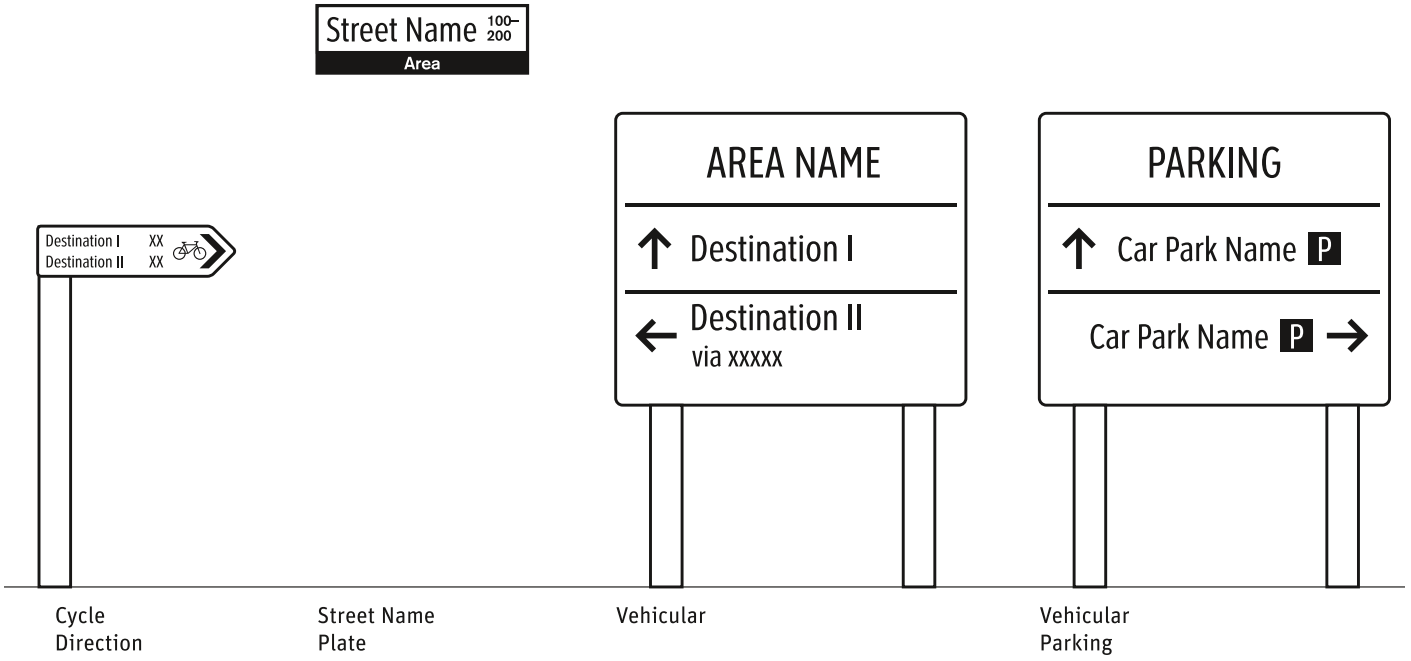
Interface elements will be an important aspect of the Edmonton project. The River Valley and Pedway have particular needs and the system should handover to them in a predictable and organized way (see also 3.8.2)

Also included are simple plate signs such as driver and cycling guide signs. These should match user experience and not divert from accepted standards.





Directional | Pedway | Pedway orientation | Pedway threshold



Cycle Direction | Street Name Plate | Vehicular | Vehicular Parking

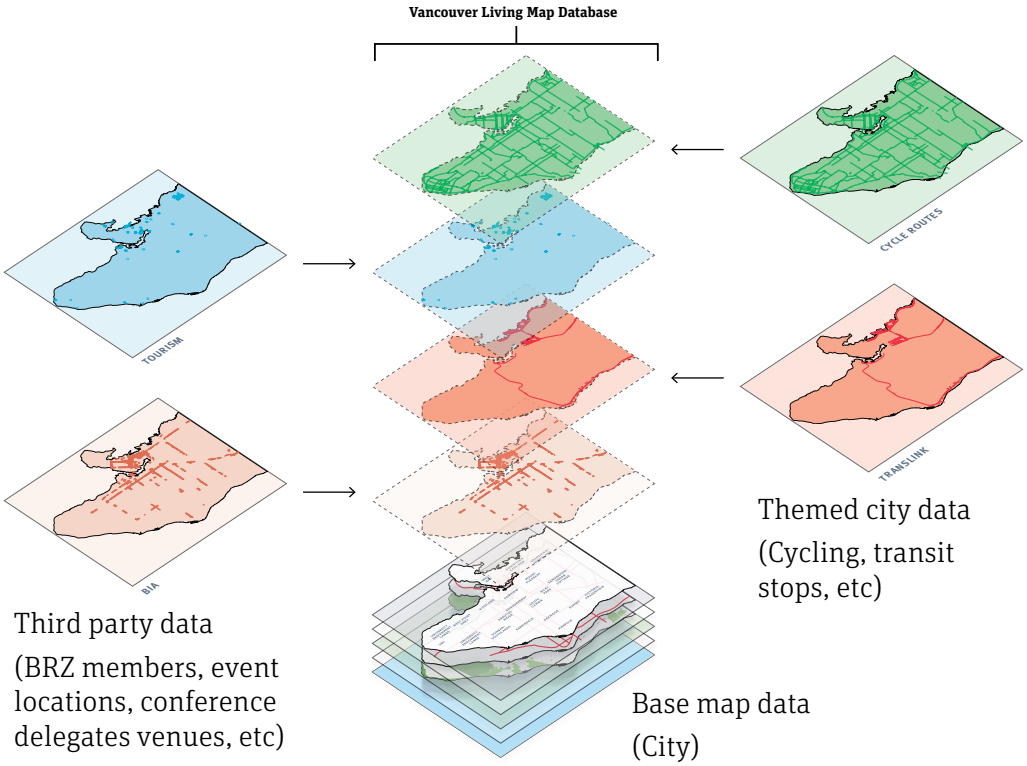
3.6 Print

Printed maps and information would form an important complementary aspect of the system. At present many agencies, associations and companies produce maps for visitors and the general public. A central master map could provide the opportunity for many of these needs to be met at lower cost and to a consistently high quality.

Particular opportunities for City promoted projects would be to build on existing alliances with the BRZ's and Edmonton Tourism to produce local area and festival maps. These maps would contain additional data layers and information to promote the specific purpose, data which could be held by the city to enrich the overall master map database. If a geospatial mapping system is created, it would be a simple matter to create new design styles that would retain the overall integrity of the city wayfinding system but align the map's appearance with an event brand, sponsor or other theme.

A further opportunity would be to produce a new more detailed cycling map for the city. Using the *neighbourhood scale* (see 3.2.1) map base, existing GIS bike route data could be styled and applied to provide a more detailed and useful map with additional work limited to the creation of a new map style and any graphic design to produce a printed leaflet.\

Event maps could also be produced by providing partner organisations with a master map output from the City system in a format (such as pdf) that could be used as a base for graphic software. This would be effective for construction diversions or street markets where the budget for information is limited but the value of tying temporary information into street signage and other permanent city wayfinding would enable people to find their way around easily.



Third party data

(BRZ members, event locations, conference delegates venues, etc)

Base map data

(City)

Themed city data

(Cycling, transit stops, etc)

This example from the City of Vancouver shows how the city master map (Living Map) is based on core geodata that can be added to from partners and third parties.

Maps can then be produced by selecting the relevant layers and outputting them through a software tool which turns the data into the finished artwork ready for leaflet design.

3.7 Geospatial system

An online survey of a 1,000 Canadians by Google in July 2013 estimated that 56% of adults use a smartphone, up from 33% in early 2012. About 80% said they would not leave home without their device.

Other surveys suggest about 45% of people accessed maps from their smartphone and that 40% of Google map usage is from mobile devices. This is on top of well established usage of websites for seeking travel information, ideas for days out and advice on where to go.

Like most authorities, the City of Edmonton has a growing online presence and strategic plans to expand online services and user interaction. The wayfinding system could offer an important contribution to this strategy.

