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CANADIAN URBAN FORUM
LE FORUM URBAIN DU CANADA

NEW MODELS FOR TOMORROW'S INFRASTRUCTURE
DE NOUVEAUX MODÈLES POUR L'INFRASTRUCTURE DE DEMAIN

VIDEOS AND PRESENTATIONS

SESSION SUMMARIES

UPDATED POSITION PAPER

CUF

OCTOBER 2013

Canadian Urban Forum New Models for Tomorrow's Infrastructure

June 18-19, 2013, University of Ottawa

More than 170 delegates attended the 2013 *Canadian Urban Forum* to compare experiences and discuss innovative solutions for getting urban infrastructure built at a time when the need far exceeds current budgets.

Officials from all three orders of government (including Ontario's Minister of Infrastructure, the Hon. Glen Murray, MPP; Calgary's Mayor, Naheed Nenshi; and Federal Reserve Bank of New York vice president, Dr. Andrew Haughwout), representatives from national and international infrastructure and business associations, members of the International Urban Fellows Association at Johns Hopkins' Institute for Policy Studies, academia, consultants and private corporations came together to share their experiences and knowledge.

Acknowledging that developing and maintaining infrastructure is a challenge common to communities around the world, the conference was also designed to provide input to the UN Habitat's 2014 World Urban Forum.

This report comprises: the Forum position paper authored by University of Ottawa's Centre on Governance and the Canadian Urban Institute (CUI) – revised to reflect input and commentary from the conference; a summary of the discussions; and links to videos and individual presentations.

The organizers of the Canadian Urban Forum are grateful for the generous support of corporations, professional associations (including collaboration with the International Urban Fellows Association at John Hopkins' Institute for Policy Studies and Sustainable Cities International), civil society organizations and municipal practitioners who helped make this conference possible.

Dr. Eric Champagne, Professor at the University of Ottawa's School of Political Studies, Assistant Director at the Centre on Governance, and CUI Board Member was the host and co-organizer of the forum. A number of students with the Centre assisted with summarizing the session outcomes. This publication and the position paper would not have been possible without the dedicated input of CUI's Research Associates Judy Farvolden and Nathan Valsangkar.

Conference Co Chairs John Farrow and Dr. Caroline Andrew

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Johns Hopkins Institute for Policy Studies

Sustainable Cities

Dr. Eric Champagne, Professor at the University of Ottawa's School of Political Studies, Assistant Director at the Centre on Governance, and CUI Board Member

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Position Paper: A Step Towards Sustainable Infrastructure
Executive Summary

The Forum presented four principles as an organizing concept to guide the discussion of long-term infrastructure sustainability: social equity, financial feasibility, environmental balance and global competitiveness. The participants were asked to consider what would contribute most to solutions. The key insights are summarized below:

• **Accurate data and objective analysis:** To ensure the financial feasibility of an infrastructure project that the serves the public interest well. Infrastructure investment decisions must be driven by evidence that needs will be met, not just be a response to the availability of funds. Comparing the life-cycle capital and operational costs and benefits of alternative development configurations is necessary for effective decisions. This requires good data collection and integrated strategic asset management models.

• **Location, Location, Location:** Public investments in infrastructure only create the full value and unlock development potential if access and adjacencies are carefully considered portfolios. Highly urban mixed use developments typically do the most to stimulate the economy. Investments made in Canadian downtowns yield good returns on investment, enable cities to attract and retain talent. Linking downtowns with the innovation capabilities at post-secondary and research institutions will contribute to the nation's global competitiveness.

• **Leverage Existing, Underutilized Assets:** Government and education facilities represent diverse infrastructure and land assets with shifting needs over time. Meaning these portfolios for redevelopment opportunities can generate sustainable sources of revenue, in support of the strategic goals of the organization. Organizations should plan to create and maintain the infrastructure they need, not the infrastructure they have.

• **Integrated thinking:** Mixed-use density, maximizes the financial feasibility of developments. Zoning by-laws, property taxes and development charges should be coordinated and tailored to help every development site reach its "highest and best use" in terms of social equity, environmental sustainability and financial returns. Social housing is a sector that particularly benefits from this feature.

• **Attract Institutional Investment:** Canadian pension funds are among the largest investors in infrastructure in the world, but only a small portion of that investment is made locally. To be attractive, projects must be of adequate size and provide returns that compete globally. Canadian government unions need to work to understand and reduce the barriers preventing pension funds from investing at home.

• **Engage the Private Sector:** Partnerships with the private sector, rather than simply outsourcing, enables the public sector to share the risks and benefits associated with infrastructure development. The private sector offers access to innovative project management and development practices, for a share of the future revenues. By sharing best practices, standards and guidance in the structuring of partnering agreements, governments build expertise in new approaches.

• **A National Strategy**, particularly in housing and transit infrastructure should be based on stable, long-term funding and a coherent vision that engages Canadians. Investment in infrastructure should be aligned with social, environmental and financial best interests. The funds earmarked in the federal budget of 2013 are a start, but local governments, which are at the forefront of delivering the majority of public infrastructure, need to have reliable funding that is aligned to their needs. Users benefiting from improved facilities and service will pay in taxes and user fees, as appropriate. Businesses will pay through taxes and fees to be near to each other and accessible to a skilled workforce in globally competitive cities.

▸ Click to download full discussion paper

Shifting to an Evidence-Based Decision Making Platform for Infrastructure Delivery

The Hon. Glen Murray, MPP, Ontario Minister of Infrastructure, Minister of Transportation

Few infrastructure investments made today are delivering the expected social, financial, environmental returns. Too often, public policy and investment decisions are made without reference to objective data and the desired outcomes are rarely stated or measured. Here are five ways to improve the situation:

Click to view video

1. Broader and more productive conversations on city building.
A collaboration of developers, government and business is key to developing brilliant, dynamic cities. It is important that participants become better informed, inspired and motivated to be part of that conversation by providing input to policy.

