

# **MONTRÉAL** **SMART AND DIGITAL CITY**

2014-2017 Montréal Strategy

Montréal 



**MONTRÉAL INTENDS TO BECOME  
AN INTERNATIONALLY RECOGNIZED LEADER  
AMONG SMART AND DIGITAL CITIES IN 2017.**

**AS PART OF THIS PROCESS,  
THE CITY AND THE COMMUNITY  
PLAN TO INVEST IN INNOVATIVE,  
GROWTH-GENERATING PROJECTS.**

**THE 2014-2017 MONTRÉAL  
STRATEGY SETS THE STAGE  
FOR MEETING THIS GOAL.**

**“MONTRÉAL, SMART AND DIGITAL CITY”  
IS AN AMBITIOUS PROJECT  
THAT BUILDS ON OUR COLLECTIVE  
INTELLIGENCE TO FORGE A DISTINCTIVE  
MONTRÉAL-BASED MODEL.**

**THE INSTITUTIONAL AND PRIVATE SECTORS  
HAVE JOINED WITH CITY WORKERS  
AND MONTRÉAL CITIZENS IN AN ONGOING  
DIALOGUE, PLAYING ACTIVE ROLES  
IN FORMULATING THIS STRATEGY.  
MONTRÉAL, SMART AND INTELLIGENT CITY,  
WILL BE BUILT BY OUR CITIZENS,  
FOR OUR CITIZENS.”**

Mr. Denis Coderre,  
Mayor of Montréal.

**“ULTIMATELY, A SMART AND DIGITAL CITY MEANS **BETTER SERVICES FOR CITIZENS**, A UNIVERSALLY HIGHER STANDARD OF LIVING AND HARNESSING OUR **METROPOLIS’S RESOURCES** TO ENSURE ITS DEVELOPMENT IN LINE WITH THE POPULATION’S NEEDS. MONTRÉAL WILL BE A CITY THAT LISTENS TO ITS CONSTITUENTS AND THEY WILL BE AGENTS OF CHANGE.”**

Mr. Harout Chitilian,  
Vice Chair of the Executive Committee,  
responsible for the Smart City Initiative.

# BY AND FOR CITIZENS



## Vision

**Collecting**  
**Communicating**  
**Coordinating**  
**Collaborating**  
+  
Establishment of the  
Bureau de la Ville  
intelligente et  
numérique (BVIN)



## Listening

**Consulting:**  
Citizens  
City workers  
Community  
International  
models

**Identifying:**  
Needs, issues  
and priorities



## Strategic Orientations

**Defining:**  
Criteria  
Orientations

**Seeking approval:**  
From  
decision-making  
bodies



## Action Plan

**Prioritizing:**  
Short-term  
projects  
Major projects

**Seeking approval:**  
From  
decision-making  
bodies



## Implementation and Follow-Up

**Deploying:**  
Initiatives,  
ongoing review and  
key performance  
indicators

Spring-Summer

Oct. - Nov.  
2014

Nov. - Dec.  
2014

March 2015

2015 →

Ongoing dialogue with citizens

2

# LISTENING



CAUSERIE  
CITOYENNE

Aujourd'hui

MONTRÉAL  
VILLE  
INTELLIGENTE  
ET  
NUMÉRIQUE

Ce dimanche,  
dans le solarium,  
à partir de 13h30.

Montréal

des universités  
les parents  
les parents  
le comité  
Collaborer  
avec les  
clubs entre  
les universités  
Bonne d'info  
par la municipalité

# 2

## MULTIPLE CHANNELS



Listening has made it possible to:

### Analysis of the international scene

7 international case studies

Eindhoven, Lyon, Barcelona, Toronto, Columbus, New York, Arlington

- › Define a strategic reference framework
- › Identify international best practices

### Data analysis

1,033,345 calls and 40,000 emails to the 311 service

(year: 2013)

