Real Story No. 5

Plan It Calgary:

A Mature Integration Model for Community Design in Calgary, Alberta, Canada

By Jackie Teed and Elisa Campbell

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Project Highlights

In 2005, more than 18,000 citizens participated in the imagineCALGARY project to identify community aspirations for framing the development of the *Plan for Long-Range Urban Sustainability* (Long-Range Plan). In 2006, the city formed the Sustainable City Project team to coordinate the Plan It Calgary project toward implementing the Long-Range Plan. The project goal was to integrate land use and transportation planning to generate revised *Municipal Development* (MDP) and *Calgary Transportation* (CTP) plans that sustainably accommodate 2.5 million people and 1.3 million jobs within the city by 2075. Council adopted *11 Sustainability Principles* in 2007 to help guide the project. For the Plan It Calgary project, the city partnered with the University of British Columbia Design Centre for Sustainability (Design Centre) to translate the Long-Range Plan into detailed policies that could be implemented, monitored and evaluated over time.

The Design Centre developed and implemented a unique project process, including three types of decision-support tools to integrate community indicators and performance measures: framing tools that logically organize community intentions and explicitly link these intentions to design choices; informing tools that educate decision-makers about issues relative to design decisions; and modeling tools that reveal anticipated performance of alternatives against indicators. The Design Centre team applied these tools in an iterative series of collaborative, stakeholder workshops and design charrettes hosted by the city, which engaged participants in creating and evaluating alternative scenarios formed in response to the indicators and performance metrics.

The result was a set of alternative future development scenarios for Calgary at both the whole-city scale and neighborhood scale, complete with illustrative drawings and empirically measured performance data. Detailed design and planning strategies and actions were drawn from the evaluated scenarios to illustrate how to implement development to best achieve the desired performance with respect to the related community indicators. City staff used these strategies and actions as inputs to develop the final MDP and CTP, which were approved by city council in September 2009.

The MDP and CTP are living documents that define strategic policy direction against which the city will periodically measure progress using the indicators and metrics developed in partnership with the Design Centre. Through using community indicators and metrics as integrated tools for community sustainability decision-making, this project exhibits all the mature integration characteristics, as described in the *Community Indicators-Performance Measures Integration Descriptive Model*, including: citizen-driven community indicators; performance measures linked to community indicators, and quantifiable and measurable results; transparent, results-based governance/decision-making; evidence on demand; and committed accountability. The Plan It Calgary project is an excellent example of how integrated community indicators and performance measures can contribute to shaping a growing community into a more sustainable one.

Background and Context

Calgary, Alberta, Canada, is a busy city largely fueled by the province's resource industry. Rapid population increases coupled with a provincial policy requiring the city to maintain a 30-year developable land supply through annexation has facilitated unrestricted growth into undeveloped land at the city's edges. Despite high levels of transit ridership for commuting to the city core, the majority of residents have historically relied on single-occupancy vehicles and high-capacity roads for access to jobs, goods and services, education and recreation.

In the face of concerns about surging infrastructure costs along with the negative impacts of rampant greenhouse gas emissions, this pattern is changing. In 2005, the city of Calgary, through the imagineCALGARY project, engaged the community in developing a *Plan for Long-Range Urban Sustainability* (Long-Range Plan), during which more than 18,000 citizens identified their preferences for the future development of their city. Key among citizens' aspirations/objectives were: increased mobility choice, particularly providing alternatives to vehicles; proximity and connectivity between home, job, school, recreation, goods/services and transit; more housing choice in more dense neighborhoods to reduce urban sprawl; and increased areas for habitat and open space.

In 2006, the city formed the Sustainable City Project team (City Team), including staff from both the planning and engineering departments to coordinate the Plan It Calgary project toward implementing the Long-Range Plan. The project goal was to integrate land use and transportation planning to generate revised *Municipal Development* and *Calgary Transportation* plans to sustainably accommodate 2.5 million people and 1.3 million jobs within the city by 2075. The Long-Range Plan and 11 Sustainability Principles adopted by council in January 2007 provided the basis for the Plan It Calgary project, and for shaping the growing community into a sustainable one.

To achieve this goal, the City Team required a comprehensive project process that could achieve complex objectives. This process had to build on the broad public engagement of imagineCALGARY; incorporate the Long-Range Plan, 11 Sustainability Principles and other key policies and plans into decision-making; and identify integrated indicators and measures to guide and evaluate community planning and implementation options throughout the project and into the future. The city partnered with the University of British Columbia Design Centre for Sustainability (Design Centre) in 2007 to translate the community's high-level sustainability aspirations as embodied in the Long-Range Plan into detailed policies that could be implemented, monitored and evaluated over time. The unique decision-support tools and processes offered by the Design Centre served not only to achieve these objectives, but also to build capacity within city staff to ensure project outcomes would continue to inform decision-making into the future.

The Design Centre (www.dcs.sala.ubc.ca/default.htm) is an applied research organization with a mission "to catalyze change towards sustainable,

The Community

The city of Calgary (www.calgary.ca/portal/server.pt?) is located in Alberta, a prairie province in western Canada. Calgary sits at the confluence of the Bow and Elbow rivers and was originally established in 1875 as a fort of the North West Mounted Police. Calgary officially incorporated as a city in 1894 with 3,900 people.[2] The city is home to just over 1 million people in 2010.[3]

Calgary has grown rapidly since the 1980s, largely due to immigration. This means Calgary is demographically younger than most Canadian cities, with an average age of 35.7 years compared to the Canadian average of 39.5 years,[4] and unlike much of the rest of Canada continues to have a large cohort of young families. This is reflected in the growth of new single-family suburban areas, which accounted for about 95 percent of community development between 2007 and 2008.[5]