2. Evidence-based investment decision-making. Policy decisions should be founded on real data, good research and cogent analysis. Good data strengthens democracy and capacity for local decision making and increases participation between elections. Expert data analysis accelerates innovation, which creates value. We need to map each tax dollar spent and measure the marginal cost of against expected benefits and revenues. We need more data and for more of it to be open. Municipal and provincial governments, private and not for profit enterprises should contribute to open data. There will be governance challenges, but Ontario is open to sharing its data. Better data, clearly communicated, helps people understand their choices, which breaks down NIMBYism and creates highly informed participatory citizens, not just consumers.

3. Coordinate zoning, taxes and development charges to reduce our ecological footprint and increase density. Currently, taxation rewards sprawl and penalizes density. It makes high cost locations "inexpensive." Public policy drives jobs to the highways, not the subways. Companies get to save money when they transfer the cost of long commutes to their employees. Taxpayers have to fund highway infrastructure to suburban office parks that pay lower taxes than subway-accessible locations. Promoting development of intense live/work/play communities can reduce the need for expensive transportation infrastructure. For example, the Crossrail transit project in London, UK is creating the economic capacity to develop more than 14M sq ft of office space in Canary Wharf, paid for in large part by the beneficiaries direct (who were identified using data) and through collaboration with the private sector.

4. Integrate and coordinate our plans for highways and transit. "Mobility through proximity" will reduce the demand for transportation infrastructure and optimize savings in the longer run in both capital investments and current expenditures. The maintenance costs of the current paradigm, providing "mobility through connectivity," are excessive and do nothing to change the revenue base. Here in Canada, Calgary expects to save $33B over 20 years by redirecting development back to the core.

5. Achieve value from partnerships. Innovation, technology and development relationships. Partnerships can enable governments to manage development at a scale not possible alone. For example, the Octopus Card in the UK combines technology, data and retail activity to generate more revenue from mobility data than transit fares. Investments in vibrant urban space will create opportunities to monetize the value for both the public and private sectors. Developing quality space around transit hubs creates value that combines culture, design and experience in a dense community.

Investing in Infrastructure Essential for Canadian Cities to Succeed

Mayor Naheed Nenshi, City of Calgary

Click to view video

1. A Mayor's biggest challenge is managing the diverse needs of the municipality with scarce resources. Calgary needs to invest in water and waste water facilities, rehabilitate its existing roads, housing and transit.

2. Canada needs to attract and retain talent. People move to cities, or leave because cites are not working. When talent leaves, tax revenue will decrease. Why do people want to live in Calgary? Because they have access to services, jobs and the amenities they need to live enriched lives. The oil sands are a three-hour flight away but the head offices of the energy industry are in Calgary, not in Fort McMurray.

3. Canadian mayors do not have the power to align spending priorities with citizens' needs. The municipal government is responsible for delivering the essential services the public needs in daily life. No other order of government touches its citizens' lives in this way. Funding revenue should be aligned with those who deliver the service. Municipalities should be able to set their own priorities. The city represents the purest form of democracy, the mayor is elected by every citizen in the city he or she represents.

4. It's time to resolve the fiscal imbalance and regional disparities. The $3B operating budget of the city of Calgary is funded by regressive property taxes ($1.4B) and user fees ($1.6B). Most of Calgary's $3.4B in debt went to build water and wastewater infrastructure to meet federally imposed standards. Meanwhile, the taxpayers of Calgary send $4B to the provincial and federal governments, and receive in return only eight cents of each tax dollar.

5. Cities should be given the capacity to build necessary infrastructure. While Calgary must share its wealth to pay for infrastructure in smaller communities, he would like the other orders of government to equitably remit taxes collected to the cities and provide them with long-term and predictable funding, then let the cities set their own priorities, rather than having those decisions made in Ottawa.

6. The federal budget still follows the paradigm of "junior levels" of government "receiving gifts." The 2013 budget contained a welcome announcement of a five-year commitment to social housing, signaling a permanent role for the federal government in housing. This is not because it has constitutional legislative authority but because the provision of housing is in the public interest. The federal government needs to show similar leadership with a national transit strategy.

7. The federal government needs to wake up to the needs of cities. Though we are among the most urban nations in the world we are still living with 1867 rules written for an agrarian society. We need to start giving our cities the money they need to address their needs, according to their priorities. In the absence of constitutional change we need to renegotiate the relationships between cities and other orders of government. There is nowhere to look for an example of how this has been successful elsewhere – we need to figure it out on our own. Alberta is drafting new city charters with Edmonton and Calgary and having a serious conversation about new and better funding sources and better ways to deliver service but it's a challenge for other orders of government to understand how accountability works at the city level.

8. City Hall needs to show leadership and illustrate by example that it is effective at building a city that fulfills the promise of its residents. The municipal government is more accountable to citizens than any other order of government. The public needs to understand what City Hall – mayors, city councils and the bureaucracy – does for them. Other orders of government should provide cities with the money they need to do that in the best way they see fit.

What Can Canada Learn From the U.S. Experience?

Dr. Andrew Haughwout, Vice President, Federal Reserve Bank of New York

Click for presentation

The Transportation Research Board has been one of the principal stakeholders in developing evidence-based policy positions to support the U.S. infrastructure investment programs. Andrew Haughwout was actively involved in these initiatives and is currently a senior decision maker in the U.S. banking system. What can be learned from the U.S. experience? Do cities have the power to steer the North American economy in the right direction?

Infrastructure provision in the US is dominated by State and local government. Infrastructure represents close to 25 percent of the tangible, reproducible wealth in the US, and most of these assets are on the local or State books. The total replacement value of these assets is over $9T, with much of that being buildings and streets.

1. Infrastructure has a large effect on well-being. Numerous studies have shown that investments in infrastructure led to economic growth and increased productivity. By reducing time costs through process efficiency, infrastructure has a direct, measurable correlation to productivity. Though harder to measure, infrastructure also leads to an improved quality of life via delivery of services and reduced user waiting time. Because of this value, locations which offer superior infrastructure are in high demand and often lead to relocations by firms and institutions. Even in the case of network infrastructure like highways, it is increasingly evident that infrastructure's effects are localized so where we put our investments becomes very important. In cities, the free flow of information and ideas - combined with the benefits of proximity- has allowed dense urban centres to become the most productive parts of the economy, this a reflection of where we put our infrastructure. A major function of infrastructure is to allow for bigger cities than we would normally be able to achieve. New York is able to grow because of the proximity or resources and ease of transport, whereas Las Vegas faces more numerous natural disadvantages.