7,601 people responded to 4 surveys

- › Identify and prioritize citizens' key concerns
- › Prioritize focus areas

### Consultations

190 expert participants in 2 local co-design activities

203 participants in 5 town hall meetings at 5 libraries

- › Identify and prioritize citizens' key concerns
- › Prioritize focus areas
- › Validate a project analysis matrix



# ANALYSIS OF THE INTERNATIONAL SCENE



Summary of Main Strategic Frameworks Studied

## Main Focus Areas

Urban  
mobility

Direct services  
to citizens

Way of life

Democratic  
life

Sustainable  
development

Economic  
development

## Structural Components

High-speed  
telecommunication services

Accessibility, availability  
and use of open data

Open, interoperable  
technological architecture



# SEVEN INTERNATIONAL CASE STUDIES



Examples of Projects Observed

Focus Areas and Structural Components	City	Examples of High-Potential Projects
Way of life	New York City Eindhoven Barcelona	<ul style="list-style-type: none"><li>› Hudson Yard Project, new neighbourhood (architecture, parks, arts, culture).</li><li>› Brainport Health Innovation, healthcare platform</li><li>› 22@Barcelona, facilitates use of public space to make tests.</li></ul>
Direct services to citizens	New York City Arlington	<ul style="list-style-type: none"><li>› City 24/7, one-stop platform integrating information from government programs, local businesses and citizens</li><li>› Emergency Communications Center, coordinated regional emergency respond.</li></ul>
Economic development	Columbus Eindhoven	<ul style="list-style-type: none"><li>› TechColumbus, , hub for technology entrepreneurs.</li><li>› Design Connection Brainport, design consortium.</li></ul>
Sustainable development	New York City	<ul style="list-style-type: none"><li>› LED traffic signals and streetlights, with conversion of 250,000 street lamps to LED use.</li></ul>
Telecommunication services	Toronto	<ul style="list-style-type: none"><li>› Waterfront, redevelopment of Lake Ontario shoreline and ultra-high speed Internet access.</li></ul>
Urban mobility	Lyon	<ul style="list-style-type: none"><li>› Optimod'Lyon, integrated platform for innovation on multimodal urban mobility</li></ul>



# MONTREALERS' PRIORITIES



## Prioritized Focus Areas

## Citizens' Primary Concerns

## Corroborated by

**Urban mobility**

**Difficult to get around**

**Priority #1: Web and phone surveys**

**Direct services to citizens**

**Inadequate supply of direct digital services to citizens.**

**Priority #3: SOM, Web and phone surveys**

**Way of life**

**Virtual absence of physical or virtual platforms to talk about, experiment with, test or learn about solutions to urban issues.**

