RESEARCH REPORT

SUSTAINABLE COMMUNITY PLANNING AND DEVELOPMENT: DESIGN CHARRETTE PLANNING GUIDE

FINAL REPORT

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DESIGN CHARRETTE PLANNING GUIDE

FINAL REPORT

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POST-CHARRETTE

EXECUTIVE SUMMARY

Design charrettes are becoming increasingly popular as a way to bring a range of expertise and interests together to collaborate on creating innovative design solutions that embody multiple objectives and mutual interests. They give visual form to ideas and policies and can be used to test and refine planning and development policies and directions. Overall, they are a means to obtain the most creative proposals for addressing the most difficult problems in the least amount of time.

With such apparent benefits, the popularity of design charrettes for sustainable community planning comes as no surprise. Undertaking a sustainable community design charrette, however, is no small undertaking. There are a multitude of issues to be addressed and decisions to be made; a lot of preparatory and follow-up work to be done; and significant human and other resources to be found and organized. Those that have experienced the success and benefits of undertaking the challenge have found their effort well rewarded and, as a result, others are wanting to learn how they can use design charrettes for their own sustainable community planning efforts. This manual is intended as a guide for those who would like to host or otherwise initiate a design charrette process for sustainable community planning. It is directed particularly at the urban planning context but has application to other planning contexts as well.

The opening chapter, *Getting to Know the Ground,* begins with an introduction to the concepts and elements of sustainable development and 'sustainable community,' and the role of design. Design charrettes and charrette-like events are then explored in more detail in terms of their purposes, usefulness and contribution to policy development and community planning. The chapter is intended to provide foundational information regarding sustainability planning, and guidance for deciding how a design charrette can be useful in your local community.

Beginning the Journey outlines key issues and steps involved in confirming a 'go ahead' for hosting or otherwise becoming involved with a charrette. This section examines the decision-making context, allies and resources, ways of building support and promoting the plan, and getting formal approvals. "Readiness Assessments" help you determine whether or not you are ready to proceed and what to do next in accordance with your answers.

Pre-Charrette Planning: Roll up Your Sleeves is focussed on the host of tasks to be completed in advance of a charrette. It includes sections on the stakeholder community and communications; consultants and facilitators; advance meetings and options; design issues including detailed discussion on the development of the design brief; design team formation and participant selection; time and timing; venue and facilities; support materials; and additional logistics. Sample schedules, products and lists are provided to help you through the process.

Chaos and Creativity: The Charrette Event focuses on the choreography, management and documentation of the charrette itself. Guidance and coaching hints for handling all the products of the charrette along with post-charrette communications and presentations is continued in the final chapter, *Post-Charrette*: *Managing & Maximizing the Aftermath.*

It is hoped that the manual helps to increase users' understanding of design charrettes, enables them to plan and deliver successful and productive charrettes, AND have fun in the process.

RESUME

Les charrettes de conception sont de plus en plus prisées pour amener des personnes possédant une expertise et des intérêts divers à créer ensemble des concepts de rechange innovateurs qui traduisent bien les objectifs multiples et les intérêts communs. Elles donnent corps aux idées et aux principes directeurs et peuvent être employées pour évaluer et peaufiner les politiques et les orientations de planification et d'aménagement. Dans l'ensemble, les charrettes de conception constituent un excellent moyen pour obtenir les propositions les plus créatives et aborder de front les questions les plus difficiles à très brève échéance.

En matière de collectivités durables, l'engouement pour les charrettes de conception n'a rien d'étonnant compte tenu de leurs avantages apparents. La mise sur pied d'une charrette de conception sur les collectivités durables ne va pas nécessairement de soi. Les organisateurs doivent surmonter de nombreux obstacles et prendre une multitude de décisions, en plus de s'acquitter de nombreuses tâches et activités de suivi ainsi que de trouver beaucoup de ressources, tant humaines que matérielles, et d'en assurer l'organisation. Les personnes qui ont connu du succès après avoir relevé ce défi en ont constaté les avantages et leurs efforts ont été amplement récompensés. Par conséquent, d'autres intervenants aimeraient bien apprendre comment ils peuvent utiliser les charrettes de conception dans leurs efforts de planification de collectivités durables. Le manuel dont il est question ici est censé servir de guide pour les personnes qui souhaitent accueillir ou amorcer une charrette de conception sur la planification des collectivités durables. Le guide s'applique explicitement au domaine de l'aménagement urbain, mais peut également convenir à d'autres contextes de planification.

Le premier chapitre intitulé Reconnaissance du terrain, commence par introduire les concepts et les éléments de développement durable et des collectivités durables, ainsi que le rôle imparti aux concepteurs. On examine ensuite plus en détail les charrettes de conception et activités semblables en fonction de leurs buts, de leur utilité et de leur contribution à l'élaboration de politiques et à la planification des collectivités. Le chapitre fournit des informations fondamentales sur la planification durable, ainsi que des conseils permettant aux utilisateurs d'utiliser à bon escient les charrettes de conception dans leur collectivité.

La partie C'est un départ donne un aperçu des enjeux et des étapes clés de l'organisation d'une charrette de conception ou si l'on participe à sa mise sur pied. Cette section examine le contexte de prise de décision, les alliés et les ressources, les façons de susciter le soutien du plan et d'en faire la promotion ainsi que la marche à suivre pour obtenir les approbations officielles. Le chapitre intitulé Évaluation de l'état de préparation vous aidera à décider si vous êtes prêt ou non à poursuivre, et vous indiquera la suite en fonction de vos réponses.

Planification de la charrette : La partie intitulée Retroussons nos manches met l'accent sur la multitude de tâches à accomplir avant la charrette. Elle comprend des sections sur les intervenants des collectivités et les communications, les consultants et les animateurs, les réunions de planification et autres options, les problèmes de conception, dont les discussions détaillées portant sur l'élaboration de l'énoncé de conception, la formation de l'équipe de conception ainsi que le choix des participants, le temps accordé et le calendrier, le choix de l'emplacement et des équipements, le matériel de soutien et tout élément additionnel de logistique. Des exemples de calendriers, de produits et de listes sont fournis pour vous aider à comprendre les processus.

Chaos et créativité : La section intitulée La charrette proprement dite est axée sur le déroulement et la gestion de la charrette ainsi que sur la documentation de soutien. Dans le dernier chapitre intitulé L'après-charrette : gestion et optimisation des résultats, on traite de trucs et de conseils pour gérer les produits de la charrette, en plus des communications et des comptes rendus des exposés. Il est à souhaiter que le manuel aidera les utilisateurs à mieux comprendre les charrettes de conception, à les planifier et à les réaliser avec succès et efficacité, tout en ayant du plaisir à la faire.