2. Careful planning of investments, specifically in regard to location, is crucial for the long and short run. Careful planning will yield investment oriented to facilitating activity in already dense central cities, producing benefits for both the city and the surrounding metropolitan area. Transit-oriented development is especially useful because it can serve the twin purposes of expanding the city and making the existing core denser and more accessible. If the city and local population are the primary beneficiaries, then can a land tax be a tool for efficient finance? There are practical barriers to this kind of system in the USA because local infrastructure is subsidized by higher order government and property taxes are partly exported, so the costs (and benefits) often spill over beyond the local level. As well, few institutions can match infrastructure expenditures, and the few that can are often suburb-oriented with no taxing power. Canada has an advantage over the US in this area because the institutions we have for providing infrastructure are much better designed and are able to provide more regional support. Another issue is the distribution of funding among cities. There is ongoing debate about whether infrastructure dollars should be given to offset economic decline, rather than investing in the most productive places. In the future, it is likely that cities will directly compete for funding and we must invest in the most productive places to support those urban centres which drive our economy.

3. Infrastructure is an effective means of stimulus spending, but must be timely, targeted and temporary. The American Recovery and Reinvestment Act of 2009 provided roughly $50B in funding for infrastructure stimulus, aimed at transportation infrastructure. Through the use of existing channels and targeting of the construction industry, "shovel ready" projects were completed very quickly and provided rapid employment. To get the most from these projects, even in the short term, it was important to have efficient finance, careful planning and demonstrated long-term value. Bridges to nowhere are fine for short term stimulus, but taking the time to provide a valuable project allows infrastructure dollars to go further.

Beyond Budget 2013: The Cities and Communities Agenda

Brock Carlton, CEO, Federation of Canadian Municipalities (FCM)

Canada is the second most urbanized country in the world. How well do we manage our cities in a socially cohesive, environmentally sustainable, economically successful way?

1. **Federalism in its current form does not work for cities.** As "creatures of the province" cities do not have the structural framework to create successful communities. There is no connection between the federal and municipal governments yet the federal government, by providing money to build municipal infrastructure, enlists municipalities to deliver on national priorities. Because infrastructure spending has dropped from 4% of GDP in the 1960's to 2% today, municipalities are challenged to build the infrastructure they need to support the economy.

2. **The need for infrastructure needs to become a story that resonates with all Canadians.** To help Canadians understand how infrastructure affects their lives, FCM launched the Great Canadian Infrastructure Challenge and hosted the Municipal Infrastructure Forum. The Forum promoted discussion and sought to create a common voice and a single story from 2,000 municipalities, the private sector and thinks tanks. The "State of Cities and Communities 2013," published in May, calls for recognition of the role of the local governments in creating national prosperity and for a transparent, collaborative process to managing our "front yards."

3. **The 2013 federal budget is a great start, but not a solution.** The 2013 federal budget included $53B over 10 years for infrastructure, the longest and largest funding program in history. The budget also made the 2% gas tax transfer permanent and indexed it to inflation. This provides long-term funding that grows with the economy, to support investment decisions made at the local level and, importantly, establishes a structural relationship between the federal government and municipalities. The federal government has made a commitment to work with FCM and acknowledges the need for dialogue and a relationship.

Why Does it Matter Where the Infrastructure is Built?

Paul McKinnon, Executive Director, Downtown Halifax Business Commission and member of the Canadian Issues Task Force (CITF), International Downtown Association (IDA)

1. **The CUI's study "The Value of Investing in Canadian Downtowns" addresses the current state of downtowns and the importance of investing in revitalizing our urban cores.** Canadian downtowns are enjoying a period of renaissance, are being transformed by new residential growth patterns and are maintaining strong commercial positions.

2. **Public investment in downtowns strengthens cities, laying the foundation for private investment.** The need to replace "hard" infrastructure such as sewers, water supply, roads and public transit leaves little room in infrastructure investment programs for investments in Canada downtowns. This has led to funding gaps for public facilities like arenas, concert halls, libraries or downtown-based marketing initiatives that strengthen our urban cores.

3. **Measuring the performance of downtowns empowers decision makers.** Because property tax for mixed-use communities is higher per acre than for suburban residential and commercial developments, downtowns make a major contribution to tax revenues. Research in Halifax showed that, li8ke most cities, then, almost none of its downtown taxation revenue was invested back into the core. Investment trends improved once they became aware of the impacts. On top of this, Halifax estimates that missing their urban population growth targets (50%) by 10% costs the City $37M a year.

4. **The "Downtown Declaration," issued by the CITF of the IDA, advocates for key changes to the place of downtowns in the Canadian funding and policy structure.** Recommendations include: create a ministry of state for downtowns/urban centres; supporting research into the state of downtowns; assist funding for downtown infrastructure; public funding for business improvement initiatives; and, address criminal justice concerns of downtown cores.

A Critical Strategy for Balancing the Books: Optimizing Expenditures

Pat Gordon, Director, Sustainable Cities International (SCI)

1. Stop propagating the growth errors that have landed us where we are today. The cost to maintain existing infrastructure and build new infrastructure in the traditional suburban model is not sustainable. However, if the 'business as usual' scenario continues, suburban growth will be the norm, as Calgary looks to add another 1.3M people over 60 years.

2. Evidence-based decision making can determine the long-term course for urban development. "Plan It Calgary" engaged 6,000 Calgarians to create a vision for a long-term growth plan over the next 60 years, grounded in the principles of SMART growth. Denser, transit-oriented development would save 250 sq km, 33% in capital costs and 14% in operating and maintenance costs. Development would also supplement the radial transit system, enabling interactions between adjacent areas, not just with the core.

3. *Infrastructure Cost and Urban Growth Management Guide:* Step-by-step process of determining the cost implications of different growth scenarios for cities developed by SCI was used for Calgary's study. It helps governments formulate a strategic plan that determines sustainable urban growth. Understanding the fiscal impacts of different scenarios empowers decision makers to make more responsible choices and build capacity for better municipal planning processes.