Calgary has a municipal government with an elected council and mayor. Under the city's UniCity concept established in 1956, Calgary has a mandate to grow as a single metropolitan region with one central governing authority.[6] Historically, this has resulted in ongoing expansion of the city's suburban footprint. As a comparison, the 745-square-kilometer city has a density of 1,342 people per square kilometer, while the 830-square-kilometer City of New York has a density of 9,879 people per square kilometer.[7] With the Plan It Calgary project, the city is refining how development occurs to shift Calgary toward a more sustainable future

Calgary's Plan It Calgary project page: www.calgary.ca/PDA/LUPP/Pages/Municipal-Development-Plan/Plan-It-Calgary/Plan-It-Calgary.aspx low-carbon communities through developing and applying innovative planning and design-based knowledge, research, and tools. This mission relies on a synthetic, multidisciplinary and collaborative practice-based approach in which the creation and dissemination of new knowledge and its application are closely intertwined."[1] Located in the School of Architecture and Landscape Architecture (SALA) at the University of British Columbia, the Design Centre team for the Plan It Calgary project included SALA faculty and students in the collaborative process of exploring the potential outcomes of applying the Long-Range Plan and 11 Sustainability principles to the physical planning and design of Calgary. In keeping with Design Centre goals, the role of the academic research organization for the project was to develop innovative assessment methodologies and to explore a range of robust growth scenarios culminating in an integrated set of community indicators and performance measures that could help the City Team articulate a preferred path for the city's future. (www.dcs.sala.ubc.ca/plan_it_calgary.htm)

Key Tools and Processes

The Design Centre team tailored three types of decision-support tools to integrate community indicators and performance measures to the Plan It Calgary context: **informing tools**, such as design scenarios, that educate decision-makers about implications relative to different design decisions; **framing tools** that articulate and organize community intentions and explicitly link these intentions to potential design choices illustrated in different design scenarios; and, **modeling tools** that reveal anticipated performance of alternative scenarios against indicators and thus serve to enhance knowledge-based decision-making processes.

The Design Centre team implemented these tools in an iterative series of multi-disciplinary stakeholder workshops and design charrettes hosted by the city, which engaged participants in articulating preferences and in creating and evaluating alternative scenarios against the indicators and measures. The design charettes—intensively visual, collaborative events carefully choreographed to engage diverse stakeholders in the process of community design—provided the opportunity to consult with many, to enhance the transparency of the decision-making process, and to explore alternative scenarios. Each scenario represented a potential alternative future for transportation and land use in Calgary.

Figure 1. The Suistainable Planning Framework
Credit: E.Campbell, S. Barron for Design Centre for Sustainability

Framing Tools: The Sustainable Planning Framework

The processes of integrating community indicators and performance measures, and designing to achieve community sustainability both represent complex challenges that involve consideration of multiple variables and stakeholder perspectives. The Design Centre's signature Sustainable Planning Framework addresses these challenges by using a framing tool to link community intentions to the selection and application of indicators and quantitative measures. The framework organizes the project vision, principles, goals, objectives, design-indicators, performance measures and targets into a strategic, decision-supportive structure (see Figure 1). It provides a structured and transparent approach for organizing stakeholder values relative to the full range of sustainability variables, or themes, including energy, water, natural habitat, economy, mobility, and so on. It also enables synthesis of existing policy and best practices with those community values in a format that supports performance-based evaluation of community design options. The framework is the road map that guides the project teams and participating stakeholders throughout a project, allowing the complexity of sustainability indicators/measures to be explored and communicated clearly, systematically and comprehensively, and to be strategically integrated into the policy-making process.

The Design Centre and City Team together developed the Plan It Calgary framework between January and April 2007. The high-level sustainability vision, principles, goals and objectives were drawn directly from the Long-Range Plan and 11 Sustainability Principles. This ensured that the outputs resulting from the project would reflect the

Table 1. Plan It Calgary Design Indicators

- Residential Diversity
- Land Use Diversity
- Proximity to Continuous Cycling Network
- Proximity to Transit
- Road Network Intensity
- Proximity to Open Space
- Open Space Intensity
- Infill Intensity
- Jobs Intensity
- Population Intensity
- District Energy Capacity

aspirations of the whole community for the future of Calgary. The Long-Range Plan provided the vision for the project, articulating a stakeholder based and imaginative concept for what Calgary should achieve in the future. The 11 Sustainability Principles provided the next level of detail, establishing the fundamental high-level characteristics of a sustainable city. The Design Centre team extracted goals and objectives from the Long-Range Plan by identifying and synthesizing those that related specifically to land use and transportation planning. The goals provided broad statements describing the conditions to be achieved to meet the intent of the principles, and the objectives described in greater specificity the steps needed to meet those conditions.

Indicators and Performance Measures in the Sustainable Planning Framework

Between February and April 2007, the Design Centre team and the City Team used the community aspirations related to physical planning/design/development identified through the imagineCalgary process to identify and select community indicators. As Plan It Calgary was exploring options for the future physical sustainability of Calgary, the project focused on measurable, design-specific indicators—those that are explicitly connected to physical community design options. For example, "residential diversity" is a design indicator measuring the range of housing types available in a community, while "affordable housing intensity" is an indicator of the effectiveness of affordable housing policy. Only the former is a physical, and therefore measurable, variable of design/planning options, and it provides a proxy measure for housing equity as diversity enables different family types to find appropriate housing.