**Consistently brought up in all town meetings and co-design activities**

**Democratic life**

**Access to democratic life issues. Culture of transparency and accountability must be enhanced.**

**Priorities #1 and #2: SOM and intercept surveys**

**Economic development**

**Support for wealth and job creation, high-potential future sectors and the community's economic momentum.**

**Only 18% of participants thought the economy has had a positive impact on their quality of life**

2

techno  
MONTREAL

# KEY FORCES IN INNOVATION





# MONTREAL'S INNOVATION ASSETS



10  
—  
Living Labs

\$21 B  
—  
Annual sales by technology firms

5,000  
—  
IT firms

TOP 21  
—  
2014 Intelligent Community Forum

92,000  
—  
IT jobs

## Innovative Montréal

8  
—  
Industrial clusters

11  
—  
Academic institutions

750  
—  
Free Wi-Fi hotspots

171,000  
—  
University students

150  
—  
Research centres

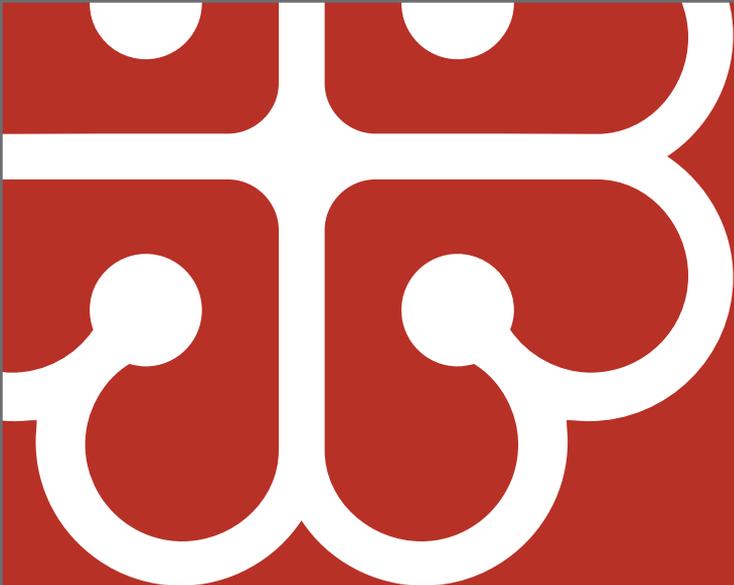
1  
—  
Fab Lab

10  
—  
Business accelerators

TOP 10  
—  
2013 UBM'S Future Cities

5,120  
—  
Self-service bicycles

40,000  
—  
Aerospace jobs



**3**

**STRATEGIC  
ORIENTATIONS**



# **MONTRÉAL**

## **SMART AND DIGITAL CITY**

**DEVISING AND DEVELOPING AN OUTSTANDING  
QUALITY OF LIFE AND A PROSPEROUS  
ECONOMY WITH AND FOR CITIZENS  
THROUGH COLLABORATIVE INNOVATION  
PROJECTS, STATE-OF-THE-ART TECHNOLOGY  
AND A BOLD NEW APPROACH, COMBINED  
WITH MONTRÉAL'S TRADEMARK CREATIVITY.**

# 3

# MONTREAL'S STRATEGIC FRAMEWORK

Accelerate

Transform

## 5 Focus Areas

<b>Economic development</b>	Promote growth of a leading-edge sector by employing the smart city strategy as a catalyst for bringing the project to fruition and as an engine of economic development			
<b>Urban mobility</b>	<b>Direct services to citizens</b>	<b>Way of life</b>	<b>Democratic life</b>	
Optimize mobility throughout the island in real time	Increase the provision of direct digital services to citizens and businesses	Develop spaces supporting urban innovations and diminish the digital divide	Improve access to democratic life and bolster the culture of transparency and accountability	

## 4 Structural Components

<b>Telecommunications</b>	<b>Open data</b>	<b>Architecture</b>	<b>Community</b>	
Develop ultra high speed multiservice telecom infrastructure	Release and use prioritized open data	Create an open, interoperable technological architecture	Develop, in co-creation with the community, solutions to urban issues	

# 3

## STRATEGIC ORIENTATIONS

Structural Components

Telecommunications

1

Develop ultra high speed multiservice telecom infrastructure

› Give citizens free public Wi-Fi across the island



› Support access to ultra high speed last mile telecom services for homes and businesses



› Include telecom networks in city planning, particularly in the urban plan and project charters



# STRATEGIC ORIENTATIONS

Structural Components

Open Data

2

Release, study and use prioritized open data

- › Get the most value from open data prioritized under the strategy and develop apps facilitating the lives of citizens (such as a MTL SnowInfo App).



- › Encourage sharing and analysis of open data (from the boroughs, the urban agglomeration, the CMM and public/parapublic partners)

# 3

## STRATEGIC ORIENTATIONS

Structural Components

Architecture

3

Create an open, interoperable, technological architecture

› Define a technological architecture that will promote system decompartmentalization and data flow, including third parties



› Use the Three-Year Capital Program (3-YCP) to upgrade the city's IT infrastructure and permit better sharing of its data, especially with partners.



# STRATEGIC ORIENTATIONS

Structural Components

Community

4

Develop solutions to urban issues  
in co-creation with the community

- › Engage businesses, public institutions, universities and citizens in finding and testing solutions to daily problems.