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GETTING TO KNOW THE GROUND

'Sustainability' (or 'sustainable development') is a concept that is steadily permeating community planning work across Canada. Municipalities, designers, interest groups, and community activists are addressing the need to look ahead and ensure policy, programs, administration and development are building a strong foundation for the challenges the future will bring. While inquiries and initiatives into sustainability can take many forms, to be effective, they must result in new directions and practices that directly influence how a community is planned, designed, built and managed. Charrettes are an effective tool that communities and development teams can use to integrate the many stakeholders, interests, complex issues and objectives that characterize sustainable community planning and development.

This chapter begins with a brief overview of sustainable development and an exploration into the concept and elements of 'sustainable community' and the role of design. We then look in more detail at 'charrettes' (description, origin, purposes, charrette-like events, etc.) and their usefulness and contribution to policy development and community planning.

SUSTAINABILITY/SUSTAINABLE DEVELOPMENT

> *[Meeting] the needs of the present without compromising the ability of future generations to meet their own needs.* — WCED, 1987

Arising out of an increasing awareness of the inadequacies and negative effects of past choices and related choice mechanisms, sustainable development is ultimately concerned with assuring human health and well-being now and in the future. Human existence depends on our ability to draw sustenance from natural resources in ways which do not destroy the natural systems which regenerate Earth. Throughout history humans have impacted the regions in which they lived. Until recently, populations were small and the impacts localized; the design and management of the community had effects only on the sustainability of the local region. Since the industrial revolution, however, the growth in industrial technology and activity, combined with exponential growth in population and the associated impacts of a growing consumption-driven society, have become a threat to the stability and longevity of the earth's regional and planet-scale ecosystems. 'Sustainable development' is a call for increased understanding of, and response to, the long term environmental, social and economic effects of current development and lifestyle patterns.

We don't intend here to provide a detailed discussion of the evolution of the concept and ideas of sustainable development and the challenges it represents. We assume that anyone who is exploring the use of design charrettes for sustainable community planning already has at least some grounding, and may already be well-versed in sustainability. Instead, we focus on the core principles and the key issues of sustainability that need to be central to any sustainable community policy and development planning project.

Framework

The health of three spheres of concern are seen as the foundations of sustainable development:

Environment
Society
Economy

The relationship of these three in the context of sustainable development has been likened to a three-legged stool. Just as a three-legged stool becomes unstable or unreliable if one of its' legs is weak or otherwise out of balance with the others, so too must the issues of each sphere be adequately and sufficiently addressed in order for a project to be sustainable. Exhibit 1 provides a simple representation of a framework for sustainable development.

Exhibit 1: A Simple Representation of Sustainable Development Goals and Requirements

Achieving the primary goal of sustainable development.	Human Health and Well-being		
requires health and balance of various systems	Economic Systems	Environmental Systems	Social Systems
and, therefore, attention to conditions and exchanges within those systems.	Human-Environment Relationships	Relations within & across Ecosystems	Human-Human Relationships
Sustainable development incorporates three primary, foundational principles	Meet human needs (material & non-material)	Maintain ecological integrity	Ensure equity & social justice
and three supportive, process-oriented principles	Facilitate Participation & Cooperation	Use Appropriate Technology	Develop Appropriate Organizational Structures
intended to facilitate the meeting of sustainable development's goals .			

But sustainability requires more than attention to each individual sphere. Evolving beyond concepts associated with each of the individual dimensions — beyond environmentalism (which would focus primarily on environmental objectives) or social activism (which focuses on social objectives) or simple profit-driven endeavours (focusing entirely on economic concerns) — a sustainable development seeks to find creative solutions which connect and integrate objectives across the spheres of concern. If sustainable development is to be achieved, it will require finding ways to integrate, and achieve dynamic balance within and between, individual, societal and ecological systems and thereby (at minimum) ensure that fluctuations do not exceed limits of tolerance. In effect, the goal is to create 'synergy', that is, a harmonious working together of these systems in order to ensure the health of each system and to improve the functioning of the collective whole.

Key Issues

Extensive work around sustainable development has focused on finding ways to meet needs while reducing negative impacts on the environment. The work typically revolves around several key issues that make sustainable development different from conventional development.

Climate Change and Air Quality

In the past century, human activity has greatly increased the presence of several key gases (commonly called greenhouse gases), most notably carbon dioxide, in the atmosphere. Much research and broad discussion has taken place on the warming of the atmosphere and changes in climate and air quality associated with this phenomena. The changes to the climate pose significant danger to human and ecosystem health and environmental equilibriums around the planet.

KEY ISSUES

Climate Change and Air Quality
Energy
Water
Food Security
Sustainable Utilization and Carrying Capacity: resources and waste
Biodiversity
Economic Prosperity, Equity and Stability
Community Health & Well-being

> Sustainable communities endeavour to minimize or eliminate the production of air pollutants and greenhouse gases wherever possible. This issue is particularly important for Canadian communities because most of the significant increases and impacts of warming are expected to take place at the poles, and much of Canada will, therefore, be affected.

Energy

The significant growth in industrialization and population in the past century has been directly linked to the growth in consumption of fossil fuel based energy sources. These sources are finite and, as such, complete reliance on them is not sustainable.

> Sustainable communities endeavour to be energy efficient and refocus their energy supply on renewable, non-fossil-based fuels. This issue is complex but of great importance to Canadian communities as most have been built in an era of plentiful cheap energy and, as the energy markets and supplies change, the increased costs to lighting, heating, transportation and all aspects of the economy may have many significant detrimental effects on Canadian society and its economy.

Water

An adequate supply of clean water is a foundation requirement for human settlement and health. The industrial and agricultural activities pursued in the past century have compromised the availability of clean water in many communities through over use and contamination. Global climate change is further exacerbating these problems.

> Sustainable communities endeavour to develop and manage themselves in a way that respects their regional hydrological systems. They minimize use of water and maintain or rehabilitate water quality where possible. Canada, with a significant amount of the world's fresh water, is only now facing issues many other nations have faced in the past: the challenge of managing its' water resources responsibly with respect to agricultural, energy and industrial impacts.

Food Security

The methods used to grow food for many in the world are currently unsustainable due to an extensive dependence on petroleum-based fertilizers, failing water sources and the loss of soil quality. Global warming, desertification, urbanization and the economics of the global food business are affecting the amount of arable land available for growing food around the world. While food can be grown in greenhouses in more industrialized countries, this approach can only supply some types of food and requires additional energy.

> Sustainable urban developments address food security strategically through providing opportunities and encouragement for the community to grow food for themselves in open space, balconies and rooftops. Commercial food production may or may not be involved. The urban agriculture system benefits by integration with composting and progressive water management systems.

Sustainable Utilization and Carrying Capacity: Resource Use and Waste

The model of economic development in the industrialized world emphasizes increased industrial activity and the extraction of resources and production of goods. This approach to resource stocks has resulted in over-exploitation of many non-renewable and renewable resources and the production of significant amounts of waste — an approach that cannot be sustained far into the future.