Table 2. List of Plan It Calgary Performance Measures

- Residential diversity index (city-wide total)
- Residential diversity index (average)
- Land use mix diversity index (average)
- Land use mix diversity index (city-wide total)
- % of population within 400m of continuous cycling network
- % jobs within 400m of continuous cycling network
- % population within 400m of Light Rail Transit and Bus Rapid Transit corridors
- % jobs within 400m of LRT and BRT corridors
- % population within 800m of LRT and BRT corridors
- % jobs within 800m of LRT and BRT corridors
- % land allocated to roads
- Open space area/1,000 people
- % population within 800m of open space > 10 hectares (acres)
- % jobs within 800m of open space > 10ha (ac)
- % of new jobs accommodated in greenfield
- % of new population accommodated in greenfield
- % expansion of urbanized areas
- Jobs/ha (ac)
- People/ha (ac)
- % land area with densities supportive of district energy systems

The project also focused on forward-looking or leading design indicators that provide a means of evaluating development alternatives in relation to each other, as opposed to lagging indicators that evaluate the outcome of planning and design decisions that have already been made and implemented. For example, "proximity to effective transit" is a leading indicator measuring transit access potential within different planning alternatives, while "transit ridership" is a lagging indicator measuring the success of implemented transit policy. Only the former enables the evaluation of different planning options prior to costly decisions being made.

Eleven design indicators were identified for Plan It Calgary (see Table 1), each carefully linked to multiple objectives in the framework. A series of performance measures, or metrics, that offer a mechanism for measuring attributes were selected for each indicator. The use of multiple metrics linked to each indicator ensured that each community aspiration could be quantified under at least one indicator. Twenty metrics were identified for Plan It Calgary (see Table 2). Throughout the selection process, the Design Centre team worked closely with the City Team to develop indicators and metrics that were measurable using available data that touched on the full range of community aspirations and sustainability themes, and that could directly and clearly inform the evaluation of alternative design/planning options. This close partnership also assisted in building capacity in city staff to ensure that the indicators and metrics could continue to inform decision-making and enable project evaluation in the future and beyond the scope of this project.

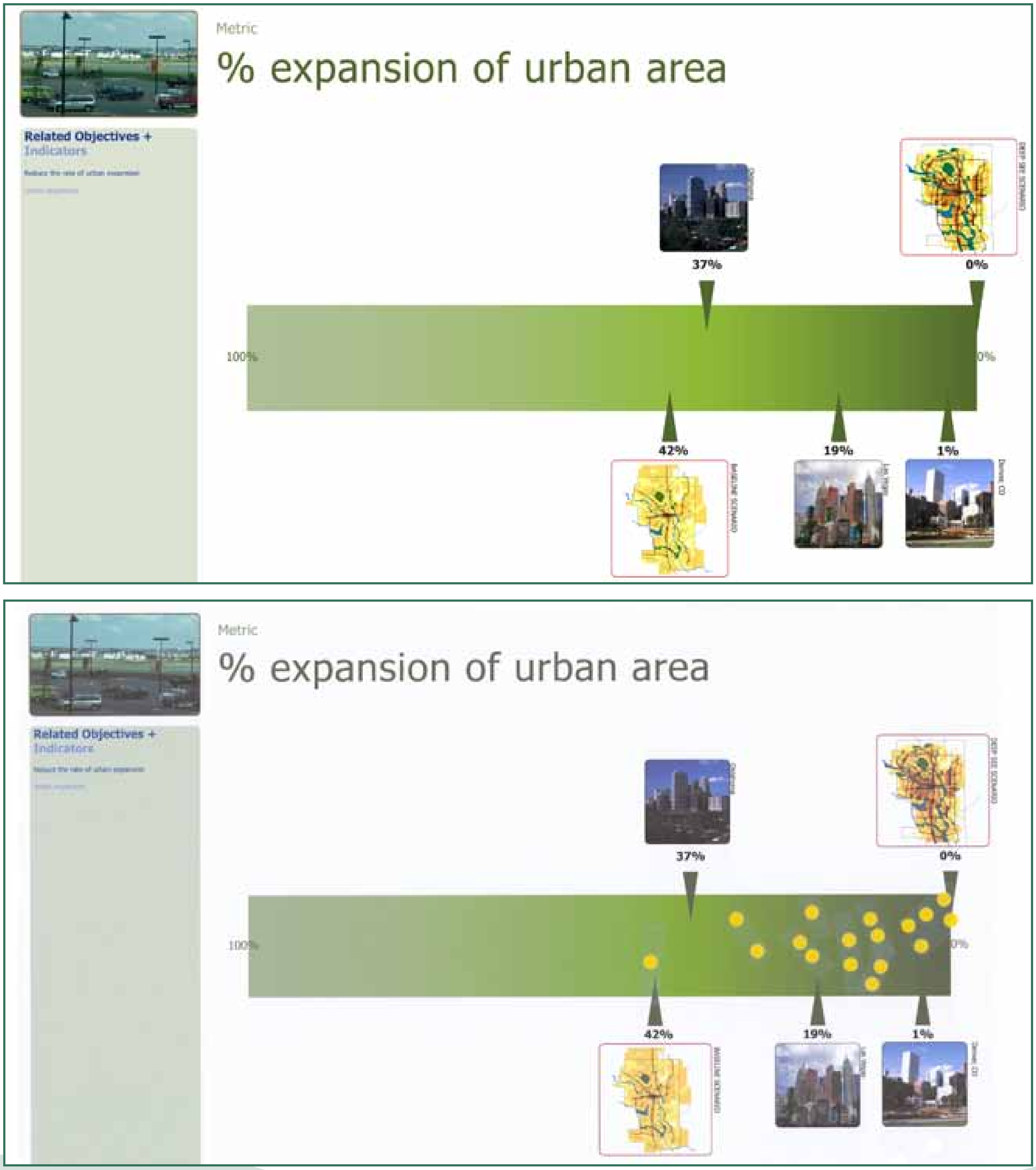

Figure 2. Performance Scale with Benchmarks *Before (above) and after with "sticky-dot-votes" (bottom).*
Credit: Design Centre for Sustainability

Targets in the Sustainable Planning Framework

Setting targets provided the next key step in supporting transparent, results-based decision-making using integrated community indicators and performance measures. While metrics express in clear and precise terms how performance will be measured, targets provide a guide for what kind of performance is expected. Targets set a desired magnitude for each indicator/metric combination and provide the foundation for discussing synergies and trade-offs toward achieving the best overall performance in relation to the community aspirations embodied in the framework. They provide means of empirically linking community sustainability values and the actions of evaluation, implementation and monitoring.