# STRATEGIC ORIENTATIONS

Focus Areas

Urban Mobility

5

Optimize travel across the island in real time

› Collect, process and disseminate travel information in real time to:

- Improve the flow of all kinds of transportation (public transit, alternative, individual, intermodal and freight).
- Let people optimize their trips in real time by providing them with all useful information (public transit schedules, construction site locations, traffic and accident reports, detours, blockages, etc.)



# STRATEGIC ORIENTATIONS

Focus Areas

Direct Services to Citizens

6

**Increase the provision of direct digital services to citizens and businesses**

- › Increase the availability of digital municipal services (permits, taxes, 311, jobs, library schedules, etc.) to citizens and businesses:
  - Give citizens and businesses more freedom to use municipal services
  - Provide an integrated user experience to citizens who communicate digitally and non-digitally with the city.

# 3

## STRATEGIC ORIENTATIONS

Focus Areas

Way of Life

7

Develop spaces supporting urban innovations and diminish the digital divide

› Create “public innovation laboratories” enabling citizens and businesses to test new public services in their beta phases.



› Set up workshops to teach citizens about using these new apps

# 3

## STRATEGIC ORIENTATIONS

Focus Areas

Democratic Life

8

Improve access to democratic life and strengthen the culture of transparency and accountability

› Through new technologies, provide better access to all forums for public discussion, in terms of participation and information



› Improve distribution of the city's KPIs (budgets, financial statements, project monitoring, service level targets, etc.) and develop new tools for presenting this information



# STRATEGIC ORIENTATIONS

Focus Areas

Economic Development

9

**Support growth of a leading-edge sector using the smart city initiative as a catalyst for bringing the project to fruition and as an engine of economic development**

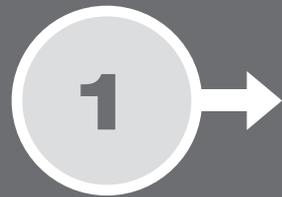
› Maximize the economic benefits generated by the smart city initiative:

- By stimulating local businesses
- By attracting top companies
- By promoting networking between the research, industrial, venture capital, institutional investor and start-up sectors to build on Montréal's existing expertise so it becomes a world leader.



**NEXT  
STEPS >**

# NEXT STEPS DEFINE AND ROLL OUT THE INITIATIVE



**Vision**

**Collecting**  
**Communicating**  
**Coordinating**  
**Collaborating**  
+  
Establishing the Bureau de la Ville intelligente et numérique (BVIN)



**Listening**

**Consulting:**  
Citizens  
City workers  
Community  
International models  
  
**Identifying:**  
Needs, issues  
and priorities



**Strategic Orientations**

**Defining:**  
Criteria  
Orientations  
  
**Seeking approval:**  
From the decision-making bodies



**Action Plan**

**Prioritizing:**  
Short-term projects  
Major projects  
  
**Seeking approval:**  
From the decision-making bodies



**Implementation and Follow-Up**

**Deploying:**  
Initiatives,  
ongoing review and  
key performance indicators

Spring-Summer

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Ongoing dialogue with citizens