Panel Leader *Lucy Casacia, VP, Low & Med. Voltage Div, City Manager, GTHA 2015 Pan/Parapan Am Games Program Manager, Siemens Canada Ltd.*
Discussants *Bob Onyschuk, Distinguished Associate, Canadian Urban Institute, President and CEO of Onyschuk Strategic Advisory Services and Quadrant Developments Ltd. and David Downey, CAE, Assoc. AIA, President & CEO, International Downtown Association (IDA)*

Click for session presentations
Panel: New Models for Strategic Partnerships

Panel Session | New Models for Funding Infrastructure

LED Strengthening: Achieving the Transformation

Philip Jessup, Director, LightSavers Canada, Canadian Urban Institute

1. Electricity costs form a significant portion of the annual balance sheets of institutions that own or manage lighting assets. Lighting accounts for 19% of the world's energy consumption, Canada's street and parking lighting uses the equivalent power of 230,000 homes. Incorporating LED and smart-control technology into municipal, provincial, institutional and private lighting systems will reduce this consumption and associated GHG emissions.

2. A positive return on investment. In combination with smart-control systems which monitor and optimize systemic efficiency, LEDs can achieve 50-70% annual cost savings through reduced maintenance and usage. However, upfront costs, performance and quality variance complicate the benefit calculation and are barriers to scaling up.

3. The installation of LEDs can be funded by issuing debt, paid for by the cash flows from the operational savings. Alternatively leasing can be provided through turnkey performance contracts or with P3 models .

4. Government policy can help to reduce risks and development partnerships. Joint procurement programs that combine purchases can reduce costs, establishing/endorsing a uniform technical standard, facilitating alternative financing and procurement policies to encourage domestic manufacture of LEDs would all help.

5. Success breeds success. The municipalities in Canada and abroad that have already switched to LEDs provide lessons and experiences for the many more now conducting or considering pilot projects.

Overcoming Barriers to Pension Fund Investments in Infrastructure

J.C. Bourque, Consultant, Strategy Corp, Toronto

1. Canadian pension funds are a largely-untapped resource for domestic infrastructure investment. Canada's pension funds are recognized as world leaders for their direct investment capabilities, apolitical and independent governance and professional management. The economic and asset value characteristics of infrastructure, combined with the pension funds' trillions in assets and long-term investment horizon make them ideal partners in funding capital projects. Funds such as OMERS, OTPP and CDPQ have increased infrastructure and real assets in their investment mix, but much of this been in foreign markets with little infrastructure investment within Canada.

2. Pension funds face significant barriers to domestic infrastructure investment. Canadian municipalities have significant investment needs but many assets are not open for investment, not of adequate scale and would not generate an acceptable risk-adjusted rate of return as compensation. Of great concern is the lack of a transparent regulatory mechanism. Policy whims create market instability because there is a lack of separation between policy formulation and market regulation. Furthermore, public sector unions are in a position of conflict as they are simultaneously investors and employees.

3. A policy framework for investment at all three orders of government and across a wide range of projects. To provide incentive for keeping funds in Canada, offering a return that can match or exceed foreign alternatives. Governments must create a predictable public policy framework for investment in Canadian capital assets. Municipalities could bundle projects to produce the scale sought by large institutional investors. The P3 market faced similar struggles, but evolving legislation has allowed it to advance to its current strong position. By attracting Canadian pension investments, we create a "Canadian advantage" which will continue to produce returns and play a part in addressing our infrastructure needs.

Canary Wharf's Role in Funding Crossrail

Jim Berry, Partner, Hatch Mott MacDonald

London Crossrail, a major investment in transit infrastructure, connecting Maidenhead and Heathrow in the west, through new 21 km tunnels under central London to Shenfield and Abbey Wood in the east.

1. Broad economic benefits. The latest city plan forecasts that by 2031 nearly 1.3M more people and 750,000 new jobs will locate in the capital. Over 35% of these jobs anticipated will occur in the Crossrail service area. 1.5M more people will be brought within a 45 minute commute of the city. Productivity will increase via clustering economic activity, 14,000 people will be working on the project at its peak.

2. A financial model based on beneficiaries. At an estimated cost of £15.9B, Crossrail is the largest civil engineering project in Europe. The initial government response was that it could not afford it. The Canary Wharf Group (CWG) identified that rail users, road users, employers, developers, land owners and government would all benefit, building a case where all should pay for it in some way. The solution needed to be transparent, easy to implement, use mechanisms to capture revenue from property, be based on rigorous studies and link funding to the project efficiently. The final funding scheme consisted of business levies, community levies, private sector contributions, development levies and contributions from national taxes and fares.

3. Evidence-based decision making, alignment of broad stakeholder interests and collaboration were critical to success. Metrics like job growth and productivity and the collective agreement of businesses and other stakeholders created a strong business case and helped the project pass through parliament. In addition, the Mayor and Prime Minister were open to new ideas from the private sector that relieved pressure on scarce public funds. Partnership between the private sector, public sector and other stakeholders produced a sustainable, equitable funding scheme.

4. High ridership rates are important: The key to capturing ridership is proximity to work. Create the conditions for developers to build workspace on transit lines. In Canada, developers and business are focused on the suburbs. We need to shift this mentality and use data, research and evidence-based decision making to show the value in transit-oriented development.

Panel Leader *Christel Higgs, Associate, Borden Ladner Gervais* ***Discussants*** *Iain Dobson, founding partner, Real Estate Search Corp., and Senior Associate, Canadian Urban Institute and Andy Manahan, Executive Director, Residential & Civil Construction Alliance of Ontario (RCCAO)*

Click for session presentations
Panel: Funding Infrastructure

Panel Session | New Models to Prioritize Environmental Goals & Revitalize Communities

Maximizing Infrastructure Efficiency to Achieve Conservation Targets

Maegan Baird, Policy Advisor, Business Development, Horizon Utilities Cooperation

1. Energy mapping identifies energy consumption trends. Energy mapping carried out for Horizon by CUI allowed Horizon to focus its resources where they are most likely to lead to the greatest reductions in total and peak energy demand.