A geospatial system could have various components including the central database, map management system and the publication aspects. Publication would range from creating a simple web viewer to allow pdf downloads and a public API that could be used by app developers freely or under licence. Initially, at least it would be valuable to replace existing City website maps with maps output from the master map.

While websites are now common City development projects, smartphone apps are more rare. They can be expensive to establish and hard to position amongst enormous competition. Strategically app development can be thought of in three levels related to City interests:

· **Core functions** – those related to encouraging and simplifying walking, biking, transit or parking by utilizing the master map. These may be seen as core interests that the City would fund.

• **Partner functions** – those related to allied interests delivered by key City partners including business revitalization and tourism. These functions would rely on partners supplying and managing their own data and agreeing to free use by the City on the basis of mutual benefit. These may be seen as joint-funding opportunities

• **Commercial functions** – those related to added value functionality where there is a role for business interests. These functions would probably include some concessions in terms of brand, potentially requirements to allow some advertizing and for the right product and partner, the possibility of revenue under licensing agreements with the City.

A recommended strategy for app development would be to adopt a modular model. The priority modules to develop would be those related to the core functions. Other modules which rely on partners or commercial interests could be investigated and planned at a pace the City is comfortable with.

This approach has the advantage of using modules as updates to maintain product freshness and also allows exposure to third party involvement to develop over time. However it has the potential disadvantages of the early versions being under-equipped from a user perspective, and possible extra costs if new modules require earlier elements to be reworked.

An extension of the digital strategy would also be to develop digital interactive street signs in selected locations. Using the same API system and the increasingly affordable technology, it would be possible to install interactive screens in some signs giving real time information for events and festivals.

3.8 Interfaces

3.8.1 Interface strategy

The corporate wayfinding strategy is limited to the public realm. It will however contact other systems, whether private or civic buildings, developments, parks, transit facilities or the Pedway. The variety and investment in these other systems makes the idea of a completely integrated approach a Utopian dream. It is hence essential to create a planning and design approach that emphasizes consistency and continuity in the interest of user experience.

The model for this concept is to consider the city system as 'shaking hands' with the other systems. In terms of the user experience it should be clear that they have arrived at a transition point, obvious what they are entering and simple to retrace their steps when they leave. In customer service terms, the experience is of leaving the care of one host and entering the care of another.

The way in which this 'handshake' would operate would vary depending on the nature of the other system but essential aspects would include; agreeing on the name for the destination, agreeing a consistent form of information at every entrance to the destination and as far as possible, sharing iconography and references.

3.8.2 Interface delivery

There are five specific interface situations that should be developed in detail in the System Manuals from these recommendations:

Pedway

The Pedway requires a development plan to organize its expansion and utility, as part of this plan wayfinding should be reviewed from first principles.

The interface between the city wayfinding strategy and a Pedway plan should focus on:

- More prominent and less abstract identity for street entrances to the Pedway,
- Simplifying the communication of open times and physical accessibility at the entrances, and
- Agreeing a single method of indicating routes and multiple levels on street and other maps.

River Valley

The River Valley Parks is piloting a new wayfinding system. This system includes identity signage, map installations and directional elements. At the top of bank, there will be an interface created with city streets that should be coordinated. Recommended areas for design development would include:

- Investigating shared signage installations showing city and River Valley vicinity scale maps for orientation
- Agreeing common graphic standards for colours and icons when map crops extend into neighbouring jurisdictions
- Sharing map data sources or reaching agreement for the city to produce maps for the RVP from a composite master map using RVP geodata.

Transition from driving

Driving is the major mode of transportation in the City and is likely to remain so due to the distances encountered and infrastructure that exists. Improved wayfinding for drivers would help them find destinations and parking more efficiently.

Guide signing could be derived from the elements established in the System Manuals and implemented as a stand alone project in necessary liaison with the Transportation Services Department & Alberta Transportation.

Walking information could be located at exits to parkades and pay stations in major lots to provide orientation and encourage people to park once and walk between several destinations rather than car hop between them.

The City is also installing new E-Park payment kiosks to replace the traditional parking meters, which may provide opportunities to co-locate with walking information on street.

ETS

The Edmonton Transit System is owned and operated by the City and so an internal partner in the strategy. The interface should in this case be more integrated as walking is a necessary component of a transit journey. It is therefore proposed that implementation would be on the basis of the City determining the value case and co-funding from the relevant departments controlling wayfinding and ETS.

It is also possible that wayfinding could qualify as 'Regulatory, pedestrian and warning type signs', which are eligible for GreenTRIP Provincial grant funding as part of capital transit projects.

Areas where development may be focused are indicated in the sign family (see 3.4) and could include creation of:

- Buses from here maps where the City would supply master maps to indicate where to walk to catch onward buses at station and bus exchanges for use in route diagrams created by ETS.
- Walking/Cycling from here maps where the City would supply vicinity maps centred on the transit facility, for ETS to install in their infrastructure.

Major development

Major developers of publicly accessible venues will require some wayfinding as part of the architectural design process. Providing the City System Manuals would help establish a case for consistency if the site is to become part of the public realm, any needs to change agreed naming or route hierarchies and identify opportunities for creating interfaces between the city system and private development sites.

As far as possible, it should be the City's position that integrated wayfinding is in the developer's interest and hence a development cost. Negotiating early in the development permit process would significantly increase the chance of success as the System Manuals could remove the need for consultancy expenditure by the developer. The developer may be able to implement the wayfinding system directly or may choose to contribute to a City-managed fund established for that purpose..

However, there will also be City interest in integrating major attractions and wayfinding may be considered a capital investment for walking in the same way that some highway engineering costs may be accepted in order to provide capacity for development which benefits the City's strategic objectives.

3.9 Legibility

Section 2.4 discusses a wider objective for wayfinding as a means to create a more Legible Edmonton. Complementing the information elements of the wayfinding strategy, it is also important to include consideration of how the physical environment and urban design can reduce the need for wayfinding.

Legibility stems from a range of physical factors popularized by Kevin Lynch in his 1960 book 'The Image of the City'. City planners and architects have absorbed the idea of legibility into their work but it is often compromised by other factors.

For the wayfinding strategy there are two levels of legibility guidance that could be adopted:

1) Urban design guidance

The City could create architectural guidelines that would cover the core design aspects of legibility as a fundamental framework for developing public realm:

1. Create an identity at each location, different from all others.
2. Use landmarks to provide orientation cues and memorable locations.
3. Create well-structured paths.
4. Create regions of differing visual character.
5. Don't give the user too many choices in navigation.
6. Use survey views (give navigators a vista or map).
7. Provide signs at decision points to help wayfinding decisions.
8. Use sight lines to show what's ahead.

[Adapted from Mark A Foltz, 'Designing Navigable Information Spaces', 1998]

2) Placemaking design

Placemaking would support wayfinding information reducing the need for repetitive signs. Placemaking design would be especially useful in newer parts of Edmonton where local character is yet to become established.

Small scale projects could include:

- Public art installations to create landmarks
- Creating of dwelling places and memorable nodes to assist orientation
- Using surface materials, landscaping and lighting to mark pathways between key destinations
- Creating gateway features and architectural thresholds to visibly divide one area from another
- Using environmental graphic design (EGD) techniques to supplement signage. EGD techniques may include architectural lettering; projected signs and lighting; pole banners and flags; applied graphics, sculpture and murals with the intent of communicating identity or direction.

4.1 Downtown prototype

The downtown prototype was initiated as part of the strategy development process. It comprised of five test street map signs located around the civic core. The City undertook pre and post implementation surveys to evaluate public opinion and stated behaviour related to the test information as part of establishing a business case for wider implementation.

The results of the evaluation indicate positive responses to the ease of use and encouragement the maps gave to increased walking. These results correlate well with similar tests in other cities.

Comments from the evaluation identified some areas for design development, including clarity of the 5 minute walking circle, representation of the Pedway and colour options for some map contents. Generally however, the prototype may be considered a success and a solid basis for detailed design of a city wide map system.

The following section describes the design development of the prototype as a basis for future citywide implementation.