> Sustainable communities endeavour to ensure the future health of renewable resources and to minimize the use of non-renewable resources and the production of waste. Careful design and implementation of harvesting, production and waste management systems ultimately eliminate the concept of waste altogether: what is now seen as waste products are turned into a resource for another activity through alternate use, re-use and recycling. Given the significant amount of capital resources expended each year dealing with waste, sustainable waste management systems offer many economic and environmental opportunities to Canadian municipalities.

Biodiversity

The planet's biosphere is made up of many interconnected ecosystems comprised of complex relationships of species and habitats. Human population expansion, economic activity and development in the past century have significantly degraded many ecosystems; this has resulted in decreasing biodiversity and destabilization of ecosystem health, productivity and equilibriums. Many species have become or are currently becoming extinct from the physical or chemical disruption of their habitats.

> Sustainable communities endeavour to minimize physical and chemical disturbances to any ecosystem potentially impacted by human activity. As Canadian communities grow, attention is needed to ensure the disturbances associated with development and increased economic activity do not damage the integrity of ecosystems and key habitats.

Economic Prosperity, Equity and Stability

The context for economic patterns and prosperity in Canadian communities has changed in the past half-century and is now interconnected to global flows of resources, information and money. While this direction has brought many benefits, it also can destabilize and threaten a community's ability to sustain itself economically.

> Sustainable communities endeavour to develop a stable local economy through building diverse economic bases and infrastructure systems that are predicated on responsible and sustainable management of resources and the building of a resilient base of expertise, capacity and capital. Such a base can offer the necessary diversity of business and employment opportunities to permit

all residents to make a living. As many Canadian communities have globally-exposed resource extraction or tourism industries as cornerstones in their economy, a sustainable approach to economic development is highly recommended for community planning initiatives.

Community Health and Well-Being

In the past century, the social patterns of many communities have changed as they have grown and socio-economic patterns that had remained relatively stable for generations began to face change that has out-paced their ability to respond effectively. In this context, individual and community health and well-being can be threatened.

Sustainable communities address the impacts on social health through providing needed services, facilities and education. Cooperative, community-based partnerships are among the approaches sustainable communities are focussing on to ensure crime prevention and the availability of health care and social-support services.

The Scales of Sustainability Planning

Most key life-support systems — such as air, climate, energy, water, biodiversity — are interconnected with other regions in some way or another. For sustainability to be truly achieved, it must occur at the planetary scale. If one region or jurisdiction brings its development within the carrying capacity of its bioregional ecosystems, successfully harmonizes economic development with the environment, and provides for the health and social well-being of its people but other regions/jurisdictions do not, the planet's ecosystems will still suffer. Air and water contaminants will travel from one region/jurisdiction; unemployment or social unrest in one region/jurisdiction will not be contained easily and will exert pressure on another. Each jurisdiction, organization, corporation and individual, therefore, needs to address the complexity of sustainable development issues and endeavour to make significant progress toward solving these problems in areas they can. In sum, several key scales of sustainability analysis must be recognized in community planning and development deliberations.

Scales of sustainability analysis and planning are defined variously by geography, jurisdiction, project or activity. Each level of scale has various associated responsibilities and varying degrees of influence on other levels of scale. Sustainability objectives must be addressed at each level in a manner appropriate to its' mandate, jurisdiction, resources and abilities. In so doing, consideration must be given to the impacts and influence their choices may have on the larger systems or levels of scale in which they are embedded, and the smaller systems or levels of scale that are, essentially, their building blocks. Further, there must be some accounting for the impacts and influence of decisions that other scales may have on the scale/system in which they 'sit.'

Scales of Sustainability Planning and Analysis

Planetary/global
Continental
Bioregional
Provincial/State
Regional
Metropolitan area
City
Community
Neighbourhood
Site
Building
Technology
Activity

While initiatives at one scale must take into account the impacts of their activities on issues associated with larger scales, it is important to recognize that actions at one scale may exert relatively little control or influence over situations at other scales. For instance, a building (site and building scale) can address energy efficiency through design, technology and techniques or practices. It

cannot, however, address the international energy pricing mechanisms which currently support the proliferation of use of non-renewable energy sources.

The Urban Challenge

> *The world of the 21st century will be a largely urban world . . . Governments will need to develop explicit strategies to guide the process of urbanization, taking the pressure off the largest urban centres and building up smaller towns and cities, more closely integrating them with their rural hinterlands* . — WCED, 1987, pp 16-17

It is predicted that within the next 50-100 years up to 80% of the population will live in urban centres; the large majority of Canadians already do. Most of the impact experienced by the planet around energy, resources and waste activity, is directly or indirectly connected with cities. As such, the design of urban settlements, infrastructure and buildings greatly effects the relative sustainability of the planet.

Urban development represents one of the most important areas for implementing sustainability principles. A critical challenge of sustainable urban development resides in the need to address sustainability at the scales of regions and cities all the way down to design details and maintenance strategies. Urban designers and planners must find the most efficient and effective ways of applying sustainability principles to the creation and management of communities at various scales to minimize negative impacts and optimize beneficial effects on environmental, social and economic systems, locally and globally. The challenge facing Canada's regional and municipal jurisdictions is to plan and design new communities, and retrofit existing ones, so that all businesses, residences and institutions can operate effectively, and people can live, work, play and learn with a good quality of life, while simultaneously guarding against becoming mere feedlots drawing down the natural capital and resources of those more rural areas upon which they depend.

SUSTAINABLE COMMUNITY

Definitions of 'community' variously refer to such key elements as landscape, buildings, infrastructure, economy and social networks. A community is all this and more. Fundamentally, a community has a history and a shared awareness or consciousness that ties all these elements together. Overall, what constitutes a 'community' is the nature of the integration and interaction between people and place .

Planning for sustainable communities requires attention to multiple objectives (social, economic and environmental) and broad and long term perspectives attentive to both human and other life-forms, and to generations yet to be born. Land uses and transportation systems are more resource-efficient and less polluting; there is a focus on improved construction, preventive maintenance, reuse and recycling of all things built or manufactured; and stronger stewardship of the natural environment. In the main, sustainable communities:

* recognize connections between development and quality of life;
* invest time, attention and resources in restoring community vitality to centers and older

areas;
* are more town-centered, transit and pedestrian oriented;
* have a greater mix of housing, commercial and retail uses;
* emphasize goods and services that minimize resource consumption and environmental impacts;
* preserve open space and many other environmental amenities;
* use natural systems only in ways consistent with their continued health and productivity;
* plan for the long term using principles such as those embodied in this list.

A sustainable community responds to the necessities of modern living with a distinct awareness of the community's place in geography and time, and its impacts on the many interconnected webs of ecosystems and relationships of which it is a part. The physical, social and economic systems and patterns of such a community will not only withstand the forces of change, but should prosper for many generations far into the future.