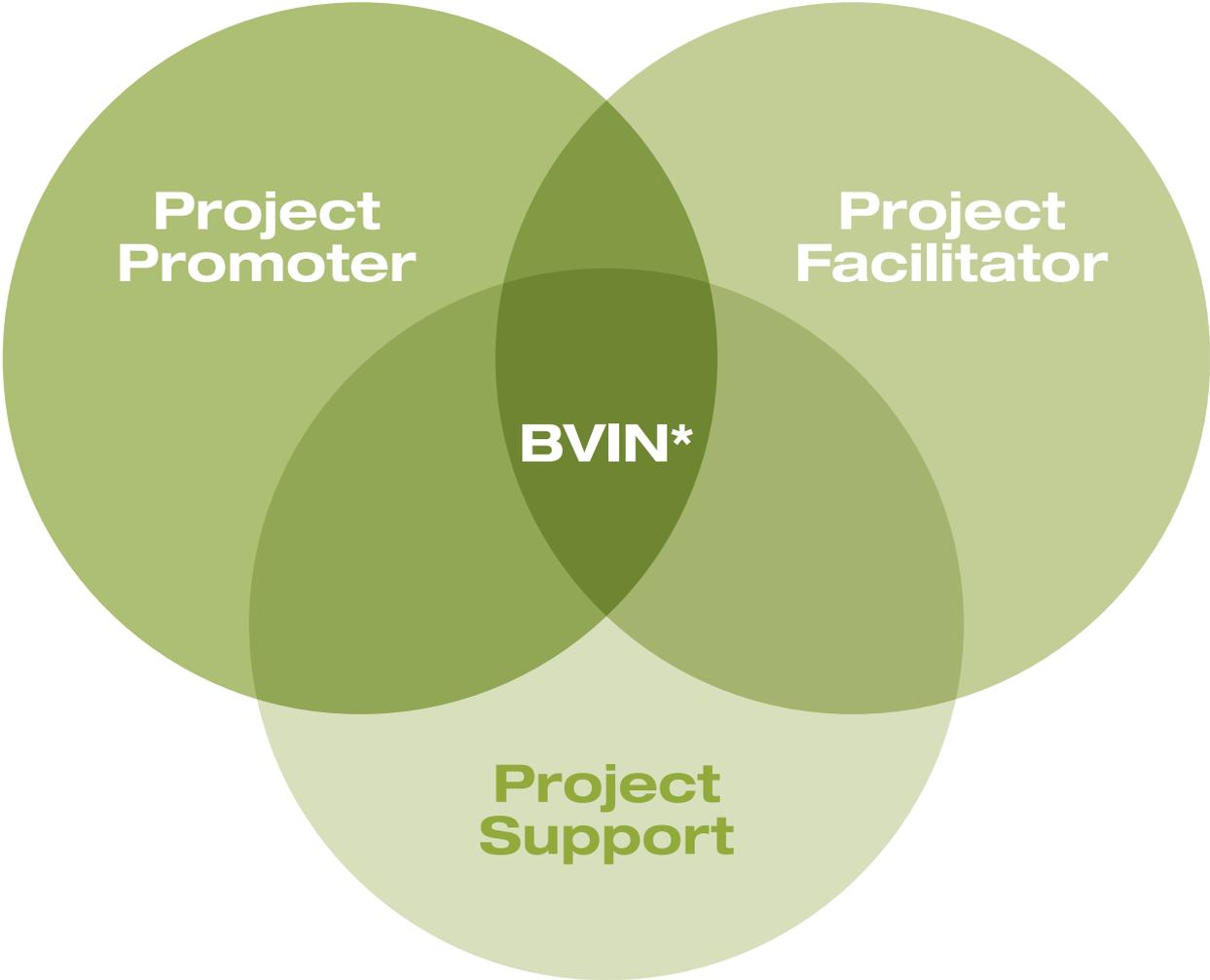


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**ACTION  
PLAN >**

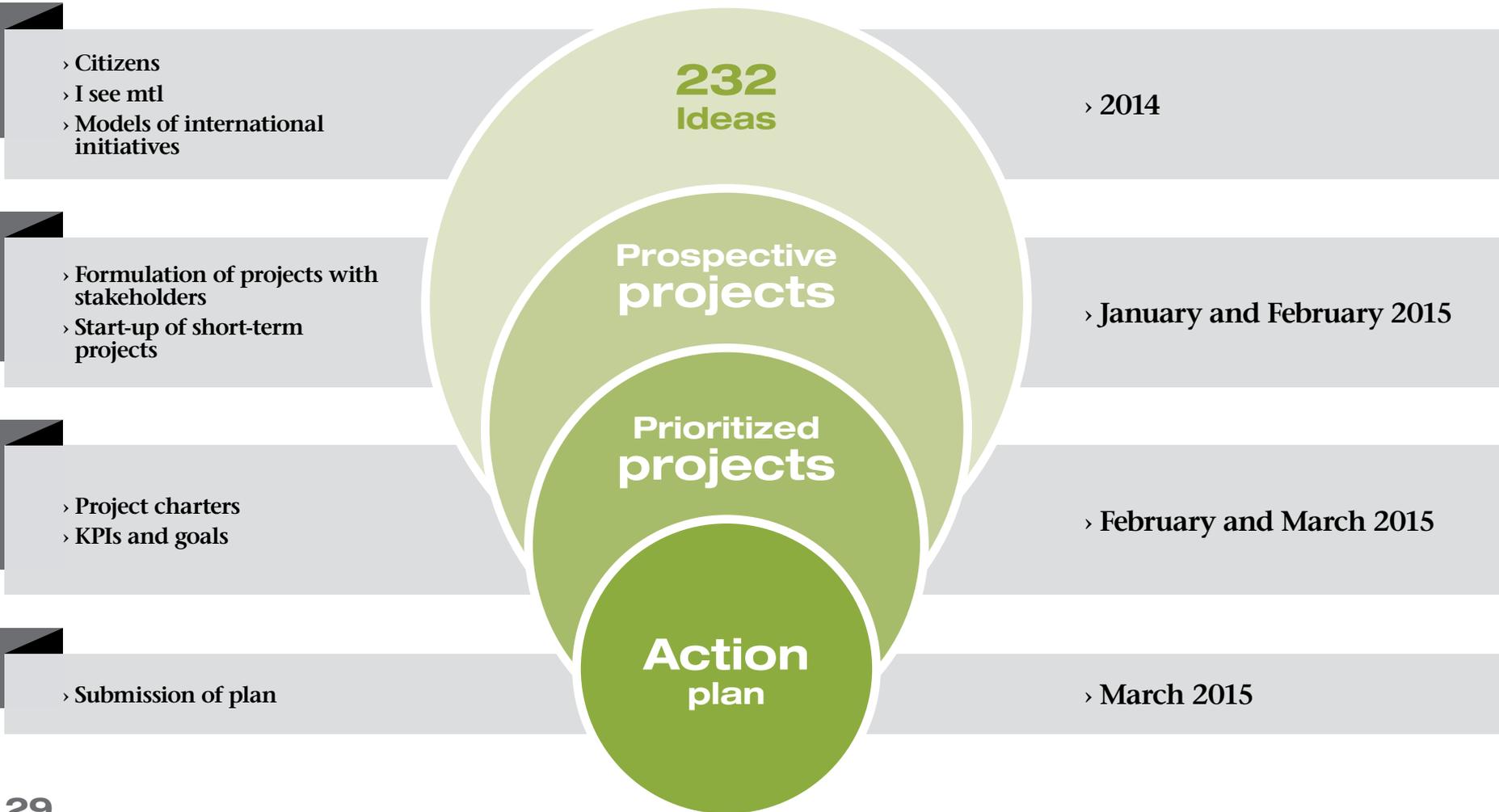
4

# MUNICIPAL LEADERSHIP IN PROJECTS



# 4

## FORMULATION OF ACTION PLAN

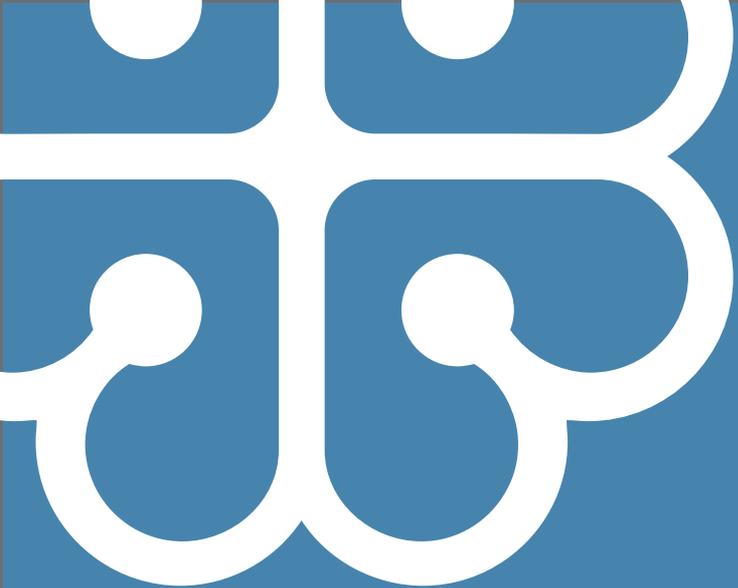


# 4

# PROJECT SELECTION

## Selection Criteria





5

**IMPLEMENTATION  
AND FOLLOW-UP >**

# 5

## MONITORING PROJECT PROGRESS



Project progress will be posted to the BVIN site



Needs	Prototyping	End-to-end prototyping	The service is officially launched
Benchmarking in conjunction with stakeholders	Modification of scope	Public trials	Feedback mechanisms
	Tests	Corrections	



**APPENDICES** >

# 2

## HEARD AT CONSULTATIONS



### Urban mobility

- › Issue #1 of the convergence activity.

### Democratic life

- › A city that makes citizens part of the public decision-making process.
- › A city that benefits from digital resources to increase its transparency.
- › A city that brings together citizens, elected officials and the decision-making process
- › Issue #2 of the convergence activity

### Direct services to citizens

- › A city that provides accessible and effective services.