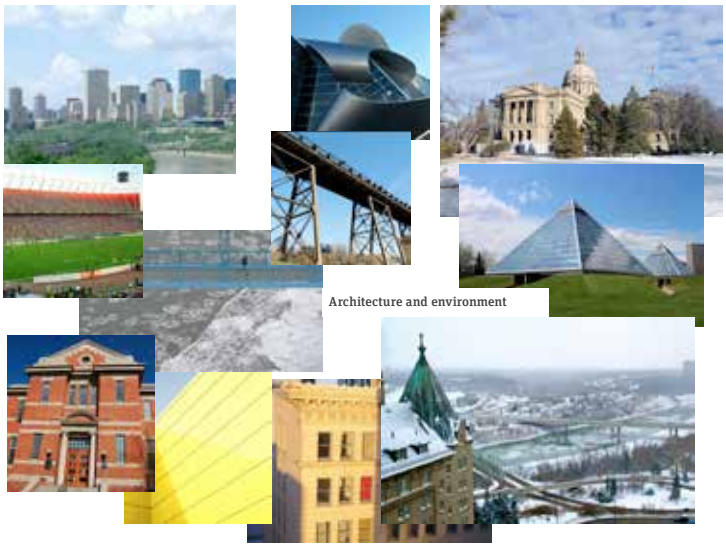
4.2 Design development

4.2.1 Colour

Inspiration for map colour was found in Edmonton's strong palette of natural greens and blues as well as the warm greys and browns of its architecture.

Colour references were also found in images of Edmonton's vibrant festivals

And in the blues, reds and greens of its existing information.



Draft colour palette

Base colour	Pavement colour
Landmark colour	Building colour
Label colour	Water colour
Transit colour	
Highlight colour	Parkland colour

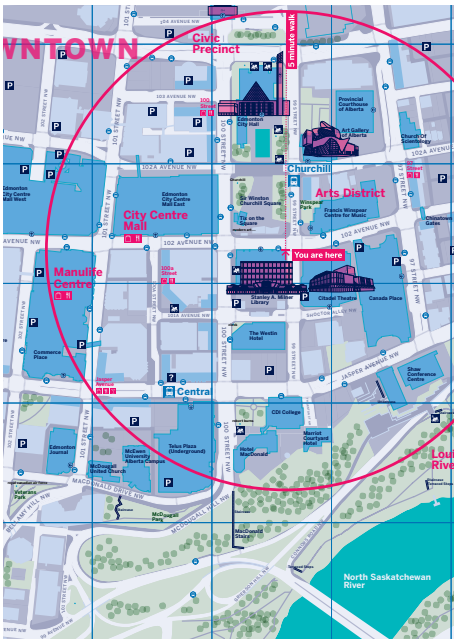
4.2 Design development

4.2.2 Themed colours

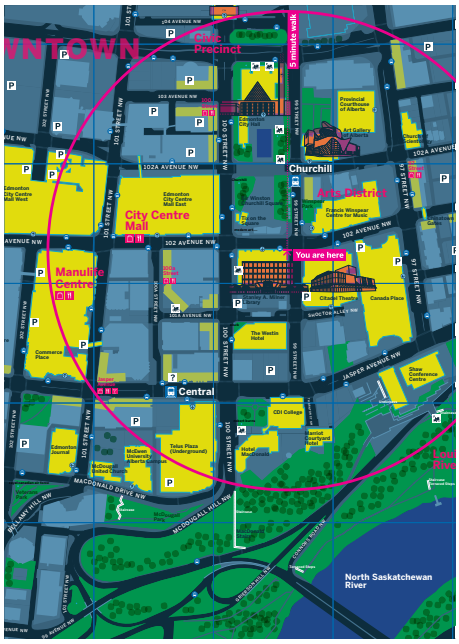
Responding to the seasonality, night-life and event calendar of the City further colour palettes could be developed to provide thematic views.

Themed maps could also be used with text for interpretive and place-making signage, leaflets or smartphone apps.

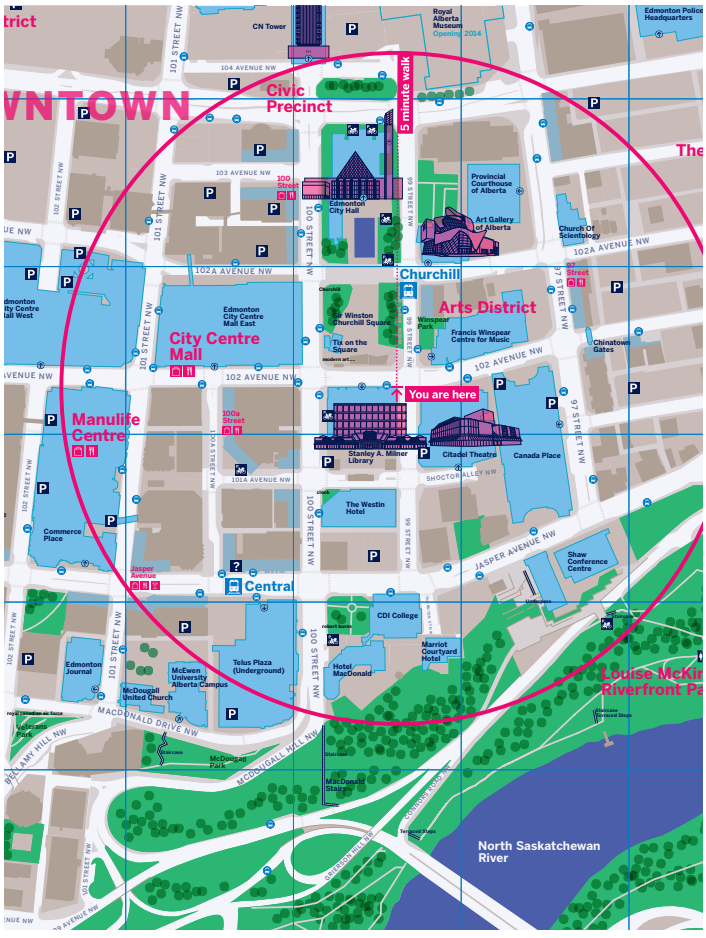
Examples might include self-guided art or heritage walks around the City in collaboration with a local society or Edmonton Tourism.



Winter City theme



Night time theme



Standard theme

4.2 Design development

4.2.3 Typography

A key element of Edmonton's identity comes from the lettering that is used across the cityscape – from cultural institutions and sports teams to transit stations and highway signage.

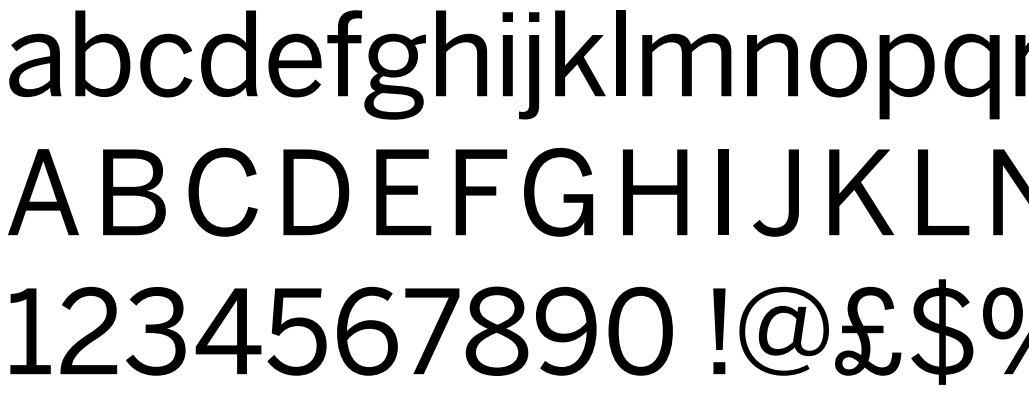
Common styles of lettering in Edmonton include sans serif typefaces such as Helvetica, Futura, DIN and Frutiger which are used across the city's existing wayfinding information.