Vision, Values and Policy

Particular features of a sustainable community will vary from place to place; there is no "one-size-fits-all" solution. Nonetheless, sustainable communities tend to have a few things in common: they are clear about what their core values are; have a vision of where they want to go; and have policies and development plans that reflect the community's values and vision. In addition to physical elements (described in the next section), a sustainable community's vision typically reflects social, economic and other concerns including, for example:

Governance
Public policy
Communications
Education
Social programs (including health, elder and youth care)
Economic opportunity and development initiatives
Monitoring and information systems
Ongoing research

Since institutions (governmental, corporate, not-for-profit, academic) often have primary influence or responsibility for various aspects of the social, economic and environmental systems, sustainable communities will often investigate ways to improve the policies, structure and function of institutions. Their efforts may include, for example, policy and regulatory review and change, development of new proposals and incentives, and shifts in communications and/or management approaches. New and different kinds of relationships among various stakeholders, formed to support and facilitate development of local, community-based programs, are a common feature of sustainable communities. This broader participation of diverse stakeholders and interests in community planning and decision-making is core to the ongoing development and maintenance of a sustainable community.

Physical Elements

Physical Elements

Land Use
Open Space
Transportation
Built Form
Infrastructure

Whether urban, suburban, or rural, the conscious choices people make in the design of their communities has a profound influence on the future health of Earth and all life. While communities cannot be invented or maintained through physical form alone, the vision and factors which support a complete sustainable community need to be taken into account at every step in decision-making during the development of a neighbourhood or building or infrastructure system. The physical issues and patterns which emerge when sustainability objectives are introduced into community design and planning include:

Land Use

A sustainable community has a land use pattern that reflects a 'complete' community, that is, one where all ages can live, work, play, learn and shop within a relatively small area easily accessible through a sustainable transportation or circulation system. These land uses serve as the functional foundation of the community and include uses such as: residential, commercial, industrial, institutional, recreation, entertainment, parks / green space and areas devoted to transportation. Land use patterns in a sustainable community are placed with careful attentions to the challenges and opportunities that land use adjacencies provide from a whole systems point of view. Densities in sustainable urban communities provide some advantages in the development and support of transportation systems but also present challenges in terms of built form. Densities need to be carefully allocated and designed to provide for appropriate views, air circulation, sunlight access, and street-level comfort. The commercial and industrial land uses form the physical foundation of the community's economic system and must be located and managed in ways that protect the environment and the public. The institutional land uses, particularly community and social support facilities, form a key element of the social networks and sense of community in a neighbourhood.

Open Space

The open space in a community provides a structure for its systems of circulation, its public realm and its ecosystems. The design of open space is key to ensuring a community is "livable" and provides adequate recreation opportunities. Open space planning must be attentive to various requirements and objectives.

* pedestrian circulation, cycling and transit (key at higher densities)
* providing habitat needs to support bio-diversity (native species in particular)
* meeting needs for interaction and recreation for diverse ages and interests
* providing opportunities for gardening and various intensities of urban agriculture
* wherever possible, helping to ensure micro climates around buildings that can assist in creating green, energy efficient buildings.

The primary objective of open space planning in a sustainable community is to integrate multiple uses and reduce of energy, water and chemical use simultaneously. Beyond the functional needs of the community, open space must also provide the "ecological infrastructure" for the community. For example, open space plans need to respond to watershed function including maintaining surface runoff and groundwater recharge through streams, swales, ponds and permeable surfaces.

Transportation

Transportation is a key element of a sustainable community: the transportation system links land uses, and accounts for a significant portion of energy and resources consumed, and waste or pollution

produced in industrialized nations. Conventional 'modern' communities are designed such that a private automobile is essentially a necessity to raise a family or operate a business. A sustainable community addresses its transportation systems with an eye to preserving or enhancing the ability of people to move conveniently from place to place in a manner that has the lowest environmental and social impacts possible. Transportation system priorities in a sustainable community focus on pedestrians, bicycles, transit, goods movement and, finally, automobiles. The roadway infrastructure is minimized where possible.

Built Form

A great part of our lives (most for many people) is spent in buildings. Buildings serve as the physical structure of the community and define much of the resource and energy consumption necessary to live a good quality of life and meet the basic needs of warmth and shelter. Sustainable or 'green' buildings have a number of key features: innovative systems that reduce energy needs for heating, lighting and cooling (passive solar design and natural air circulation for cooling are typical); designed for flexibility and adaptability to a range of uses over time; materials that are lasting, from sustainable sources as much as possible, and recyclable after deconstruction; interiors that ensure a healthy living and work environment (e.g., non-toxic materials, attention to indoor air quality).

Infrastructure

Infrastructure supplies a community with energy and water and removes its' wastes. A sustainable approach to infrastructure focuses on developing renewable supplies of energy and water and managing them efficiently, recycling or reusing energy, materials and water where possible, all preferably on or near the site. Energy systems may include those that generate or harvest energy on site (electricity and heat) such as solar, geothermal or wind, and systems that permit the sharing of excess heat amongst uses within the building or neighbourhood. Water systems may include rainwater storage, grey water recycling, and blackwater (sewage) treatment. Recycling and composting systems are used to divert solid waste from landfills. Where possible, methane gas may be harvested from landfills and used as fuel; in some cases, the solid waste can be processed or burned and provide another energy source for the community.

ROLE OF DESIGN

> *We look at design as a signal of intention. And we look in the future and say that the filters of the future will not be on the end of pipes. They will be in our heads.*
>
> — McDonough, 2000[1]

Sustainability brings new and complex issues to development. A primary theme that quickly emerges in any sustainable development project is that of multiple objectives and the need to find synergistic solutions. People in a development project who do not have the experience or skills at design can get mired in the politics and words around sustainability; they often look to existing policies and codes for guidance. Unfortunately, however, existing policies or codes can often work at cross-purposes to sustainability (e.g., parking requirements/unit assume a car-based community; waste treatment policies do not accommodate small on-site treatment alternatives). Further, pure policy or planning approaches may tend to force trade-off decisions where a creative design response can find innovative ways to address goals of many policies or directions that at first appear to be in conflict.

Designers (architects, engineers, landscape architects, and others) are used to dealing with significant amounts of information, many issues, tradeoffs, opportunities, needs and stakeholder interests, all the while moving the project forward toward its goal. Although goals, objectives, principles and directions for a projects can be structured during the policy development phase of a project, implementing them is ultimately the responsibility of the designer. As such, getting designers involved sooner than later is a good idea for several reasons:

- They bring 'translation expertise' to a project, that is, they have experience translating policy and directions into physical form and have an understanding of predictable challenges in various alternatives;
- They are often the professionals legally responsible for the building design and approvals process;
- They are responsible for the aspects of a development which require the largest share of the budget;
- They are ultimately responsible for the performance of the buildings;
- They are often in the role of "team leader" in a multi-disciplinary project team.

One particular benefit of the design process is its' production of many graphic representations of a community and its elements. These visuals are useful for generating community discussion and understanding of various options, costs and benefits and, thereby, facilitate potential improvements as well as support of decision outcomes. Visuals can also help de-politicize the planning and development dialogue between a community and its elected representatives — especially around innovative or unconventional aspects of a community that are proposed in the push toward sustainability.