The Design Centre uses performance scales as a tool for setting and evaluating planning options against targets. A performance scale is a graphic visualization of information related to a single metric, including a range of benchmarks—researched and measured examples from other, similar communities or neighborhoods. The benchmarks provide comparisons for discussion in target-setting exercises, illustrating the appearance and performance of planning choices made by other communities. As alternative design scenarios are developed and evaluated throughout a planning process they provide additional benchmarks, allowing direct comparison between targets and potential planning solutions. In a target-setting workshop, stakeholders review and discuss benchmark data and vote individually on their suggested target for each performance measure by placing a sticky dot on the performance scale. The result is a target defined by the spread of dots, which describes the range of performance that the process suggests is appropriate and desirable in generating a community design and planning scenario

For the Plan It Calgary project, the Design Centre team and City Team developed and evaluated a range of alternative scenarios under different planning and design assumptions that, with additional researched benchmarks, populated performance scales for the use of stakeholders in developing their own separate scenario. While stakeholders from across Calgary's community were engaged in the imagineCalgary project, for the Plan It Calgary project, which focused more closely on implementation, stakeholders included representatives across all municipal government departments, as well as from the local development, building, and professional planning and design community.

Informing Tools: Alternative Planning Scenarios

Scenarios were the key informing tool, illustrating speculative, rather than predictive futures for Calgary that might result under different assumptions. Two iterative charrette events resulted in two alternative stakeholder-generated citywide scenarios—*compact* and *hybrid*—with two additional benchmark scenarios (*2005 baseline*, *dispersed*) generated by the project team. As applied during the Plan It Calgary project, a charrette is "a time-limited, multiparty design event organized to generate a collaboratively produced plan for a sustainable community."[8] The charrette brings together a full range of stakeholders and experts, such as citizens, community advocacy groups, service providers, local government, design/planning and development professionals, sustainability experts, and city staff from various departments. It equalizes all voices around a collaborative design table, provides a venue for actively solving the presented design problem, and gives a limited time within which to solve it. With good facilitation, the result of a design charrette is a single solution that presents a consensus solution.

The 2005 baseline (see Figure 3) and dispersed scenarios (see Figure 4), both developed by the City Team with assistance from the Design Centre, provided reference points against which to evaluate the scenarios generated by the City Team and stakeholders. Generally, the 2005 baseline scenario illustrates existing conditions at that time, while the dispersed scenario illustrates how the city would develop under existing city policy. The dispersed scenario represented the most modest achievement under the sustainable planning framework, with most new jobs and housing accommodated outside the existing city footprint, which would also require using additional land outside the current city boundary. Under this scenario, a radial rapid transit network supports the city and existing open space is maintained.

At a two-day charette in May 2007, the Design Centre team helped the City Team develop the compact scenario (see Figure 5). The goal of this scenario was to maximize performance across all indicators, creating the most sustainable future for Calgary imaginable. Generally, the compact scenario accommodates the expected growth of population and jobs by 2075 within the existing built footprint of the city. This infill is supported by development of a robust interconnected network of high-capacity transit service and new multi-modal corridors.