2. Energy mapping is a collaborative effort. Horizon's pilot project, funded by the Ontario Power Authority, involved local, provincial, regional and federal governments and agencies. Horizon provided the consumption data and project management, Environics provided customer segmentation data, MPAC provided property attribute data and Teranet provided geospatial data. The Canadian Urban Institute integrated the data to create visual mapping. Matching the data from the various sources was a real challenge.

3. Energy mapping provides insight into brownfield development in older communities. Development in older cities such as Hamilton and St Catharines cities is governed by "greenbelt legislation" that limits growth in greenfields and encourages redevelopment of brownfields. Horizon worked with both municipal economic development departments to identify vacant industrial buildings and land that can be inexpensively connected to existing services for residential infill and mixed-use development. Brownfield redevelopment supports local investment, jobs and growth, reduces urban sprawl and preserves farmland and environmentally significant lands.

The Hidden Value in Community Assets

Peter Love, President, Energy Services Association of Canada (ESAC)

1. Energy conservation has economic, employment and environmental benefits. A building retrofit creates high value jobs and is one of the most cost effective means of reducing GHG emissions.

Investments in major energy retrofits have the returns of a small cap stock with less risk than a corporate bond. Green buildings attract and retain employee talent by creating a workplace that is more productive, healthier and which enhances a company's brand. Climate change, the defining challenge of our age, is due to an increase in GHG concentrations. In Canada, 82% of the man-made GHG emissions come from the production and use of energy. In Canada, therefore, our focus should be on energy conservation.

2. Risk assessment is the key barrier to implementing energy retrofits. An Energy Service Company (ESCO) absorbs the financial and technical risk for projects. By guaranteeing that the energy savings will be sufficient to pay for the project. The savings fund the retrofit and later provide a stream of cash flows that can be invested in other projects or to address deferred maintenance. Energy performance contracts, which include performance guarantees, have been used in organizations across Canada since 1993.

3. The Energy Services Association of Canada represents the ESCO industry. ESAC members account for over 90% of the $450M/year market for guaranteed Energy Performance Contracts. There are numerous case studies of successful projects on the web site of the Energy Services Association of Canada (www.energyservicesassociation.ca).

Community Energy Planning in Ontario

Katelyn Margerm, Senior Engineering Researcher, Canadian Urban Institute

1. Community energy planning (CEP) is more than demand planning. CEP can identify environmental and economic benefits and encourage more sustainable, reliable, resilient energy infrastructure. The CEP process requires a significant commitment from municipal leaders and stakeholders to achieve this outcome.

2. Community energy planning requires collaboration between multiple players. The regions and municipalities are responsible for land use, transportation and municipal infrastructure planning; utilities supply infrastructure and energy to satisfy customers, earn a profit and perform load forecasting and utility capital planning; the Ministry of Energy and the Ontario Power Authority are mandated to ensure adequate, reliable and secure electricity supply and in Ontario and to promote conservation, and cleaner technology and energy sources.

3. All parties overwhelmingly agree that there is room for more collaboration and are developing strategies to improve it. At the municipal level collaboration would be improved by early, ongoing engagement, sharing of high quality, disaggregated data, developing plans that account for the processes and plans of other parties. Progress is being made to improve the collaboration among utilities, the OPA and the Province of Ontario to improve the municipal engagement process, to review the conservation and demand management delivery model and to review the municipal and utility mandates for community energy planning.

Panel Leader *David Thompson, Policy Director, Sustainable Communities, Sustainable Prosperity, University of Ottawa* ***Discussants*** *Nancy Schepers, Deputy City Manager, Planning and Infrastructure, City of Ottawa and Pat Gordon, Director, Sustainable Cities International (SCI)*

Click for session presentations
Panel: Environmental Goals

Breakout Discussions | Session A

How Can We Sell Infrastructure Better?

Facilitator: Todd Latham, President, Actual Media Inc

• **The infrastructure deficit is, so big as to paralyze action.** FCM estimates the infrastructure deficit to be $123B, while CCA places it closer to $258B. We clearly need ways to be reasonably accurate to communicate the situation effectively.

• **Civic leadership needs to focus on positive action and public good.** American mayors like Daly and Bloomberg stand out with bold visions and make their opinions on how to achieve common goals well known. They are not afraid to upset the vocal minority "who obfuscate and unnecessarily delay projects and progress." Our politicians need to have the will to create political and public consensus, and move forward through the inevitable pushback.

• **We need to broaden the conversation around infrastructure and mobilize.** The public wants better roads, bridges and schools but politician are afraid to "raise taxes." People will consider increased taxes but need to understand and accept the value proposition. It can be done. *Plan It Calgary*, the process which created Calgary's Municipal Development Plan and the Calgary Transportation Plan, effectively engaged over 6,000 people in establishing a coherent vision and actions in support of the necessary changes to the infrastructure system.

• **Pay for it with funding the appropriate order of government.** This creates a link between taxpayers and the accountability of representatives to fund and manage the infrastructure they own.

• **Some cities use P3s to keep debt off their books.** Municipalities can borrow at lower rates than corporations, therefore, on a cost of capital basis, P3s do not make sense unless the premium is an appropriate cost paid to the private sector to assume the risk. P3s can also be used to exclude public participation, which leads to a general mistrust.

• **We need more pension fund investment in Canada.** South Korea's forced savings rate is one approach - workers must save 25% of their salaries (employers contribute an additional 10%) to the age of 55. This makes up a Central Provident Fund, with which the government builds roads, schools, hospitals, and especially, housing. While this may not be completely applicable to Canada, people need to understand the rationality of using their publicly-funded salaries to support the public services crucial to their well-being.

Breakout Discussions | Session B

What can the public sector learn from the private sector?

Facilitator: Marni Cappe, Board Member, Canadian Urban Institute, and Principal, M Cappe Consulting

• **The market is not always right.** To deliver results or projects that provide a better fit between public policy interests and the market place, the public sector should introduce evidence-based decision making. Business is in business to make money and one will follow another off a cliff in pursuit of profit. Better understanding of the costs and benefits will enable the public sector to bargain from a position of knowledge and strength.