- › An urban laboratory in which citizens can test new products and services.
- › Issue #3 of the convergence activity: hygiene, maintenance, garbage pickups and snow removal.

### Sustainable development

- › The sustainable development concept was mentioned as being notably absent during the convergence activity.

### Economic development

- › A city that develops services enabling small and medium-sized businesses to grow and create jobs.
- › A city that supports immigrants and job seekers.
- › A city that pools its resources more efficiently to generate collective wealth (fab labs and virtual spaces)

### Way of life

- › A city that explores new forms of creation involving citizen participation to improve the built environment, the cityscape, our local communities, etc.
- › A city that centralizes cultural information.
- › A city that uses digital applications to enhance and promote its heritage (architectural, historic, intangible, etc.).

# FACTS AND FIGURES



## Urban mobility

- › Priority #1 (Web survey<sup>1</sup>).
- › Priority #1 (phone survey<sup>2</sup>).
- › Priority #4 (SOM survey).
- › More ideas submitted.
- › Traffic congestion is a big problem (2010 AMT survey).

## Democratic life

- › Priorities #1 and #2 (survey by post-event intercept survey<sup>3</sup>).
- › Priorities #1 and #2 (SOM survey).
- › Satisfaction with information access services: 4.3/10 (2012 SOM<sup>5</sup>).
- › Perception of how city informs citizens about municipal project and services: 5.5/10 (2013 SOM<sup>4</sup>).

## Direct services to citizens

- › Priorities #3 and #4 (Web survey<sup>1</sup>).
- › Priorities #3 and #4 (phone survey<sup>2</sup>).
- › Priority #3 (SOM survey).
- › Service quality below expectations of 61% of constituents (2013 SOM<sup>4</sup>).
- › 32% of citizens have trouble finding information on the city's site (2013 SOM<sup>4</sup>).

## Sustainable development

- › 18% believe development of green spaces, recreational facilities and access to the shorelines and rivers should be a priority. (SOM 2013<sup>4</sup>).

## Economic development

- › 18% of citizens believe the evolution of economic growth and job growth have had a positive impact on their quality of life (2012 SOM<sup>5</sup>).
- › 70% of businesses believe the metropolitan area is not as competitive as it was 5 years ago (2012 CCMM survey).