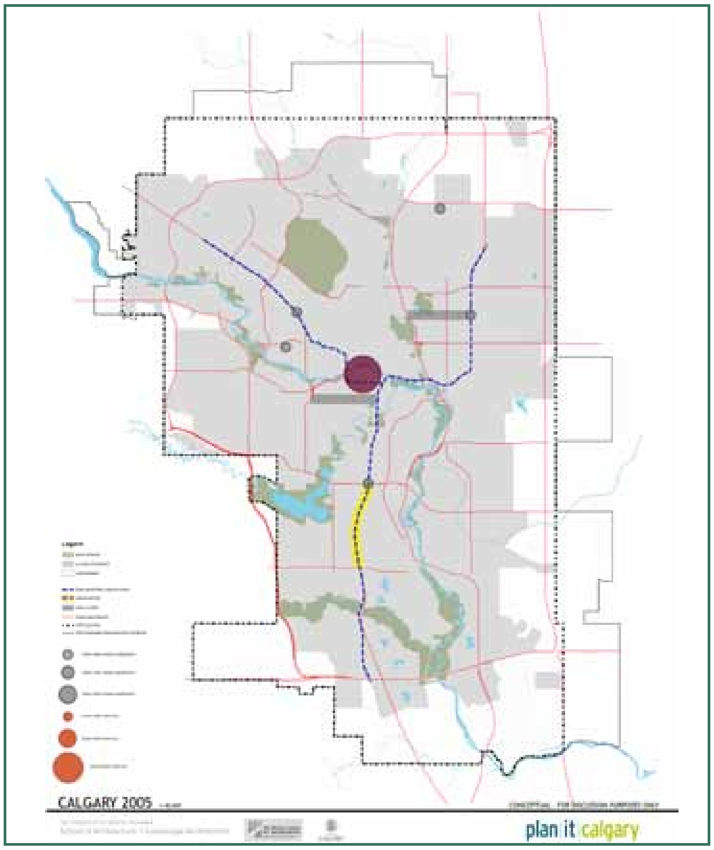

Figure 3. 2005 Baseline
Credit: N. Miller for Design Centre for Sustainability

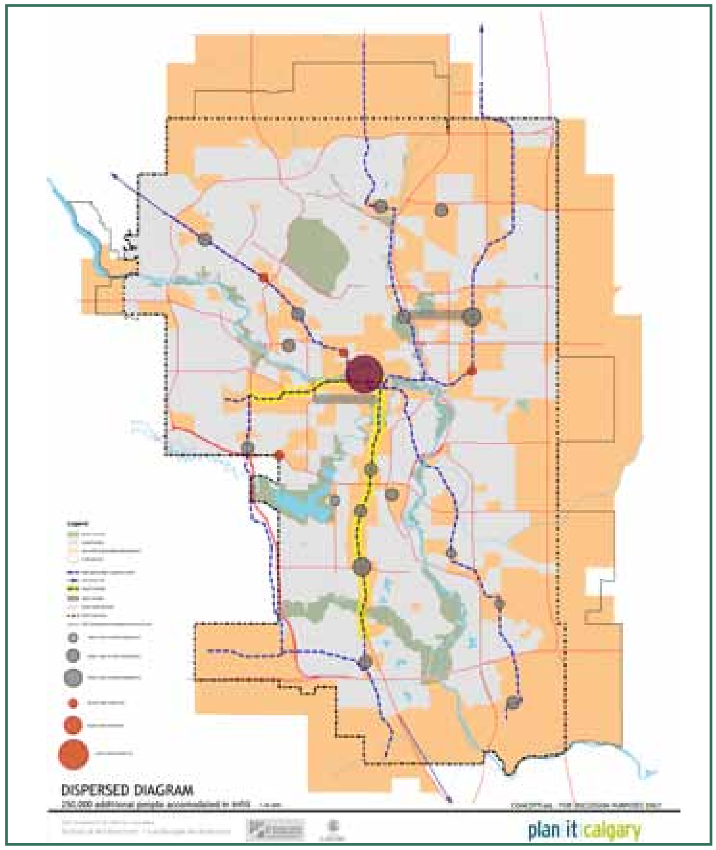

Figure 4. Dispersed Scenario
Credit: N. Miller for Design Centre for Sustainability

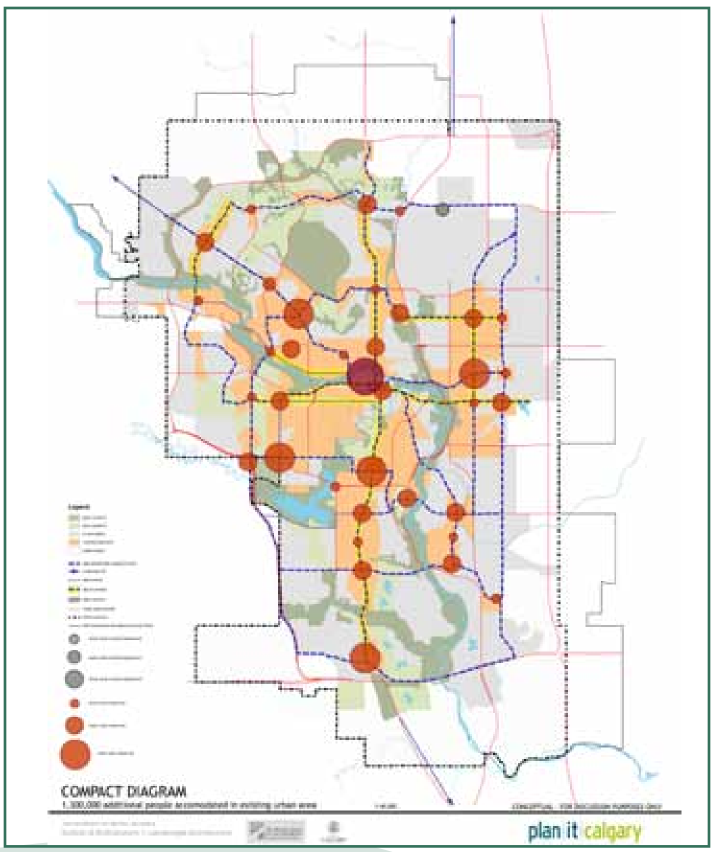

Figure 5. Compact Scenario
Credit: N. Miller for Design Centre for Sustainability

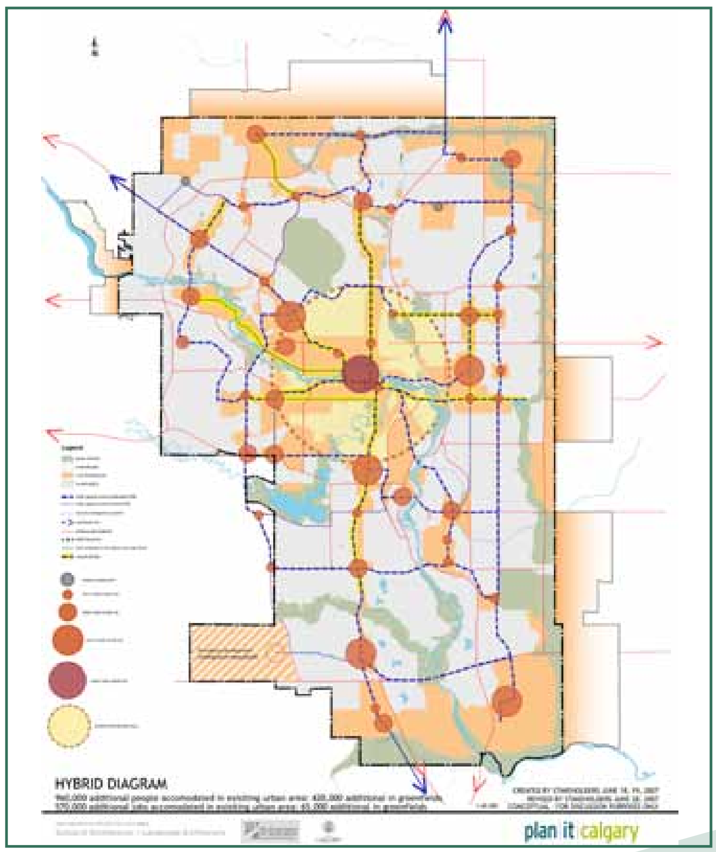

Figure 6. Hybrid Scenario
Credit: N. Miller for Design Centre for Sustainability

Figure 7. Sustainable New Neighborhood Concept Plan
Credit: W. Byrd for Design Centre for Sustainability

Development intensity is targeted along the transit corridors and in activity centers at the intersections of these corridors. The existing open space is enhanced and connected with new green networks.