• **Value assets, costs and benefits should be based on full-cost accounting and net present values.** Too often, the project accounting considers the capital but not the operating costs. Without comprehensive costing local priorities are distorted, then, the "social discount rate" applied must be lower. Infrastructure investments, such as transit, incur present costs in anticipation of benefits that will be realized over the course of decades. Present benefits valued at a 7% discount rate become worthless in current dollars.

• **Import creativity and risk taking.** There is no money for projects in the $10-15M range, such as streetscaping and district energy, so bundle them together and create a package attractive to investment. Listen, show respect and collaborate with the private sector. Learn to engage with business and work together, as in the London Crossrail collaboration, to create innovative ways to achieve good outcomes for all parties. A democratic government cannot be run like a business, however, the public sector can learn to work more effectively with the private sector.

Panel Session | New Models That Leverage Underutilized Assets

Using Land Assets to Generate Cash Flow for Capital Needs

Dale Mikkelsen, Director of Development, Simon Fraser University Community Trust

1. Land developed as a coherent strategy provides more leverage than a piecemeal, ad hoc strategy. When Simon Fraser University (SFU) decided to leverage the value from its land endowment it created a comprehensive plan. SFU donated most of the land (320 ha) to the Burnaby Mountain Conservation area in return for permission to concentrate development on the remaining 65 ha and create a plan that attracted private capital to build the UniverCity development. The development plan includes both rent-geared-to-income and market housing; a dense, walkable, mixed-used form; and sustainability incorporated into buildings, including a childcare centre and an elementary school with a sustainability curriculum. People are happy to live in a dense form with excellent services, programs and spaces.

2. With adequate density, it is financially feasible to keep housing affordable. The development land was leased to award-winning developers willing to use their capital to fund projects because of the long-term cost-savings associated with the design. SFU retained control of the underlying asset base. The proceeds from leases and development are used by the University to fund research and scholarship programs.

3. Environmentally-sound design pays for itself and leverages long-term value for the community. UniverCity incorporates high LEED standards, local electrical generation and additional performance and environmental standards, including a Green Building by-law, 100% storm-water management, reduced parking and GHG targets.

4. Development by publicly-funded institutions needs good, independent governance to remain financially flexible. The SFU Community Trust is governed by an independent, non-university board that is more financially nimble than would be normal in a university bureaucracy. This has allowed more aggressive policy and innovation, ultimately leading to the project's social and financial success. The UniverCity is a model of sustainability, a model of planning excellence and a model for funding public institutions.

The 70% Solution – Housing Affordability

Graeme Hussey, Development Manager, Centretown Citizens Ottawa Corporation (CCOC)

The Beaver Barracks development in Ottawa's downtown core, provides opportunities for people of all incomes, ages and abilities to live affordably and in an environmentally-sustainable way. It was developed by the CCOC, non-profit, member and tenant-directed organization which owns and operates a large number of affordable housing projects in Ottawa.

1. An environmentally-integrated project: The Barracks features Canada's largest residential geothermal plant, which provides 100% of the project's heating, cooling and water heating requirements in multiple energy-efficient buildings. Tenants are encouraged to sign voluntary "green commitments."

2. Diverse funding streams and leveraging of available assets. The $65M Barracks project was funded by federal grants, a first mortgage through Infrastructure Ontario, a second mortgage through a social investment by a religious order, $2M in CCOC capital and land grants, "in kind" support in the form of development and encroachment fee waivers by the City of Ottawa, FCM and other affordable housing project initiatives. The second mortgage was collateralized with another CCOC property, effectively leveraging existing, underutilized assets to finance new housing.

3. The federal government needs to engage municipalities with a clear, coherent vision to fill the housing gap. Foreign approaches to affordable housing, such as legislated allotments, may be difficult to duplicate in Canada because of the strong private sector link to development. The national strategy must make the preservation of city land for housing a priority. It should develop innovative equity schemes to keep housing affordable while making a profit for developers. The funding from Budget 2013 is a start, but a longer-term commitment is required.

Revolving Fund for Urgently Needed Housing Infrastructure

Martha Powell, CEO, London Community Foundation

1. Investment in affordable housing has become a top community priority in London, Ontario. In London, 3,500 families face an average wait of 8.2 years for affordable housing. The London Community Foundation (LCF)'s Loan Fund exists to fill this gap.

2. The Fund fills a large gap in the system's financial structure. Developers have often faced barriers to procuring funding from banks. Using donations from a variety of sources, in addition to its own unrestricted endowment capital, the Fund is able to provide capital loans up to $500k for affordable housing developers. Investments of $500k are a start, but not nearly sufficient to fill the affordable housing gap. We need a way to scale up this kind of development to the national level.

3. The LCF keeps its capital working and increases the size of its investment pool. The loans are targeted towards shorter-term capital costs so that the Fund can recoup its investment without tying up capital in a long-term holding. As buildings are erected, loans are repaid through rental income and leases, all the while increasing visibility for the LCF and Loan Fund. Though the Fund is still in its early stages, the vision is that the pool of capital will continue to expand and lead to an increasing scale of impact.

4. A clear strategy for social investment. To be eligible for a loan from the LCF, the proposed project must satisfy both social and financial requirements. On the social side it must demonstrate that it fulfills a need for community housing but faces a funding gap, respects or supports good environmental practices, and aligns with LCF goals and mandates. On the financial side the applicant must demonstrate clear underwriting and financial health, that is has the financial skill and has clearly supported sources and uses for all the funds. This rigorous application process helps ensure that the LCF's funds have the largest possible impact.

Panel Leader *Jeanette Southwood, Urban Development and Infrastructure Sector Leader - Canada/Global Sustainable Cites Leader, Golder Associates*
Discussant *Neil Prashad, President and CEO, Origin Active Lifestyles Ltd.*

Click for session presentations
Panel: Underutilized Assets

Breakout Discussions | SESSION A

Investing in Innovation Infrastructure

Facilitator: Glenn Miller, FCIP, RPP, VP, Education & Research, CUI
Presentation: David Moorman, Senior Policy Advisor, CFI

1.Canadian Foundation for Development (CFI): CFI was created in '97 to fund research infrastructure in Canada's universities, hospitals and colleges. CFI grants support research which will positively benefit Canadians. To date, the CFI has provided $5.3B in funding to 8,000 projects at over 100 institutions in 66 municipalities. Under the current funding scheme, CFI grants cover 40% of project costs, the remainder is provided by the provincial governments, institutions and the private sector. This scheme has leveraged $12B in funding from the base CFI grant encouraging collaboration between stakeholders interested in promoting innovation.