Much is achieved by identifying performance targets and measures consistent with the aims of sustainability; exploring creative and integrated solutions to sustainability challenges; and testing

[1] Quoted in Shea, C. (2000, Aug.). *Mimicking nature by designing out waste.* Florida: FSCC World News Services.

the feasibility of and refining, policies, directions and alternatives. Cooperative, interdisciplinary, design-centered approaches to sustainable community planning have much to offer in both strengthening intention and facilitating progress towards sustainable community development.

DESIGN CHARRETTES

As implied above, buildings, sites, neighbourhoods, communities, and regions are all too often planned or even zoned according to policies and codes bereft of visual or contextual information. Planning decisions are argued as they come up on a case-by-case basis in what is, for the most part, an ad hoc and adversarial hearing process. Sustainability planning requires tools that can offer more than the partial view of future options and conceivable outcomes that such piecemeal approaches provide. Design charrettes are one such tool.

> *A design charrette looks at a problem holistically [and] the results are not likely to fall prey to specialized thinking and political tinkering.* — Kelbaugh, 1996, p6

Design charrettes provide a forum for diverse groups of participants to explore, understand, create and evaluate possible and preferred futures. They encourage discussion beyond conventional thinking without triggering the opposition so often typical of conventional planning and zoning proposals. Beyond their usefulness in illustrating and validating proposed policies, charrette results have a role in informing policy through the new ideas they generate and test. Best linked to a larger initiative both before and after the charrette event, charrettes help to build consensus and inspire community initiative and ownership over future development planning.

> *Charrettes provide for an airing of views, possibilities and visions that can frame terms and catalyze community-wide commitment. [They enable] communities to envision and act upon what their neighborhoods might be and are thus vital to . . . making democracy work.*
> — Watson, 1996

Origins of the 'Charrette'

'Charrette' refers to a practice originated at the Ecole des Beaux Arts in Paris in the 19th century. Design students were given complex design problems and a limited time to create solutions. At the deadline, a pushcart ("charrette" in French) would circulate through the design studio to collect their completed work. Students would throw their work into the cart in various states of completion since to miss the cart meant an automatic grade of zero. As the story goes, it was common to see students jumping on the cart as it came past and working furiously as they rode trying to add more to their project.

The combination of almost impossibly complex design problems, challenging time constraints, and the pushcart, led to this kind of design activity being referred to as a 'charrette.' The focus and intense burst of design work as the deadline nears that characterized those 19th century classes still holds true for charrettes today.

A design charrette is essentially an illustrated brainstorm involving diverse groups such as architects, landscape architects, engineers, planners, content specialists, educators, students, community representatives, governmental staff and civic leaders. Typically dealing with one or more important urban design issues, it is meant to provide participants and the broader community with feasible, creative solutions to pressing problems. The problems and issues addressed can vary from a small scale building to neighborhoods, cities and bioregions. The charrette process combines brainstorming methods (letting ideas build upon each other in a free-flowing, unedited way) and future search approaches (such as creating issues maps, timelines and

diagrams) all of which help people visualize various design solution alternatives, and to discuss and evaluate options. A *sustainable community* design charrette focuses on the specific issues and details of a site and the surrounding community and ecosystem. Directly linking these to the global concept of sustainability requires weaving the threads of the larger goals of sustainability into the charrette. Table 1 provides an illustration.

Table 1
Sustainable Development, Sustainable Community, and Design Charrettes

Sustainability Goals	Example of Sustainable Community Planning Issues	Examples of Charrette Issues
Shift to renewable Energy	-Community Energy Planning -Green building design guidelines and standards -Alternative infrastructure planning	-On-site energy systems -Energy efficient buildings -Targets for energy use reduction or energy production on site
Sustainable water management	-Water management strategies, systems and facility planning	-Surface runoff management design -Grey/black water treatment and recycling on site -No-irrigation landscape design -Low-flow fixtures in buildings -Targets for water use reduction on site
Food security	-Agricultural lands protection strategy	-Community/tenant gardens design -Green roof design
Sustainable resource utilization: Reduction in use of non-renewable resources	-Solid waste management -Design guidelines	-Recycling facilities and programs -Composting facilities -Green building design guidelines and details -Targets for waste reduction on site
Preservation and enhancement of biodiversity	-ESA protection strategy -Landscape / development guidelines -Habitat study and education	-Ecological infrastructure design - parks, greenways, watershed plan, habitat plan, etc...
Sustainable economic development	-Economic development and diversification strategy -Green business initiative	-Jobs/housing balance: target for jobs provided of different types of businesses -New economic opportunities developed on site -Integration of businesses into eco-industrial network
Social health and equity	-Social planning initiatives -Social/low-income housing development -Assistance programs -Education initiatives	-Integration of income groups -Low-income housing design -Daycare provision -Educational institutions and proposed programs

Purposes of a Charrette

The primary purposes of a charrette include the following:

To bring a range of expertise and interests together to collaborate on finding design solutions;
To create innovative design solutions that embody multiple objectives and mutual interests;
To give visual form to ideas and policies that can later be used to stimulate wider discussion and understanding of issues;
To rigorously test and refine planning and development policies and directions; and
To obtain from knowledgeable and accomplished individuals the most creative proposals for addressing the most difficult problems in the least amount of time.

Charrette Elements

Charrettes have become very popular in recent years; currently there are a host of activities that are being presented as 'charrettes.' These include, for example, mini-conferences, workshops and discussion events usually of relatively short duration. Such activities bear some similarity to the purposes or processes of a charrette and can be very useful (we discuss some examples below). In our view, however, and certainly in the context of discussion in this manual, such other activities do *not* qualify as true charrettes.

Design charrettes are characterized by a number of critical elements:

A specific area for focus (site, town, region, etc.);
A compressed time period (3-5 days most commonly) with established deadlines for delivering solutions at the end of the period;
Involvement of diverse groups of people including, most particularly, design professionals
A 'design brief' and program that together provide contextual information and set out maximums, minimums and targets concerning a multitude of complex, inter-related issues and problems; and
A distinct final product that gives visual form to the work.

At their best, design charrettes are linked to a larger initiative both before and after the event in order to increase learning and involvement of a broader community, facilitate consensus-building, and further inform decisions regarding future planning and development.

Benefits

Charrettes have a number of direct and indirect benefits. Many of them have already been touched upon above but the list below will give you a quick reference when making proposals to have a design charrette in your community. Design charrettes:

* provide a forum for a diverse group of participants to explore, learn, understand, create and evaluate possible and preferred futures;
* can bring leading designers to town who provide fresh insights and who would otherwise be unaffordable;
* encourage discussion beyond conventional thinking without triggering the opposition so often typical of conventional planning and zoning proposals;
* illustrate, test and refine proposed policies as well as new ideas and directions;
* create innovative and feasible design solutions that embody multiple objectives and mutual

interests;
* give visual form to ideas and policies that can later be used to stimulate wider discussion and understanding of issues;
* potentially shorten the planning and development process;
* build relationships with and among professionals and community members ;
* can inspire and catalyze community-wide cooperation and commitment; and,
* are often a very cost-effective method for developing a concept design through to a fairly high level of detail.