The **Benton Sans** typeface is proposed for use across Edmonton mapping for the following reasons:

- Good legibility at both large and
- small sizes
- Wide range of weights
- In-keeping with the style of type used across Edmonton
- Uniqueness – though it is similar to Helvetica or Akzidenz Grotesk its details and character differentiate it from more commonly used typefaces.

Benton Sans Black

Benton Sans Bold



Benton Sans Regular

4.2 Design development

4.2.4 Iconography

Preliminary icons have been developed for the prototype map but these will require expansion and refinement to account for requirements across the city and to accommodate interfaces with other systems.

The icons used are based on national or international standards (AIGA) to ensure widespread recognition. LRT and bus icons have been tailored to reflect existing Edmonton iconography.

Details of the icons have been edited to complement the characteristics of the Benton Sans typeface.

Car Park | Bike Parking | Toilet | Disabled Toilet

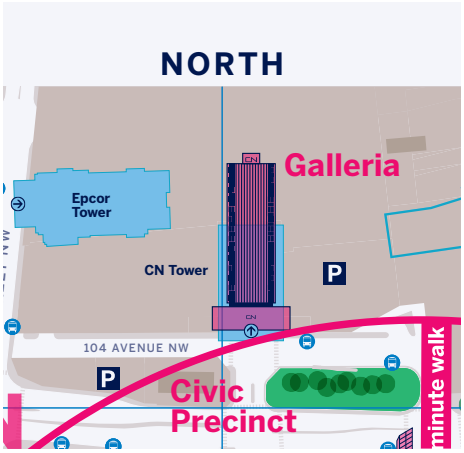
Visitor info | Police station | LRT station | Bus stop

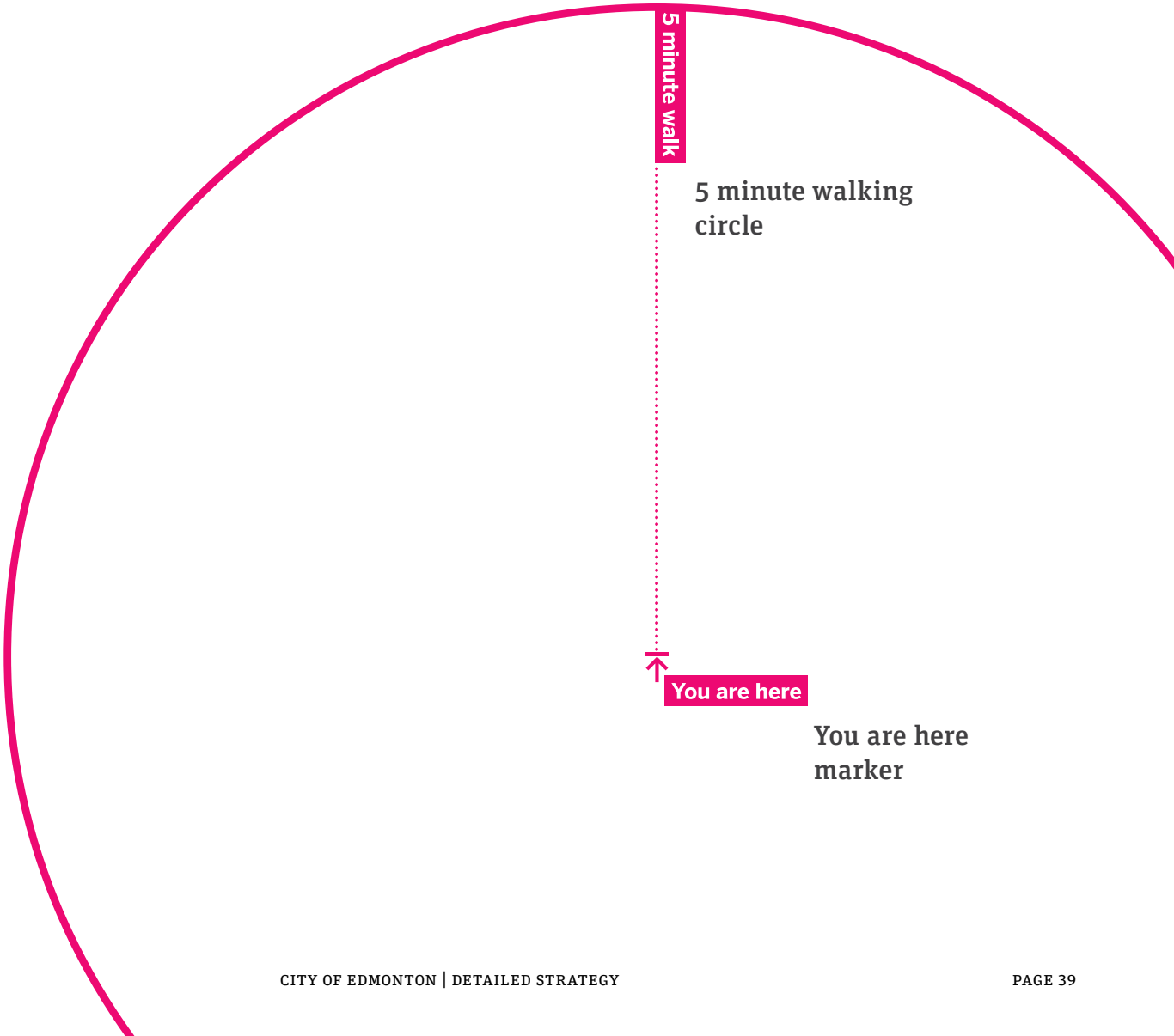
Shops | Restaurants | Bar

4.2 Design development

4.2.5 Cartographic elements

A ‘You are Here’ marker, 5 minute walking circle and cardinal direction markers are included on the map to indicate sign location, map scale and orientation.





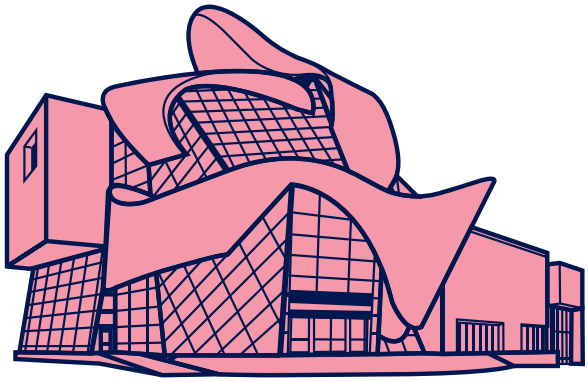
4.2 Design development

4.2.6 Landmarks

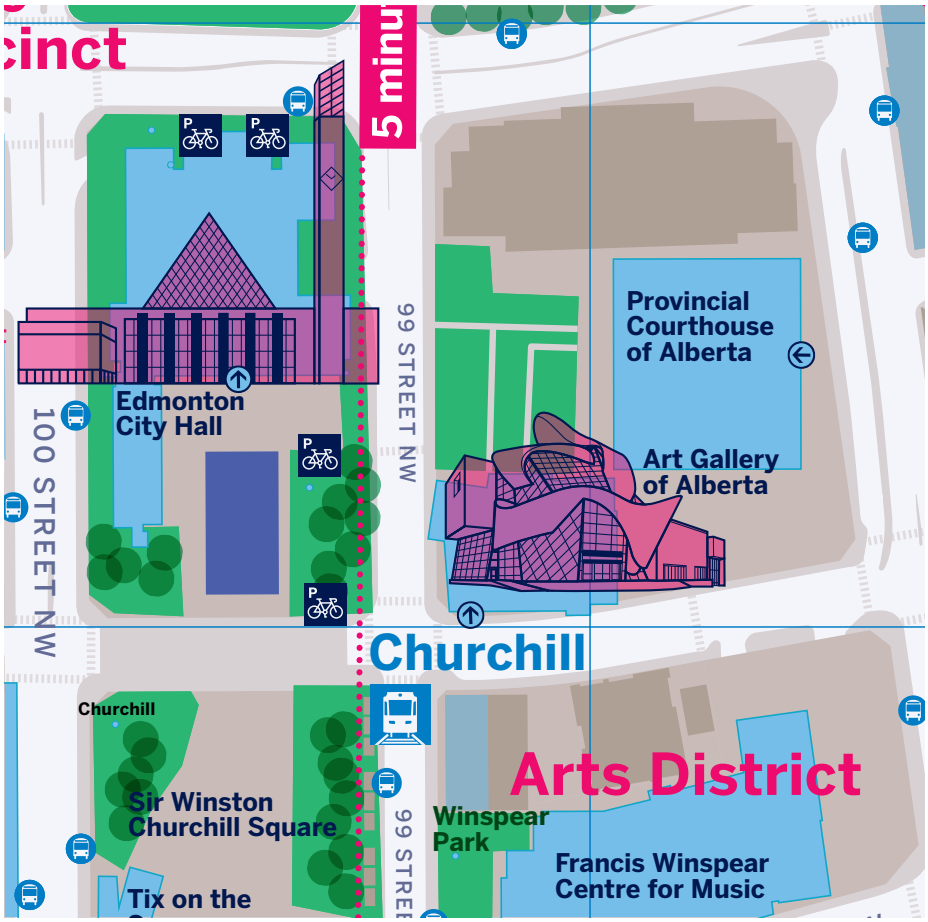
3D landmarks are an effective tool for creating maps that are easy to understand and use.