## Way of life

- › Priority #4 (survey by post-event intercept survey).
- › City administration's priority: 30% say affordable housing (2013 SOM<sup>4</sup>).
- › City administration's priority: 21% says urban and land-use planning (2013 SOM<sup>4</sup>).

<sup>1</sup>Web survey of October 31, to November 12, 2014 on the city's site.

<sup>2</sup>Phone survey conducted from November 10 to 14, 2014.

<sup>3</sup>2014 Callosum intercept survey.

<sup>4</sup>2013 SOM survey conducted from November 25-29, 2013.

<sup>5</sup>2012 SOM survey conducted from November 14 to 21, 2012.

# 2

## SOURCES



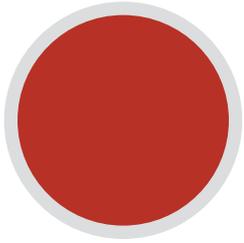
### Surveys

SOM survey .....	November 14-21, 2012
SOM survey .....	November 25-29, 2013
Web survey .....	October 31-November 12, 2014
Phone survey .....	November 10-14, 2014

### Consultations

#### In the following libraries:

Du Boisé .....	November 2, 2014
Mile End .....	November 8, 2014
Maison culturelle et communautaire .....	November 9, 2014
Frontenac .....	November 15, 2014
Marc-Favreau .....	November 16, 2014
Co-design Entretiens Jacques-Cartier .....	October 5, 2014
Co-design Centre Phi .....	November 23, 2014



# GLOSSARY

**3-YCP:** Three-year capital program. Planning of municipal investments over three years.

**ACCELERATOR:** Generally, a for-profit business operated by venture capital investors to generate returns on investments in client firms. Accelerators provide a range of services to businesses at the start of their growth, including financial support, advice on business, office space, development and additional services provided through partner organizations. *Source: Adapted from the Canada National Research Council*

**API:** Interface containing functions required for application development. *Source: Adapted from the Grand dictionnaire terminologique of the Office québécois de la langue française*

**CMM:** Community métropolitaine de Montréal

**CO-DESIGN:** Process of developing a typically innovative product or service involving the final user. *Source: Adapted from wikipedia.org*

**DIGITAL DIVIDE:** The digital divide is associated, in particular, with growing inequality of access to computing technology and the Internet, as well as disparity of income level, geographic location and ethnicity. *Source: Adapted from the Grand dictionnaire terminologique of the Office québécois de la langue française*

**DIGITAL LITERACY:** Set of reading/writing knowledge (or by extension, in IT) enabling a person to function effectively in society. *Source: Adapted from the Grand dictionnaire terminologique of the Office québécois de la langue française*

**FAB LABS:** A fab lab (from “fabrication laboratory”) is a site in which members of the public can use a host of tools, such as computer-controlled machine tools, to design and produce objects. *Source: Adapted from wikipedia.org*

**INCUBATOR:** Generally, an NPO that provides services similar to those of an accelerator, but tends to spend more time on the businesses. An incubator provides a broader range of services in terms of facilities and coaching services. Incubators are often sponsored by universities, colleges and economic development agencies. *Source: Adapted from the Canada National Research Council*

**INTEROPERABLE:** Ability of heterogeneous computer systems to work together, through the use of shared languages and protocols and to provide reciprocal access to their resources. *Source: Adapted from the Grand dictionnaire terminologique of the Office québécois de la langue française*

**LAST MILE:** Set of agents, operations and associated equipment used for a telecom network’s final distribution segments. *Source: Adapted from wikipedia.org*

**MULTIMODAL:** Movement of passengers or freight involving different successive modes of transportation. *Source: Adapted from the Grand dictionnaire terminologique of the Office québécois de la langue française*

**PROTOTYPING:** Prototyping is the process involved in producing a prototype. The prototype is an incomplete and not final model that could be the product or final object. *Source: Adapted from wikipedia.org*

**ULTRA-HIGH SPEED:** The ultra-high speed Internet service generally provided over fibre optic lines.