2. Post-secondary institutions are substantial contributors to the economy. Canadian post-secondary institutions are a $30B/yr enterprise in direct revenue and expenditures; for context, the mining industry is a $35B/yr industry. Research also generates value: $10B in research grants generates over $60B annually in economic activity through spin-off companies, patents, licensing, and employment.As a result of CFI's $35M investment at the Centre for Optics, Photonics and Lasers at Université Laval, 40 companies have been created, with $400M in annual revenues and 3,000 high-quality jobs.

3. Broader engagement between post-secondary institutions and cities will lead to greater knowledge transfer. Cities have not extensively engaged post-secondary institutions to find solutions to their infrastructure problems. Starting this conversation is the Community University (CU) Expo, which has been effective in promoting collaborations between cities and universities to address social policy issues.

4. Long-term commitments and strategic plans are needed for funding innovation infrastructure. The CFI, was set to expire in '05, is not stable source of long-term funding. We need more long-term commitments, like the Gas Tax Fund, and should explore different grant models such as equity financing and cost-share programs. In an age of fiscal constraint, these ideas may provide the sustainability that CFI needs, reducing reliance on federal coffers.

Click for presentation - Breakout A

Breakout Discussions | SESSION B

Multi-Disciplinary Innovation

Facilitator: Chris Stoney, Associate Professor, School of Public Policy & Administration and the Director of the Centre for Urban Research and Education (CURE), Carleton University **Presentation:** Wally Wells, President, Asset Management BC, and Past Chair and Director, Board of the Greater Nanaimo Chamber of Commerce

1. Sound asset management (AM) practices are a large part of managing the infrastructure deficit. Current levels of service provided by municipalities are unsustainable. The only way to balance the books is to raise taxes and user fees or reduce service levels; anything else will only continue to accrue unsustainable costs. The public needs to be educated about the true costs of services and infrastructure and set their expectations at a more reasonable level.

Click for presentation - Breakout B

2. Planners must use asset life cycle when making decisions and include replacement costs. The Public Service Accounting Board (PSAB 3150) guidelines require municipalities to amortize tangible capital assets in their financial statements. However, municipalities are mainly planning for depreciation, not amortization. This leaves replacement costs unaccounted for.

3. AM requires communication and collaboration. A culture of teamwork between departments, as well as between municipalities and senior government is needed to overcome the confusion about what effective AM is. There are issues with understanding data, communicating information and dealing with systems that are not well-enough understood by users. Asset management will evolve by necessity as climate change begins to impact assets more and more.

Breakout Discussions | SESSION C

The Value of Infrastructure Investment in Canadian Downtowns

Facilitator: Dr. Eric Champagne, Centre on Governance, University of Ottawa and board member of the Canadian Urban Institute (CUI) **Presentation:** Katherine Morton, MCIP, RRP, Senior Planner, CUI

1. A range of strategic infrastructure investments have leveraged downtown assets to build a more prosperous and more livable community. CUI's landmark research *'The Value of Investing in Canadian Downtowns'* identified successful approaches and partnership models that have allowed these projects to be realized. Seventeen cities of varying size, scale and function have participated so far, new cities included Charlottetown, Kingston, Hamilton, St Catharines, Windsor, Regina and North Vancouver.

2. There is renewed interest in the downtown agenda. Country-wide, downtowns generally occupy less than 1% of municipal land area, but attract more than 20% of construction value. Downtowns have found that a combination of dense residential and commercial space leads to complementary investments, such as retail, entertainment and post secondary education facilities. These create a strong commercial position and contribute to the cultural vibrancy.

3. Public investments in infrastructure creates value and unlocks development potential. Residential incentives including loans and charge waivers, have led to significant increases in housing stock, with short-term costs borne by the government being repaid from increased property tax revenues. Heritage incentives and marketing campaigns result in renewed vibrancy that attracts greater residential growth. Higher value redevelopment delivers higher tax revenue. Downtowns are also an excellent place to encourage walkability, cycling and transit, all of which can be addressed by improving infrastructure.

4. Success is predicated on strong partnerships and long-term commitment from both the public and private sector. Partners gather around a clear, consistent and long-term vision, downtowns have been able to add value and build on their successes. These partnerships are important in developing local approaches, tracking and monitoring downtown performance and developing civic leadership. Civic leaders, not just the mayor, are key to creating a culture of collaboration to push the urban agenda.

5. Cities need to measure progress based on accurate data and metrics. To understand the value of our evolving downtowns, we need to engage in more studies like the Downtowns Report, to see how far we have come and how to plan for the future. In this regard, data and accurate metrics will only become more valuable, and the capacity for sharing and gathering data will become increasingly important.

Click for presentation - Breakout C

Closing Plenary

Building Consensus Across Canada and Inspire Action at the World Urban Forum

Session Leaders: Dr. Caroline Andrew and John Farrow

The need for infrastructure may be universal but can there also be common solutions? The Canadian Urban Forum has provided insights and advice for publicly funded organizations and institutions on how to finance and build projects and programs, as well as fresh approaches to determining priorities and ensuring that infrastructure can achieve its goals. Is there sufficient agreement on principles and criteria for advancement and can any of these approaches be successfully adapted to the developing world?

Canadian Urban Institute

Presentation: Andrew Farncombe, MES, MCIO, RPP, VP, International Partnerships, Canadian Urban Institute

The CUI's international programming facilitates the exchange of experience between Canada the world. Through evidence-based approaches and mapping tools, the CUI partners with cities and regions in developing countries and countries in transition to develop locally-appropriate solutions to complex urban challenges. These challenges are approached on the municipal and regional scale with the overall goal of fostering local and regional economic prosperity to improve urban competitiveness.