These iconic buildings serve as wayfinding aids as well as adding interest. They create a point of reference between the two dimensional map and the real world.

Further design development of these illustrations would include considering the 'best view' angle for buildings to maximise their recognition and the level of graphic detailing that suits the map style and city identity.



Art Gallery of Alberta



4.2 Design development

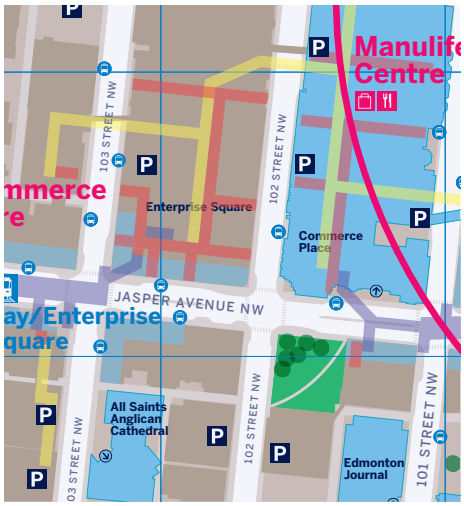
4.2.7 The Pedway

Showing multiple levels on the map leads to an overloaded map which is difficult to understand without detailed explanation.

The approach taken was to consolidate lines into a single representation to simplify the Pedway down to the most pertinent information.

The maps opposite show the development process which led to a preferred prototype solution (highlighted).

Further development work is required to arrive at a long term solution that complements a parallel City initiative to prepare a Pedway Plan.



Multilevel coloured pedway

Single line pedway

Single line pedway with entrances highlighted

Pedway entrances only

Labelled pedway entrances

Labelled pedway entrances with opening times

4.3 System identity

The City has confirmed that the Walk Edmonton identity should mark the street signs. This ensures that the information both communicates that it is information for walking but also promotes the wider Walk Edmonton behavioural change campaign.

Edmonton's corporate brand is also required to provide trust in the integrity and promoter of the information. Edmonton is revising it's brand guidelines and will need to expand them to incorporate the wayfinding designs which will quickly become recognized as part of the identity of the City and the City Council.

Some development will be required concerning the visual identity of the sign family. Observations from the prototype suggest the Edmonton logo is too low and liable to be covered by grit and snow at different times of year.

5.1 Cost estimation

An indicative cost estimate for a corporate wayfinding project was prepared for the outline report in September 2013 this has been reviewed and revised reflecting further estimation. All figures must be assumed to be indicative and subject to review and revision as a result of future work.

The revised estimate includes the following assumptions:

- Two possible approaches to master map development and artwork production have been provided for broad comparison. These represent a Living Map system as used in the City of Vancouver and a manual/ static production using Adobe Illustrator. The quality issues concerning different map options are discussed above at 3.2.2. The comparison indicates that while less expensive to set up, the static option is more expensive to publish and hence to update.
- The cost of master map development is subject to decisions on the areas to be prepared at the most detailed vicinity map scale. These areas would include planned BRZ and other outer centres determined a priority as well as the Downtown core.
- The Downtown and Citywide roll out make assumptions about the average cost of the sign family. This is highly variable and subject to detailed design. Allowances have been made based on previous projects
- Broad budget allowances have been included for interface projects. No design work has been conducted to inform these costs and they must be assumed to be for budget purposes only and subject to quantification and unit cost review
- The ETS project costs are a very significant element of the program budget. These represent $5.5m over a 10 year period.

5.2 Business case

A report, the 'Wayfinding Business Case' v.3, May 2014 was produced in parallel to this strategy to present the case for investing in a systematic approach. The business case considers several factors that influence this decision:

- **Strategic plan** - The alignment between the outcomes of consistent wayfinding and City strategy and plans
- **Precedent** - Examples and experience from other cities that indicate benefits and objectives for Edmonton
- **Prototype** - The results of pre and post-installation public evaluation of attitudes and behaviour related to test wayfinding designs in the Downtown during April/May 2014
- **Opportunity** - Underscoring the timeliness of the ability to coordinate imminent built and transportation developments (RAM and Rexall Arena), to inform separate City wayfinding initiatives such as the RVP and Pedway and to develop geospatial tools at a time where there is a need to consider the City's digital strategy.

The Business Case concludes that the potential investment is more than balanced by the benefits of a seamless system.

Budget breakdown

Corporate Supportive Projects		Digital Map (High End)	Static Map (High End)
Detailed strategy	Wayfinding project definition & benefits	Complete	
Downtown prototype	Test designs and applications	Complete	
Prototype evaluation	Independent review by City	Complete	
Map mastering (Static option)	Create Manual mastermap artwork, assuming 15 sq km vicinity scale + 100 sq Km neighbourhood scale + regional overview		$145,000
Map mastering (Digital option)	Create Manual mastermap artwork, assuming 15 sq km vicinity scale + 100 sq Km neighbourhood scale + regional overview	$250,000	
Map system set up	Assumes proprietary Living Map carto-engine for outputting geo-data as artworks	$50,000	
System Manual	Planning and Graphic Design Standards	$50,000	$50,000
Sign product specifications	Sign Specs and Shop Drawings	$40,000	$40,000
Neighbourhood prototype	Test Designs and applications if required (assumes minimal infrastructure	$10,000	$10,000
Smartphone app report	Technical Advice for App project	$10,000	$10,000
Modular smartphone app	Assumes City primes private funding only	$50,000	$50,000
Create app API + web viewer	Source for online map uses	$8,000	$8,000
Pedway plan	Develop a plan for signage in pedway system	$25,000	$25,000
	Total Corporate Supportive Projects	**$493,000**	**$338,000**
Development & Rollout**			
Artworks for signs (from static)	Assumes 4/maps/sign graphic design (i.e. no Living Map) + directional elements and layouts x 220 signs		$836,000
Artworks for signs (from digital)	Assumes 4/maps/sign from Living Map + directional elements and layouts x 220 signs	$200,000	
Downtown rollout	Assumes 30 Signs/sq km x 2.3 sq km @$10-15 k per unit installed. Unit cost dependant on materials and technical requirements	$1,035,000	$1,035,000
City wide rollout*	Assumes 15 signs / sq km x 10 sq km @7-10,000 per unit installed.	$1,500,000	$1,500,000
Pedway + RVP interfaces	Assumes 50 RVP top of bank signs @ 5,000 per sign + 50 entry point applications at Pedway @ 1,000 per entrance	$300,000	$300,000
Parking arrival	Assumes 4 signs at each of the 4 downtown garages + 20 signs at other major lots tbc @$5000 per sign	$180,000	$180,000
Cycling map	Design stylesheet for mastermap, collate data and design paper map.	$10,000	$10,000
Transit projects	Transit estimates for installation of wayfinding neighbourhood area maps x 3 at each existing LRT / Transit Station. Does not include new Valley Line LRT Stations	$5,500,000	$5,500,000
Pedway signage system	Work to develop a specific plan for the pedway system is in the developmental stage. Based on the existing 19 map pedestals / 40 intersections a base estimate is $500,000.	$500,000	$500,000
	Total Development & Rollout	**$9,225,000**	**$9,861,000**
	Total all stages	**$9,718,000**	**$10,199,000**

*Citywide roll-out includes BRZ (outside of downtown, Oliver, the Quarters, & TOD areas external to Transit Stations
**Does not include rollout to other possible areas still being defined - i.e. Blatchford, Galleria, future LRT

5.3 Project plan

The project plan assumes a phased approach with central supporting projects being commissioned as foundations to the other phases. With the System Manuals and master map in place the City can develop according to available budgets and respond to opportunity. An outline project plan is proposed opposite based on best-case scenarios for decision-making.