At a two-day charrette in June 2007, the Design Centre team worked with representative members of the City Team and invited stakeholders from Calgary's planning/design, development and building community in developing the hybrid scenario (see Figure 6). Participants first used performance scales to set their desired target range, which then guided discussions in the design and planning phase. Generally, the hybrid scenario accommodates all the expected growth of population and jobs by 2075 within the existing city boundary. Growth outside the boundary is allowed in areas with approved area structure plans and therefore have already begun the first step of the development process. An interconnected high-capacity transit network supports this infill. Development intensity is targeted in the inner city, with some also located along transit corridors. The existing open space is enhanced and connected with a new green belt around the city edge.

Two four-day case study charrettes were conducted at the neighborhood scale to explore integrated solutions at a finer level of detail. In March 2008, the Design Centre team facilitated the charrette team—city staff, community members and local professionals—in examining 17th Avenue South East,a key east-west commercial throughfare that passes through a number of neighborhoods. The charrette team re-envisioned the corridor as a multi-modal urban boulevard with mixed-use activity centers surrounded by single-family neighborhoods. In June 2008 the Design Centre team facilitated local developers, builders and planning and design professionals in examining sustainable development of new neighborhoods at the city edge, where some ongoing development will continue to evolve. The resulting conceptual neighborhood design (see Figure 7) envisions a complete community centered at the intersection of primary transit corridors and features robust, interconnected open space throughout surrounding residential areas.

In addition to scenario generation, the Design Centre team facilitated six workshops to test preliminary sustainable design strategies and development patterns within the Calgary context. Using case study examples from real-world projects, expert participants including city staff, service providers such as transit and power company representatives, and local builders and developers collectively designed six typical neighborhood conditions that are common to many parts of Calgary. These workshops both allowed testing of best design/ planning practices within the specific Calgary context and provided a simple calibration of the data used for the modeling process (see below).

Modeling Tools: Measurement and Evaluation of Scenarios

The Design Centre team used an innovative modeling method based on development patterns to measure and evaluate the different scenarios against the performance measures and community indicators. The Design Centre and faculty and students from The University of British Columbia's School of Architecture and Landscape Architecture worked in collaboration to develop an integrated modeling and design methodology that enables empirical evaluation of iterative design options.[9] Using measured case studies of sample parcels, streets and open space representing both existing characteristics and projected, more sustainable, future characteristics in Calgary, this modeling methodology links specific, measurable data to graphic representations of different community design options, represented by scenarios.[10]

The Design Centre worked closely with the City Team to build capacity such that the performance measures and modeling methodology developed for this project can be used by city staff into the future to evaluate newly proposed and developed projects against the community indicators, ensuring that the evolution of Calgary continues to meet community priorities for sustainability. For example, members of the City Team worked one-on-one with Design Centre staff to gather measurement data, to determine the parameters for choosing which collected data to use, and to calculate the final measures, allowing city staff to undertake the same process independently in future evaluations.

Once modeled, the resulting empirical measures enable differentiation between scenarios and associated design/planning strategies that appear sustainable but perform less sustainably from those that may not look sustainable but perform better sustainably. For example, although the compact and hybrid scenarios incorporate the same high-capacity transit network, the policy of 100 percent infill with density located along transit corridors applied under the compact scenario means that it performs much better against measures for the "proximity to transit" indicator. As another example, the hybrid and compact scenarios incorporate an expanded open space network largely in neighborhood parks and green streets and, therefore, perform well against measures for the "proximity to open space" indicator. The dispersed scenario, however, which doesn't graphically appear to have much less open space than the others, in fact has a weak policy regarding the development of new parks and open space. As a result, it performs less well than even the hybrid, dispersed and 2005 baseline scenarios.

The Completed Sustainability Framework: Strategies and Actions

Strategies and actions complete the sustainability framework. Drawn from the evaluated scenarios, specific planning/design strategies illustrate how to best achieve the desired performance with respect to the measures and related community indicators.

The final *Municipal Development Plan* (MDP) and *Calgary Transportation Plan* (CTP), which were approved by city council on September 2009, most closely resemble the hybrid scenario. Some examples of specific planning/design strategies from that scenario and the neighborhood scale case studies that directly informed the development of policies in these official plans are:

- Strengthen downtown as the primary center, surrounded by well-connected mixed-use neighborhoods;
- Support the development of complete communities;
- Direct a greater share of new jobs and housing growth to transit corridors and activity centers located on transit corridors (see Figure 8);
- Locate major community uses, such as schools and medical institutions, in activity centers close to jobs, homes and transit;
- Provide a more robust mix of land uses to support a range of employment, residential, retail and services to support the needs of the community;
- Provide a range of housing types and tenures (i.e., ownership or rental options) to support the needs of different family types and incomes (see Figure 9);
- Create interconnected streets and an urban environment that supports walking and cycling;

Figure 8. Future Transit Corridor Concept
Credit: S. Barron for Design Centre for Sustainability

- Create an interconnected and comprehensive park and open space network that incorporates characteristic elements of the natural landscape, such as waterways, tree stands and topography.

Barriers to Integration and Methods to Overcome Them

A primary barrier to integrating community indicators and performance measures, particularly in the area of sustainability, is the lack of a transparent method for linking citizen values in a measurable way with implementation strategies and actions. The process used by the Design Centre for the Plan It Calgary project was specifically designed to overcome this barrier, using the Sustainable Planning Framework, a robust engagement process, and modeling tools specifically designed to facilitate an informed understanding of how the initial intentions fared across different growth scenarios.