1. Increase local capacity and sustainability by forming strong reciprocal partnerships with stakeholders. Partnerships allow issues like policy, business-friendly government, competitiveness factors, talent, investment attraction and alignment of efforts to be addressed on a peer-to-peer level in innovative ways. A recent CUI program is the eight-year, Canadian International Development Agency (CIDA) - funded, Regional Governance and Development project in the Ukraine to improve regional economic development. In 2005, Ukraine faced significant challenges, including highly-centralized governance, resource constraints and little economic development planning, all compounded by the fiscal restraint of an infrastructure deficit. To address the economic issues, infrastructure had to come first.

2. Solutions need to move from planning to implementation. The CUI's solution was to set priorities through a regional planning process, develop a training program on capital improvement and investment attraction and, most importantly, allow learning through implementation of real projects. Using Canadian and Polish experts, over 1300 people have been trained to date in a program focused on basic principles like strategic planning and project management. Each trainee had to bring a potential project to the table, with a focus on moving forward sustainable development and economic growth. The end result has been a tailored program which has successfully built local capacity for development and leadership. Projects have included a district energy upgrade, a bypass road and a palliative care facility, all of which used a variety of funding models and planning strategies to be successful. These projects have contributed a number of lessons-learned for both the CUI and Ukraine.

Key points:

- Regional planning adds to alignment of efforts.
- Alternative financing boosts investment attraction.
- Delivery of training through real projects is essential and leads to a portfolio of shovel-ready projects.
- Disconnect between the affordability of feasibility studies and the higher-government mandate for them in accessing project funding.
- By keeping the conversation about regional competitiveness in terms that people can understand (job growth, etc.), more people can be brought to the table and more support will follow.

Canadian Institute of Planners

Presentation: Andrea Gabor, FCIP, RPP, President, Canadian Institute of Planners and Partner, Urban Strategies

The Canadian Institute of Planners (CIP) international work began in 1984, founded on the strategic objectives of education and awareness building, employment opportunities and business development, international cooperation and development assistance.

1. The scope of their work has included capacity-building in the Caribbean, knowledge exchange with China, international graduate internships and outreach with other planning organizations from around the world. A major program was the Canada-Guyana partnership for community planning, conducted between 2009 and 2012. This program was created to improve transparency and accountability in infrastructure planning, as well as to contribute to poverty reduction through community development plans for social and physical infrastructure. A large component was a certificate-based training program for public sector workers and community leaders, the result of which has been improved professional skills and greater understanding of community planning and the planning process.

2. The CIP also helped establish the Caribbean Planners Association in 2012. Unfortunately, CIDA funding for the Caribbean work has not been renewed and the CIP's ability to conduct international projects is in decline of late. National issues are taking more priority, and the near future will see the CIP in a largely partnership role with other international planning groups. This, however, is not the end and the CIP is hopeful that more funding and support will be available to fund international projects.

Federation of Canadian Municipalities

Presentation: Lise Burcher, Councillor, City of Guelph and Representative FCM International

As a non-profit organization representing 90 percent of Canadians, FCM plays a large role in advocacy for municipal interests with the federal government. In 2011, municipal infrastructure investment was at risk, with no promise of renewal for federal initiatives like the Building Canada Fund, affordable housing funding and the Economic Action Plan.

1. A growing federal deficit crowded out spending agendas, and there was no federal agenda to build on earlier gains. Thankfully, FCM lobbying and federal foresight acknowledged the importance of infrastructure and lead to the Long-Term Infrastructure Plan (LTIP) which aims to confront the growing infrastructure issues faced by Canada. The LTIP established sound principles for infrastructure, including protection and expansion of existing programs, predictable and long term funding, sound asset management and the need for new models of federal-municipal relations around infrastructure. The LTIP was made concrete in the 2013 federal budget and represents a strong level of support for infrastructure and municipal needs.

2. Funding and knowledge are essential to making infrastructure work. These two principles are the basis for FCM's Green Municipal Fund (GMF) which aims to promote sustainable infrastructure and planning at the municipal level. To date, the GMF has provided $613M in funding to 934 green initiatives across Canada in support of planning, studies and capital projects. Through grants, loans and a competitive selection process, the GMF helps ensure that financial capacity is in place for municipal projects of this type.

3. The second piece of the GMF strategy (knowledge) is achieved through a variety of media, including: publications, webinars, workshops, GMF project databases, Partners for Climate Protection programs, FCM sustainable communities awards and FCM sustainable communities conferences. By expanding the stakeholder knowledge base, the GMF is able to establish a common vision for green initiatives and align interests to optimize the use of available funding. On a larger scale, FCM is very active internationally, operating in a global network of donors and municipal organizations to address issues in over 30 countries.

4. Local governments are at the frontline of delivering and creating enabling environments for services essential to reducing poverty. Local governments provide the infrastructure, health, education and economic influence needed to drive successful cities, and FCM supports these efforts through capacity building and program management initiatives. Using a peer-to-peer approach, FCM is able to develop best practices, engage municipal staff and foster reciprocal relationships to achieve common goals. Recently, FCM has focused on local economic development, with specific programs in Ukraine, Haiti and the general Caribbean. These programs have contributed to increasing sustainable economic growth, improving governance and, in the case of Haiti, rebuilding following 2010 earthquake.

Click for presentations - Closing Plenary

Keep an eye out for CUI events that will continue this conversation and stay tuned for the next Canadian Urban Forum taking place in 2015

Closing Comments from the Conference Co-Chairs

This conference was useful, but we must use technology to further improve our communication and develop reciprocal relationships. Canada needs to broaden its international partnerships beyond just developing countries and contribute to a greater culture of mutual learning. It was beneficial to have the input from the International Fellows from the Johns Hopkins program who helped push Forum discussions across borders. Looking over the presentations and discussions that took place we put forward these thoughts:

- Lack of funding has been a problem for 30-40 years. **We need to address the overarching principle of long-term planning.**
- Professionalism and skills of individuals in each country varies considerably. The international dialogue is geared towards "helping out" other countries. There are structural changes we must deal with as we build our infrastructure: **How do we build cities that are inclusive and promote economic growth that is inclusive?**
- **What are the next steps? There is a clear benefit to continuing this dialogue within Canada as well as using the impetus of the debate to form the basis for Canada's participation in the 2014 World Urban Forum.**

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