A natural priority for street signage implementation is the Downtown core which represents the densest area of attractions, the transit hub and a central arrival point for visitors.

Potential priorities are then recommended:

- Major developments (RAM, Rexall Arena) - agreement to wayfinding plans for major development and installation of elements in time for opening
- Pedway interfaces (subject to Pedway Plan) - implementation of public realm side elements to support use and navigation of the Pedway
- Modular wayfinding app - negotiating a public-private contract to build a City wayfinding app
- Transit system integration - as LRT project time lines allow, start a joint initiative to install wayfinding at LRT stations and major bus exchanges.
- Investigation of options to provide master map content in ETS schedules and on its online journey planner (not shown opposite)
- Other neighbourhoods - implementation in other neighbourhoods according to an agreed plan. This might highlight areas of major attraction, development priority, BRZ activity or funding opportunity
- City website/paper map integration - replacement of city's wayfinding web/paper maps with maps created from the master map system.
- Top of Bank interface for the River Valley - liaison to establish mapping for the implementation of the RVP wayfinding project and design of a walking sign as an interface between the River Valley and city streets.
- Cycling information (map and shared path directions) - creation of a new Edmonton cycling map from the master map and application of System
- Development of system to create a cycling wayfinding standard for routes
- Guide signs and arrival information at parkades - developing driver guide signage by applying the System Manual and a project to install walking signage at parking facilities

The phases of work associated with this list of projects could be altered to reflect funding availability and partner projects to create a seamless system.

While the projects could be phased over several years, there will be a tipping point before which new information remains incomplete and hence the beneficial effects will be reduced.

It must also be accepted that major coordination comes at a cost of some redundancy and inconsistency for a period of time.

Outline project plan

	2014	2015	2016	2017	2018 onwards
Corporate Supporting Projects					
Detailed strategy	Complete				
Downtown prototype	Complete				
Prototype evaluation	Complete				
Map mastering					
Map system set-up					
System Manual					
Neighbourhood prototype					
Smartphone app report					
Modular smartphone app					
Create API / Web viewer					
Sign product specifications					
Procure manufacturer					
Pedway plan					
Development & Rollout**					
Downtown rollout					
Citywide rollout*					
Artworks for signs					
Pedway + RVP interfaces					
Parking arrival					
Cycling map					
Pedway rollout					
Bus transit centres & LRT stations					

* Citywide roll-out includes BRZ (outside of downtown, Oliver, the Quarters, & TOD areas external to Transit Stations
**Does not include rollout to other possible areas still be defined - i.e. Batchford, Galleria, Future LRT.

5.4 Governance

The diagram (right) suggests a simplified organizational view of the wayfinding programme. It is recommended that a Leadership Group representing the key internal interests provides executive control of the overall plan and the System Manuals. A potentially new role of Wayfinding System Manager could be created to report progress and issues to this group for decision. Only the Leadership Group could decide on project plan priorities or substantial changes to the System Manuals.

The project development process could be advised in the initial stages, by a retainer contract with one or more specialist consultants focused particularly on geospatial mastermap development and the application of design standards to projects. Depending on the scale of the project it may be efficient to consider a framework contract for consultancy skills.

The Wayfinding System Manager would operate with the authority of the Leadership Group to plan, liaise and coordinate delivery of specific implementation projects.

Various departmental responsibilities would be directly involved in a collaborative effort to produce projects. These groups would also, from time to time, work with other groups under the direction of the Wayfinding System Manager to achieve interfaces with other systems or ensure local public involvement as required.

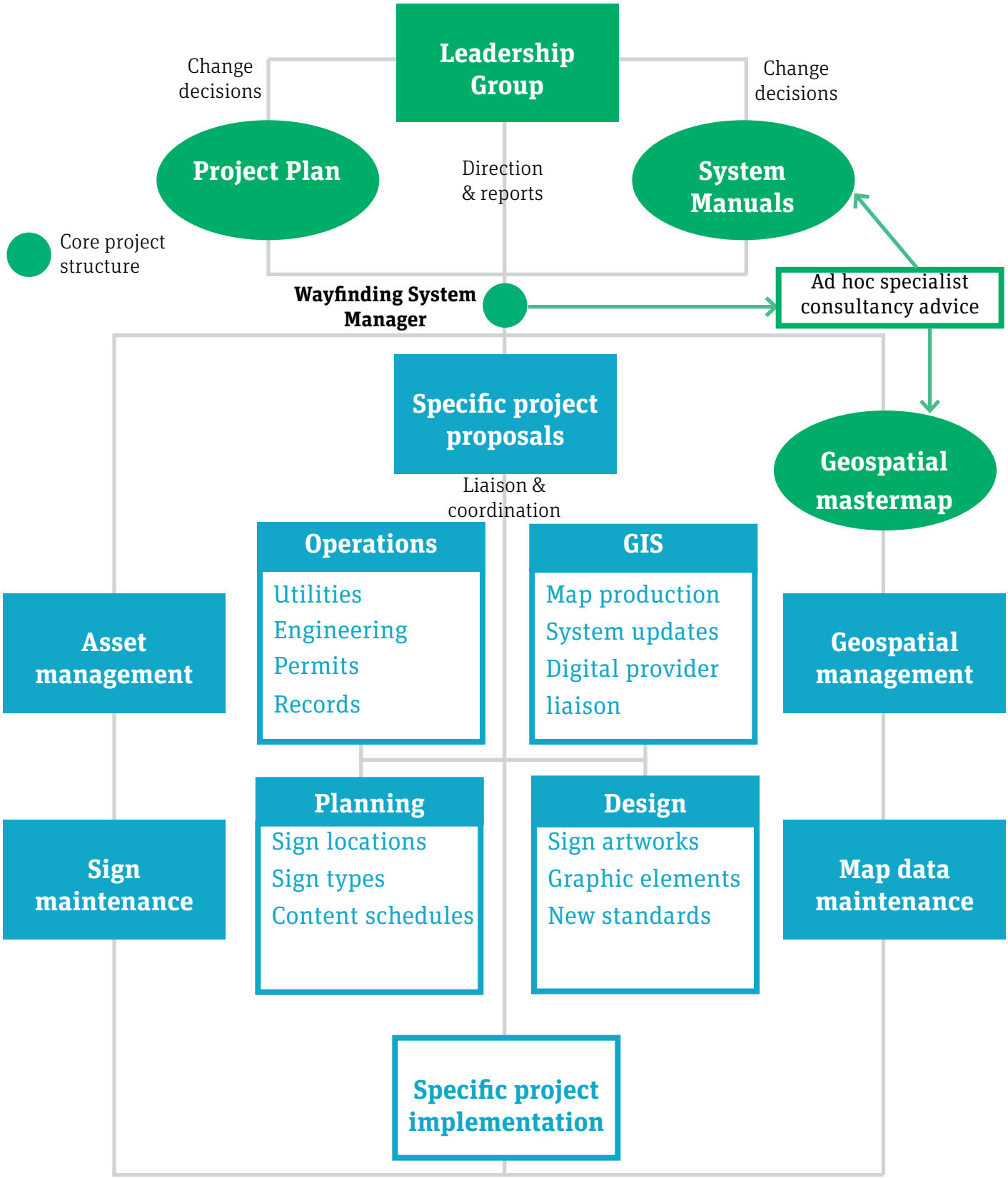
The departmental responsibilities may already exist with the processes and capacity to take on wayfinding projects. For instance it is expected that the Transportation Operations team have all the necessary processes to manage sign installation. Other departments may need skill development, for instance to plan wayfinding according, while others may need to increase capacity or consider external assistance for specific tasks such as artwork production of sign faces, poster maps and digital applications. The decision on how resources are provided would depend on the type and duration of tasks required at the departmental level. However costs to the programme would be expected to be reported via the Wayfinding System Manager.