In short, charrettes can obtain from a diverse group of people the most creative proposals for addressing the most difficult problems in the least amount of time and simultaneously promote learning and consensus among various interests.

Costs and Cautions

Before rushing off and hailing charrettes as the tool of all tools, however, we should point out they do have some actual and potential short-comings. First, the financial cost of running a significant charrette can be considerable, even prohibitive, for some organizations. Further, there is a good deal of preparatory work in planning a charrette; many hands are needed to research, prepare documents, contact and manage potential participants and stakeholders, handle logistic issues, etc. If the charrette generates a lot of interest there will be those who may resent not being involved — and those who want to be involved may be quite long. Choosing to do a significant, large scale charrette can be an ambitious undertaking and is not for the faint of heart.

Other predictable challenges and cautions are covered in more detail in other sections of the manual but it may useful to highlight a few here. Not surprisingly, working against a clock can result in wrong turns or truncated thinking. Careful charrette design, participant selection and facilitation helps to minimize such possibilities but time constraints can have these down-sides. Charrettes also tend to encourage a fairly “no holds barred” approach and design teams, loath to leave out imaginative or potentially promising ideas, may create designs that are too elaborate or optimistic. Design and Program briefs help to ameliorate such outcomes somewhat but care must be taken to ensure that guidelines, targets and limits do not so constrain design possibilities as to rob them of their creative potential.

Finally, it should not be expected that designs resulting from charrettes are complete. Charrette ‘results’ present potentialities and ideas for later reflection and elaboration. Many ideas will need to be reviewed, edited, reworked and refined by a variety of constituencies following the charrette. Charrette products are beginnings not ends.

OTHER KINDS OF ACTIVITIES AND EVENTS

Charrettes, especially large scale charrettes, can be a significant undertaking. There are, however, a number of other kinds of activities that are useful as pre-cursors to a full charrette or can be otherwise helpful to sustainable community planning and development. A wide range of participation tools and activities are detailed in "Sustainable Community Planning & Development: Participation Tools and Practices" (available from CMHC) but a few which include some features of charrettes are mentioned here to illustrate possibilities:

Co-creation workshops
Community planning forum
Design assistance teams
Discussion forums
Expert panels
Future search conferences
Multi-stakeholder brainstorming sessions
Open house
Participatory mapping exercises

These kinds of activities and events are particularly useful when budget, time or other resource constraints prohibit a full-scale charrette. They variously help to bring diverse groups together; encourage discussion and understanding; build cooperative capacities; help inform community members, planners and decision-makers; inspire communities to envision and implement sustainable options; and can jump-start future planning and development initiatives.

SUMMARY

The idea of 'sustainable development' presents significant challenges — particularly to those involved in community planning. The primary strength of the charrette is its ability to draw together diverse stakeholders for a common purpose, directly engage diverse values and points of view, and stimulate discussion and creativity in finding feasible solutions in a very short time frame. Charrettes for sustainable community planning offer a holistic, integrated approach for addressing a complex set of issues: land use, public and private space, density, mobility, urban form, resource use (materials, energy, water), waste generation and handling, and marketability. Products are visual and tangible, and are derived from negotiated, design-centered consensus regarding innovative and feasible solutions. The visual images and information generated by charrettes are useful for future planning and are fundamental to informed community participation. When done well, a charrette's results can increase community learning about complex issues, evoke greater understanding and support of plans, and inspire greater involvement in furthering the journey towards the creation and maintenance of sustainable communities.

BEGINNING THE JOURNEY

So you're considering doing a charrette. Perhaps you have a large site in mind and some complex issues to address. Perhaps you are looking for a way to involve community members more directly and more creatively in the design and planning process. Maybe you have been exploring possibilities for incorporating various kinds of 'green design' options and you want to test their feasibility. Or maybe you see a charrette as a way to bring together a range of professional design expertise to generate a myriad of site options and give them visual form so that others can 'break out of the box' in terms of possibilities.

Whatever your attraction to using a charrette, you will need to do some homework before actually making (or getting) a commitment to proceed. This chapter outlines some of the key issues and steps involved in confirming a 'go ahead' for hosting or becoming involved with a charrette.

DECISION-MAKING CONTEXT

A ***private sector*** sponsored charrette will be funded by key participants in a development, most likely a project's proponents: the land owner or developer. The objectives for private sector sponsored charrette will tend to be very instrumental and in support of achieving a profitable and politically supportable site design in the shortest time possible. While the steps one goes through to develop a charrette will be similar, the politics surrounding this type of charrette are significantly less than one sponsored by a public sector.

A ***public sector*** sponsored charrette will almost inevitably be highly political since it will usually involve public lands and will have require a fairly significant expenditure of public dollars. It is not common for public sector agencies to take the role of a developer or development proponent except with regard to areas of public land. Only on rare occasions will they promote development design work of a level of detail consistent with a design charrette for privately held land. In these cases they are primarily interested in exploring implications for future development patterns in order to set policy for an area where growth is anticipated or desired.

There may also be occasions when the land area to be addressed includes or could include both private and public properties. Perhaps future development of privately held lands will require public amenities or the negotiation of private and public land trades in order to facilitate more appropriate land uses and/or sustainability. Or, as in the case of Southeast False Creek for example, the decisions made regarding the publicly-held land area may have significant implications for the future development of adjacent private lands. In such cases a ***joint partnership*** in sponsoring and planning a charrette may be desirable.

Most sustainable community charrettes will involve both public and private sector participants, however, the context for planning and managing a charrette will be vary by sponsor (driven and resourced by public or private sector or some combination). Whether you are envisioning a private, public or jointly-sponsored charrette, there are number of questions to ask yourself before proceeding much further:

Are you the key decision-maker or is someone else?

Can you authorize the expenditures needed?
Do you have allies within the organization that will support you in gaining commitment to undertake a charrette? Are there external allies who could be influential?
What internal and external support is available for preparing for, running, and following-up on the charrette?
Who do you expect will want to participate? Who do you want to participate?
What are you hoping to achieve and what product results are you seeking?

Answers to these questions are particularly important in gaining commitment to and authorization for undertaking a charrette. They also have implications for planning and preparing the charrette but the first step is to build support for the initiative.

ALLIES AND RESOURCES

From the outside charrettes may look easy; they are anything but for those who are initiating, developing, organizing or managing them. Charrettes are resource intensive, tend to involve important projects and, therefore, tend to attract attention and become politically sensitive.