By their nature, citizen values are complex, particularly those related to the integrated systems involved in sustainable community design, including housing, water, energy, jobs, habitat, recreation, etc. The Sustainable Planning Framework structures these values and issues in a way that explicitly connects them to selected indicators and metrics that address all key community aspirations related to the physical planning, design and development of the city. For the Plan It Calgary project, each

Figure 9. Different Housing Types in One Block
Credit: J. Teed for Design Centre for Sustainability

performance measure explicitly linked to one or more community indicators. The indicators each linked to the goals derived from the Long-Range Plan, which was generated using the input of more than 18,000 Calgary residents. For example, Plan It Calgary used the performance measure "percent population and percent jobs within 600 meters of Light Rail Transit/Bus Rapid Transit corridors," which was a metric of the indicator "transit network," which directly responded to the imagineCalgary objective to "increase use of non-auto transportation infrastructure" and associated goal to "provide a variety of transportation options." Planning and design strategies that provide the detailed content for policies illustrate specifically how to achieve the targets related to each metric and associated indicator. These strategies directly informed the generation of the revised *Municipal Development Plan* and *Calgary Transportation Plan*, which were adopted by council in September 2009. These official documents, therefore, are the policy embodiment of the values exemplified in the community indicators.

The iterative engagement process developed and facilitated by the Design Centre for the Plan It Calgary project is another important method for overcoming integration barriers. The workshops and charrette events brought together a range of participants, including citizens, community advocates, different city departments, local builders and developers, and professional planning and design experts (see Figure 10). Building on the robust community-wide imagineCalgary process, this project carried engagement and collaboration through all stages of the policy-making process.

Although the framework, engagement methods and modeling tools can be used to integrate widely diverse community indicators and performance measures, this project had a land use and transportation focus that did not directly touch on community aspirations outside the physical planning and design related to these sectors. Sustainability in these areas, however, naturally results in some benefits for other aspects, such as economic development and social needs.

Documented Results

The Plan It Calgary project featured an unprecedented, integrated land use and transportation planning process that not only fully integrated community indicators and performance measures, but also strategically combined the planning and implementation work of the land use and transportation sectors within the city. The project began in 2007, with the Design Centre being engaged as a project partner over 2007 and 2008. Through 2009, the City Team used the community indicators, performance measures, and scenarios and design/planning strategies generated through

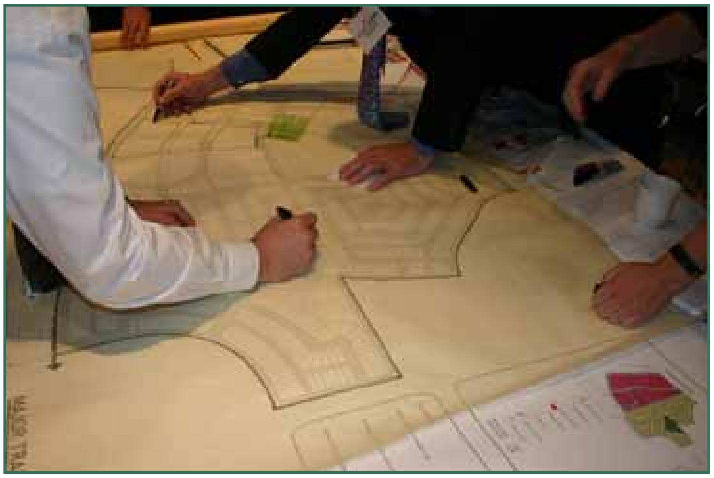

Figure 10. Participants collaborating in design activities at a charrette.
Credit: Design Centre for Sustainability

partnership with the Design Centre to inform their generation of the new *Municipal Development Plan* (MDP) and *Calgary Transportation Plan* (CTP), which were approved by city council in September 2009.

As described in the official plans, the MDP[11] and CTP[12] are active documents in that, while they define strategic policy direction, the city will periodically measure progress toward that policy direction using the indicators and metrics developed in partnership with the Design Centre. The Design Centre worked closely with the city team to ensure that the highly replicable tools and methods used through the Plan It Calgary project was transferred to city staff, building capacity and enabling staff to actively implement ongoing monitoring and reporting. The monitoring and reporting program will provide performance evaluation to council, staff and the public. Reporting will coincide with the city business planning cycle to inform investment and growth decision-making and guide implementation strategy and corporate process planning in accordance with the goals of the MDP and CDP. City staff will also be able to apply this type of process to future community and neighborhood planning and design activities, thereby elevating indicator and measures integration throughout future city projects.

The project also features documented sustainability outcomes. By using the community indicators and performance measures to inform the generation of and to evaluate the performance of alternative scenarios, the project teams were able to assess the benefits of different options before costly decisions were made. The resulting MDP and CTP are closely aligned to the hybrid scenario, which achieves better than comparative benchmarks (dispersed scenario and 2005 baseline scenario) in 100 percent of indicators, as the integration of sectors through the project enabled the MDP and CTP to capitalize on synergies, thereby more effectively achieving community aspirations for the planning, design and development of their city.

Lessons Learned

A key lesson learned through the Plan It Calgary project is the relationship between effective communication and successfully integrating community indicators and performance measures. The project successfully used the described tools and engagement methods to integrate community indicators into local government performance measures and design/planning policy, but it also served to enhance communication and action among different government sectors and the community and government.

The sustainability framework structured the discussion and decision-making process in a clear and transparent way, ensuring that selected strategies were carefully linked to the desired performance for the indicators and metrics. The engagement methodology saw staff from the land use planning and transportation planning and engineering departments of Calgary work together to better integrate land use and transportation development toward achieving sustainable community development. The workshops and charrettes also brought city staff together with community business and development stakeholders to better understand the barriers and opportunities for sustainable community development in a range of physical conditions.

This project would have been more robust, however, had a wider range of community stakeholders been included through the Plan It Calgary project, such as representatives from community interest groups, local business associations and the like. Providing a clear structure for decision-making and engagement was invaluable to achieving successful and mature integration.