Cross-departmental working will be essential as project delivery of, for instance, street map signs, requires several sequential steps. These include; location planning, site verification, content generation (map production, directional schedules), artwork production, sign fabrication, permitting and installation.

Completed projects should be reviewed for quality and any change requirements reported back via the Wayfinding System Manager for inclusion in periodic reviews of the Project Plan and/or System Manuals. The review would include both the physical delivery but also the background map system.

Assuming a geospatial system provider is retained, the Wayfinding System Manager may work directly or via a department to review technology and design developments.

Simplified model of system organization



5.5 External Partnering

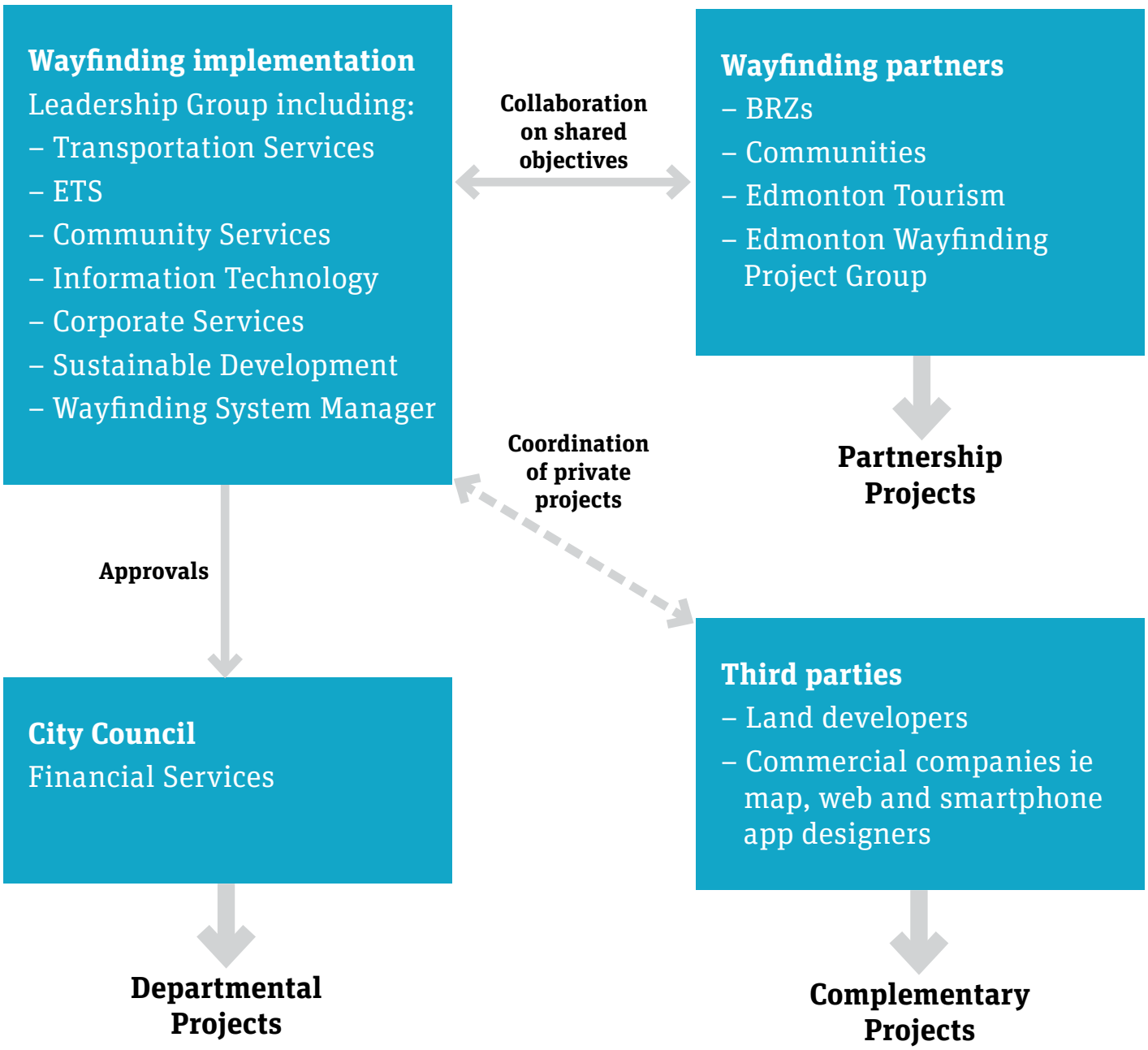
To achieve a seamless approach from central resources, it will be necessary to communicate internally and to establish partnerships that create wider application than the City could manage alone.

Some partnerships already exist such as with BRZs and the Edmonton Wayfinding Project Group. These could be developed further by collaborating to advance wayfinding and information projects of mutual benefit that make use of the City system and produce useful local information in an efficiently and consistent way. Examples could include themed promotional information for events using the City master map as a consistent base.

Other partnerships may become possible because of the wayfinding assets. An obvious example, discussed at 3.8 above, is to enable land developers to extend the street signage using the System Manuals and so integrate new built areas into a legible city.

Other partners may arise as a result of the City choosing to publish mapping digitally. Cartographers and website or smartphone app developers could use the map potentially under licence, to create new ways to access and use City mapping for new residents, tourists and other markets. The City would adopt a coordinating role in these cases, including vetting possible uses, creating data sharing agreements and promoting possible uses for development.

The City's capacity for and comfort with developing partnerships will be a controlling factor on the speed and scale of implementation. With the Corporate Supportive Projects of the System Manuals and Master Map System in place, the City could maintain it's own implementation programme and consider new opportunities, revenue earning potential or sponsorship as they arise.


Wayfinding implementation
Leadership Group including:
– Transportation Services
– ETS
– Community Services
– Information Technology
– Corporate Services
– Sustainable Development
– Wayfinding System Manager
Collaboration on shared objectives
Wayfinding partners
– BRZs
– Communities
– Edmonton Tourism
– Edmonton Wayfinding Project Group
Partnership Projects
Coordination of private projects
Approvals
City Council
Financial Services
Third parties
– Land developers
– Commercial companies ie map, web and smartphone app designers
Departmental Projects
Complementary Projects

5.6 Maintenance and operations

Implementation of the wayfinding strategy will result from developing and institutionalizing the Corporate Supportive Projects as normal business. As discussed above, this will involve creating design standards, coordinating the City's geospatial strategy, developing projects and partnership opportunities and attending to normal planning and permitting processes for street installations. The strategy will create a significant number of new signs with information unique to the location. It will also create a range of other products including print and online tools that will require updating more or less frequently.

The scale of the management and coordination role suggests that there will be an immediate and long-term role for a senior full-time equivalent which has been described at 5.4 as the Wayfinding System Manager. This role may also be supported by ad hoc specialist consultancy contracts in the build-up process.

The expectation of the wayfinding system is to generate all applications from the elements and rules comprised in the System Manuals and geospatial system. These would be owned and maintained by the City. Applications created in this way could however have many owners.

As the capacity to fabricate these types of signs does not currently exist in the City, contracts would be required to create the sign specifications and subsequently to fabricate and install them. The fabrication and installation may be let as a single long-term contract with one supplier, or as a series of contracts linked to specific phases of implementation with a range of suppliers. Preparation of a **procurement strategy** is recommended to consider the most efficient way to buy and maintain signage.

It would also be possible for developers and BRZ's to procure their own signs using the centrally held standards and geospatial assets. The City's role would be to permit or licence use of the System Manuals and access to the geospatial system, while the partner agencies would commit to adhere to the standards and work with the City to ensure integration.

All signs should be recorded in an **asset management database** held by the City. If geo-located and uniquely coded, the signs could become a layer in the geospatial system. This would allow each sign location to be matched with the specific 'ahead up' maps and content allowing planned updates in an area or specifications for individual replacement, in the event of an incident.