Potential Allies

- Directors/Senior Managers in the Planning/Development Department(s)
- City Manager
- Municipal politicians
- Key advisory panel members
- Staff in other departments
- Academics and practitioners in the design professions
- Community activists

If you are in a key decision-making position you may have a head start in making the case for hosting a design charrette. Notwithstanding, a full charrette is a significant undertaking and requires a concerted effort to build support and acquire the necessary resources, participants and facilities. A charrette involves a large budget; a lot of planning; the acquisition of approvals from several key stakeholders at senior levels; extensive discussion; and encountering a range of points of opposition. In order to gain the necessary approvals, support and resources needed to develop and complete a charrette, allies will need to be fostered.

Internal allies who will be needed include:

Directors/Senior Managers *in the planning and development department(s)* who are likely to be close to the centre (if not at the centre point) of planning and managing the charrette throughout the various stages from preparation through to follow-up. They will also be the ones with decision-making roles and influence regarding implementation of the future development.

The ***City Manager*** will need to be comfortable with possible political implications of the charrette and may also need to recommend Council's support and approval of the expenditures and assignment of resources.

Municipal Politicians. Strong support from a least a few councillors may also be necessary (budgets for charrette events are often quite high and Council approval is usually required).

Key Advisory Committee and/or Panel Members. Insiders and outsiders, interested or skeptical, often ask their contacts in such commissions or committees for advice. Support from bodies like Planning Commissions is extremely valuable and often needed.

Staff in various departments. Sustainable community planning charrettes (in particular) have a reputation (legitimate and desirable) for generating ideas and options that stretch, or are outside of conventions. Staff in departments that may be impacted by ultimate decisions or involved in their implementation can be quite wary. Positive interest or at least openness to the charrette process among staff in such departments as engineering/ public works, parks and recreation, and health and social services, can be very influential. Obtaining agreements for staff teams to allocate time at key work points in charrette planning, delivery and follow-up is also essential.

While the allies described above are necessary, they may not all be readily accessible when the idea of a charrette first emerges for a project. Fortunately, there may be some **external allies** that can help build support for a charrette as well. Certain civic-minded academics may have the ear of key decision makers and be able to provide significant and influential support for a charrette. Interested and supportive community activists may be able to promote a charrette to local politicians with whom they have good rapport. Other government organizations, such as CMHC, can also access key decision makers and encourage them to pursue a charrette.

Working to build allies and a support base for a charrette must be done with much care: the chorus of voices promoting a project of this scale must be credible and harmonious. Finding charrette-supportive voices from a variety of quarters is the ideal; finding a few key supporters to promote the idea to a few key decision makers is the most critical (and is also what typically happens in any case).

Readiness Assessment 1:

Are you in a position to initiate broader exploration of the charrette idea?
Do you know who your allies might be or where you might begin building support?
Is it likely that the organization and its members may be open to the idea?
Do have some confidence that resources are available or could be obtained?

** If your answers tend to be "yes" you're ready for the next step.*
** If you are uncertain, it's time to do some more homework and exploration; the following section may help.*
** If you answered "no" to one or more of the questions, it's time to do a bit more thinking and planning and/or to choose an activity other than a charrette* *(See p. 17)*

Almost everyone is in position to initiate the idea of using a charrette for sustainable community planning.

There are lots of people who can become your allies in making key contacts, seeking support, and planning a design charrette for sustainable community planning.

Education and information (including charrette benefits and success stories) goes a long way in helping to overcome hesitance or resistance to participatory sustainable community planning.

Financial and other resources can be obtained in a number of ways (e.g., pro-bono and volunteer efforts; donation of materials and facilities; grants from various funding agencies; cost-sharing).

BUILDING SUPPORT and PROMOTING THE PLAN

There are three primary 'rules' that should be followed when seeking allies and building support for the charrette idea:

1. Provide key information
2. Meet multiple interests
3. Address concerns

Provide key information, appropriate to each person and position, so they are fully apprised of what they may later be asked to more formally support or approve. In the early exploratory stages, you will be scoping out interests and getting a feel for likely avenues of support or resistance. Topics for discussion at this stage are likely to include charrette benefits, success stories, possible participants, and your potential ally's concerns and interests. Later, when you are actually actively promoting the charrette idea and seeking more formal indications of support or approval, more substantive information will need to be presented: goals, objectives and intended outcomes, time and timing, likely participants, resource requirements, etc.

The credibility of a charrette event and its results starts with strategic, but full disclosure of information to all key players. Ask for comments. While some comments may seem critical, the concerns that they reveal may be echoed by others and will need to be addressed. Ask for advice and take recommendations seriously. The advice of those who are pragmatic and have their fingers on the political pulse (senior decision makers in particular) can help a charrette avoid serious problems. More importantly, by showing interest in their advice, and responding to it, a charrette proponent can find supporters in those who may have been skeptical initially. Whatever you do, guard against 'spinning' the idea of a charrette and its costs and implications in such a way as to avoid critical appraisal. If any decision maker or key supporter feels they were inappropriately persuaded to support a charrette, and the implications or results are not what they expected, relationships can be damaged and the credibility of the project and all connected to it may suffer.

Address Multiple Interests: Each potential ally and stakeholder has a unique constellation of interests and constraints. Building support for a significant event like a full design charrette revolves around showing how such an event can simultaneously help reflect everyone's interests while respecting their constraints. If this is not done, one or more of the many gatekeepers in an institution may raise roadblocks. Some key interests to consider include:

* How will the charrette contribute to creating a better community, in terms of livability, safety, beauty, function and sustainability?
* How will the charrette help us make our municipality more prosperous and financially efficient?
* How will the charrette help respond to the interests of community advocacy groups,

particularly on the "issues of the day"?

* How will the charrette help us deal with a range of problems we are facing around the site in question?
* How will the charrette provide us with an opportunity to promote our work and our city, and build reputation and credibility?
* How will the results of the charrette help to inform work on other projects and sites?

Address Concerns. Given the scale of resources required for a charrette, the politics surrounding who should be involved and have access to the charrette, and the possible results of the charrette, you can expect to hear a number of concerns. You will need to take concerns seriously and find ways to address them. Some key concerns to anticipate and consider include:

Credibility. Sustainable community initiatives can often be seen by skeptics as unrealistically utopian, and the thought of spending many thousands of dollars on a sustainable community charrette can cause some concern. To respond to this concern, the multiple benefits of charrettes can be highlighted and the role of the charrette characterized as a means of "rooting out any flakiness" by subjecting all the sustainable community policy ideas to rigorous and objective analysis by professional designers. By involving municipal staff and practical professionals (like engineers and developers), skeptics can find some comfort that the pragmatic realities of city planning and management will berepreseted at the discussion tables.