Implementing a robust process that engages a wide range of values is a challenge that is not always successfully overcome. Some perspectives may be too far outside those held by the majority of participants to easily facilitate understanding and consensus. Through this process the team found that spending as much time as necessary on plenary discussions to achieve the highest level of agreement resulted in a more transparent understanding and broader support of the resulting design/planning solutions.

Providing an opportunity for all voices to be heard and collectively finding a means of blending different ideas into a single outcome means participants can identify how their input has informed the project and outcomes. While some participants might continue to find issue with specific details at the close of the official engagement event, our experience has shown that, over time, these concerns fade and are replaced with an acceptance of the need to balance different values and needs. We have found that this transformation occurs more easily within a four-day, rather than a two-day, workshop or charette.

Conclusion: A Fully Mature Integration Model

The Plan it Calgary project was given honorable mention for the Community Indicator Consortium's 2009 Community Indicators-Performance Measures Integration Award and presents an informative example of successfully integrating indicators and measures. The project exhibits all the mature integration characteristics, as described in the *Community Indicators-Performance Measures integration Descriptive Model*, including:

- **Citizen-driven community indicators**: Each community indicator relates to the objectives identified by the *imagineCALGARY Plan for Long-Range Urban Sustainability*, ensuring that every community aspiration relating to the physical planning/design/development of their community was captured by at least one indicator.
- **Performance measures linked to community indicators, and quantifiable and measurable results**: Each indicator relates to at least one performance measure, ensuring that every community aspiration linked to those indicators was captured by at least one measure. Also, each performance measure is easily measureable using common data and widely available GIS technology.
- **Transparent, results-based governance/decision-making**: The indicators and measures directly guided development of alternative land use and transportation planning scenarios, generated by the

project teams in collaboration with key citizens, stakeholders, and governmental and nongovernmental entities. Quantified and evaluated against the indicators and measures, the scenarios directly informed generation of the *Municipal Development* (MDP) and *Calgary Transportation* (CTP) plans, ensuring they conform to citizen priorities.

- **Evidence on demand**: The MDP and CTP include the indicators and measures linked to identified community priorities, and will regularly be tested against these to evaluate progress toward long-term goals. The monitoring and reporting program will regularly provide results to council, staff and the public, and will guide strategic decision-making.
- **Committed accountability**: The Plan It Calgary project integrated diverse government, public, nonprofit and business stakeholders throughout.

The Design Centre's tools and processes are extensively illustrated through project descriptions on the centre's website, making them easily accessible to other communities/jurisdictions. Many of the tools used by the Design Centre, such as framing sustainability, modeling with GIS technology and the charrette process, are well-known and easily replicable in other communities/jurisdictions. However, the Design Centre faculty and staff have been employing these tools in integrated indicator/measure projects for more than 12 years. For this project, the team significantly tailored the capabilities and form of these tools to create a more open, flexible and better-integrated tool platform suited to framing, informing and modeling sustainability in an integrated and collaborative design process.

Wrap-up

About the Authors

Jackie Teed is a practitioner of landscape design and sustainable community planning, offering particular expertise in synthesizing multiple inputs and opinions into integrated and balanced results. Jackie elevates local materials, construction practices and landform to deliver contextual, leading-edge projects that influence local professional practice, such as in those completed in over 12 years of private practice in Canada and China. She works closely with local governments, consultants, researchers and citizens to support the translation of sustainability intentions into built projects, such as in her role as senior manager at the Design Centre for Sustainability, for which Teed oversaw award-winning projects such as Plan It Calgary, the 100-Year Sustainability Vision: North Vancouver, and the Getting to Minus 80 project, awarded the 2010 American Society of Landscape Architecture Honor Award in Research. Bringing knowledge in both design and process, Jackie has led design studios and lectured in the University of British Columbia School of Architecture and Landscape Architecture as well as in Simon Fraser University's City Program. She is a senior planner in New Westminster, British Columbia.

Elisa Campbell has been at the leading edge of defining and implementing sustainability for the built environment for 20 years. With a background in social science and architecture, she has a unique ability to marry strategic thinking with creative design processes. She is an expert in developing and conducting sustainability assessment, indicators and certification processes, and is an agent of collaborative change processes. She was executive director of the Design Centre for Sustainability at University of British Columbia for the past nine years. She is currently principal of Elisa Campbell Consulting in Vancouver, British Columbia.

About the Series

Finding and documenting "Real Stories" of communities that have tried—successfully and not-so-successfully—to integrate community indicators and performance measures is vital to increasing knowledge of CI-PM integration. The Real Stories are intended to provide real-life examples of the advantages to both community indicator and organizational performance measurement projects as a result of integrating these two types of efforts:

- community indicators would have a greater influence on what governments and organizations do to improve a community and
- governments' and organizations' performance measures would be more relevant to the community conditions that are of the greatest concern to citizens and other key community stakeholders.

These Real Stories are also intended to provide practitioners' tools and practices, which will allow other communities to learn from, and improve on, these efforts.

About the Community Indicators Consortium

CIC was organized in the belief that information sharing, collaboration and open dialogue—across geography and disciplines—are key to the advancement of people, the quality of community life and the sustainability of our shared environment. To that end, CIC seeks bridges that span the gap between community indicators use and performance measurement, providing ways for community groups and governments to coordinate efforts and jointly enhance knowledge about the use of indicators to leverage positive change.

Through these activities, CIC has become a major node in the expanding field of community measurement. The CIC website offers a place where community-based practitioners, academic experts, engaged community residents, public officials, students, civic leaders, planners, media professionals and other stakeholders can learn from one another and participate in an active global learning community.

Contact us

Community Indicators Consortium
129 Church Street, Suite 604
New Haven, CT 06510
(860) 880-0191
general@communityindicators.net

Endnotes

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