Having all signs, irrespective of owner, entered into the City asset management database would also allow City Operations staff to know who is responsible for maintenance and upkeep. This would be important as public reports of damage or inaccuracy would likely be directed to the City in the first instance. It would also allow any necessary cleaning or technical upkeep (for instance if digital panels are used in the future) to be monitored. Any such upkeep required for City signs would entail the need for a separate maintenance contract as part of the overall system procurement strategy.

Appendix

Directional & Addressing Rationale - Prototype

Directional & Addressing Rationale – Prototype
A naming hierarchy has yet to be agreed for Edmonton so the prototype is an opportunity to test initial recommendations.

For a permanent system, a mastermap of the city will contain the agreed names and hierarchy from which all wayfinding content is derived. The prototype is an opportunity to begin that process.

Why do we need an agreed hierarchy?
One of the principles in wayfinding is to help people learn by breaking down the decisions into easily digestible stepping stones.

Stepping stones form a reliable and consistent hierarchy that allow locations to adopt a clear address, and directional information to be consistently defined and implemented.

Stepping stones also allow for progressive disclosure of information, rather than trying to explain every location or district from every point in the system.

A consistent system creates a memorable structure for the user.

A natural order already exists in most cities and towns. Edmonton already has agreed Neighbourhoods for example, which can be considered large stepping stones or containers for smaller areas.

As the grain becomes finer, the areas, districts and zones within the Neighbourhoods become less easily defined.

A hierarchy is needed for the wayfinding system specifically so that:

— Signs can be given an address to help locate the user
— Directional content can be managed logically and not overload the signs. It's critical that the system is connected and there is often the temptation to 'fill up' a sign with directions just because there is room. Directional information needs to be seen as part of a network that supports a continuous route until the destination is reached.

Prototype hierarchy
The stepping stones suggested are:

Neighbourhoods
Clearly defined boundaries, such as Oliver and Downtown. Neighbourhoods are consistently available as stepping stones and therefore reliable for both directional information and addressing signs.

District / Area level
Less clear and vary between a linear and more easily defined area such as 104th Street or Jasper Avenue, and more loose areas such as Arts District and Warehouse District.

These areas sometimes have a discrete name (Arts District) or borrow the street name (104th Street / 4th Street).

Although a District / Area can be directed towards, they do not have the consistent availability in the way Neighbourhoods do, and therefore aren't always available to address a sign location.

Landmark / Street level
Landmark buildings such as Manulife Place and Art Gallery of Alberta are landmark destinations and can be easily directed towards.

In terms of addressing a sign, it often makes sense to use the landmark name as the first line in the sign address. This promotes landmark names in the system and make the wayfinding more memorable.

When more than one landmark name is an option or no landmark is available, the street intersection is the most reliable default option to use as a sign address.

For the reasons set out above, the most consistent structure for addressing a sign is recommended as:

— Landmark / Street Intersection
— Neighbourhood

This means that District / Area names are restricted to directional and map based information.

An example of the potential confusion if using Neighbourhood and District names interchangeably on sign addressing would be:

— Art Gallery of Alberta / **Arts District**
— Shaw Conference Centre / **Downtown**

Because a District is not available at the Shaw Conference Centre, only Downtown is the logical choice. The two sign addresses may make sense locally, but as a system they are inconsistent and therefore not recommended.

Directions
In terms of directing towards something, it's proposed that Edmonton uses the following rule of thumb:

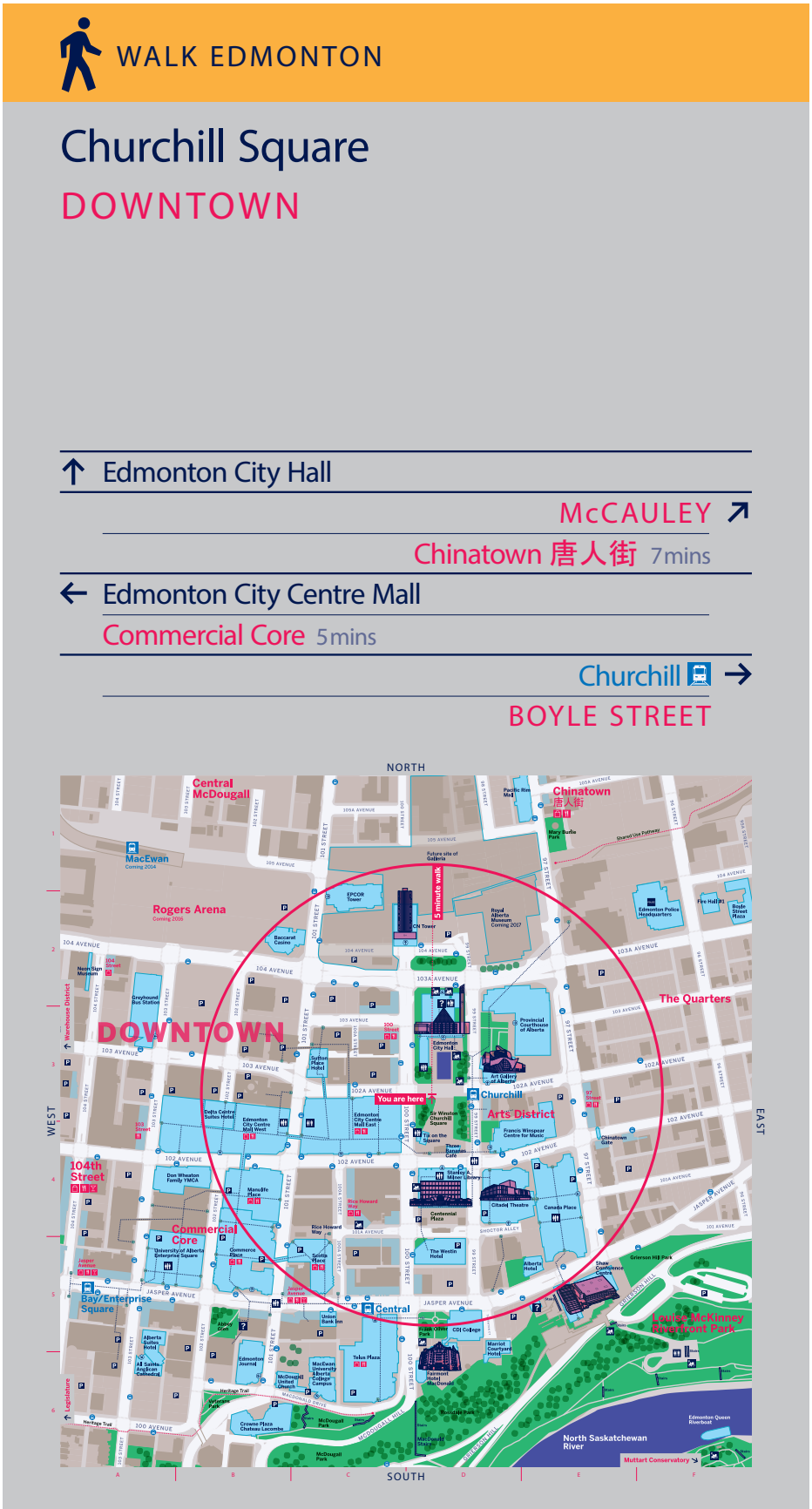
— Adjacent Neighbourhood where not more than 2–3 blocks
— Nearby District / Area where not more than 2–3 blocks
— Nearby landmark destinations when not more than 5 minutes walk
— Nearest LRT / Rail station

As stated, this is a rule of thumb, and choices will be affected by:

— Sign capacity
— Density of options
— Weighting. For example, Sir Winston Churchill Square may be considered more important than Francis Winspear Centre for Music as the square is a core public meeting place and centre for events and festivals.

The process of selecting directional information is therefore an iterative one, usually starting with everything that could be included, followed by fine tuning to the final content as a result of needs at other locations and sign capacity.

Prototype content
The prototype content follows these initial recommendations but is necessarily restricted to a reduced network.



Directional and addressing hierarchy applied to a prototype sign

applied_