Financial and staff resources. Many institutions are facing years of budget cutbacks and managers may not feel they have the resources for a charrette in spite of the recognized benefits. This concern cannot be taken lightly: a full 3-5 day charrette, with preparation and appropriate follow up, can easily cost $75,000-$150,000 (especially if staff resources are accounted for). To respond to this issue, resources may need to be drawn from several budgets and departments and/or co-sponsored by other organizations or agencies. Potential sponsors may attach strings to the resources they provide including, for example, having influence over what the purpose and focus of the charrette is, who is on the charrette teams, what promotional opportunities they want in exchange, and what type of ownership they have over the final results. If you've done your initial scoping work well, you should have a fairly good idea of what to expect and what may be possible. When it is time to begin preparing for the actual charrette, consider carefully such things as what kinds of 'returns' can be assured for a sponsor, and how sponsor-benefits might be best negotiated to optimize and/or preserve the intent of the charrette. Identify possible sponsors as soon as they become clear and ensure that all parties involved in the charrette are aware of the various contributions and interests.

Political implications. Some people may have concerns about the political implications of promoting sustainability through a charrette, particularly if there is any sense the municipality or neighbourhood will be defacto committed to any results of the charrette. To respond to this concern, the role of the community in the charrette (provided it is appropriate that they are involved) can be highlighted, to provide assurance their voices and concerns will be included. It is also important to underline that the results of a charrette are not a final plan; rather they are a collection of innovative but realistic ideas intended for further review, discussion, selection, refinement and/or elaboration. All the ideas will be subjected to

scrutiny and discussion by city staff and the community, and, ultimately, in the case of a municipality, all decisions for a site will have to be approved by Council.

Readiness Assessment 2:

Have you identified allies and successfully garnered support for the charrette in concept?
Are key decision-makers and stakeholders on board?
Do you have some confidence that resources are available or could be obtained?

** If you can answer "Yes!" to these questions, you're ready for the next step.*
** If you have the key decision-makers and at least some key stakeholders on board, and if you have some degree of confidence that resources can be found, you can probably get started on the next step; it might even help you confirm or acquire the additional support you need.*
** If you answered "no" to the decision-maker question and are weak in the other areas, you're not yet ready to go the next step. You might find the guidelines for the next step helpful in working towards positive answers to the questions above, but you should not be seeking approvals at this stage. You must be well-prepared before moving on to the more formal approval-seeking stage.*

GETTING APPROVAL TO PROCEED

If you are looking to get approval to proceed, it means you already have some key decision-makers and stakeholders in place, along with additional internal and external allies that are supportive of undertaking a sustainable community planning charrette. At this point, if you *are not* in a key decision-maker position, it may be time to have someone else carry the ball from here. Since you have done your homework, you will already know who the best candidate(s) will be. If you *are* in a key decision-maker position, it is time to alert other decision-makers and internal allies that you are about to move forward with a proposal and will be seeking approval to sponsor or co-sponsor a charrette event. Regardless of whether you have passed the ball on to someone else or are carrying it forward yourself, make sure your allies and supporters are ready to respond — through conversations, letters of support, offers of assistance — if and when they are needed.

Once you have verified that support — in principle or by way of resources — is firmly in place, it is time to make a more formal proposal. The more money you need, the higher the level of approval that is likely to be required. Since the amount of resources required to run a large charrette will likely exceed the signing authority of any individual Director, approval by a Board or the City Council may be needed; even if it is not, obtaining their support/approval is recommended.

The approvals process for resources for a public sector-sponsored charrette generally requires a full report to senior management and Council (City, region, etc. as appropriate). The report will need to outline all details of the charrette, address concerns that can be anticipated, and provide rationales for all key aspects or decisions. We suggest that the following elements be included in a proposal and/or that they be otherwise addressed during the approvals process.

Site Description and Challenges

Introduce the site/project of focus and provide a description of the kinds of issues and challenges involved. These may include, for example, challenges due to physical features (e.g., possible intrusion on wildlife habitat or waterways, contaminated soils); livability issues (e.g., proximity to existing residential or industrial areas, transportation); social issues (e.g., stress on existing hospital or school facilities, policing); community acceptance (e.g., density, built form).

Sustainable Development & Sustainable Communities
Include an explanation of sustainable development and the importance of addressing sustainability issues at the local level. Including references to any existing or emerging laws, regulations or policies that can be seen to be responsive to sustainability issues can be very useful. As appropriate, highlight or otherwise reference the sustainability-related issues or challenges that need to be resolved with respect to the site/project.

The Charrette
Include a general description of what a charrette is, the benefits that can be gained, and its' efficiency and effectiveness in dealing with the complexities of sustainable community development. Case studies are useful here. Highlight the successes of other similar charrette projects. Describe the kinds of site/project-related issues that will be addressed in your proposed charrette; include attention to the ways the proposed charrette will address potential problems as might have been experienced in other charrettes.

Charrette Results
Declare the intended outcomes of the charrette in terms of its' products. Outline the ways the charrette results will or could be used including extended benefits. Some possibilities include: vehicle for initiating broader discussion and greater community involvement; guide project-related decision-making and development; benefits related to a broader range of city policies or initiatives.

Participants
Describe the team profile you would be seeking (e.g., architects, landscape architects, engineers, planners, community representatives, students) and how you intend to select people to fill those roles (experience, expertise, etc.). Provide examples of people that might be considered and indicate anyone who has already expressed interest. If you intend to include "foreign experts," provide a rationale for their participation (refer p.44). If there is anyone who has indicated they would participate 'pro bono' or at a greatly reduced rate, it is good to highlight that here as well.

Funding & Other Resources
Provide an estimate of the funds and staff resources required. Explain or otherwise detail the ways the funds and resources will be used and how they will be allocated across various elements or stages of the charrette. Include information regarding other actual or anticipated sources of funds/resources; the kinds of cross departmental support that has already been indicated; and highlight the fact that pro-bono, in-kind, and reduced rate participation is expected.

Two other topics you may or may not want to introduce at the approvals stage are *access* and

contracts. Both these topics are covered in more detail in the next chapter (they are issues that are usually addressed during the charrette preparation stage) but, since they can be problematic and/or questions may be raised related to these issues, they are briefly addressed here.

Access

One particular challenge of public-sector charrettes is in the degree of access to the charrette event (who, when, under what conditions). Options for addressing this issue are very dependent on your situation.

(1) If you are not yet clear about access or have concerns, avoid addressing this issue in your proposal or indicate that this is a matter for resolution during the planning process.
(2) If you are intending to limit access to the charrette event itself, you can use the approach above, or provide your rationale and describe some of the ways in which the pre and post-events ensure broader involvement in the charrette (prior inputs and post charrette results displays, reports, etc.)
(3) If you intend to have full public and/or media access to the charrette, describe the benefits of this approach and provide a rationale for the trade-offs you are making (refer p. 46).

Contracts

If you have had discussions with the legal department, and explored some of the issues that may be of concern to them, provide a brief summary of the outcomes of the discussion (e.g., generic contracts for participants, intellectual property, liability, etc.) and how each of the issues will be addressed.

Readiness Assessment 3:

Have you completed your proposal and presented it to the appropriate decision-makers? Have you obtained approval to proceed?

** If you haven't yet completed or presented your proposal, well, it is time you did!*

** If you haven't yet obtained approval you may need to*
(a) find ways to respond to reasons for declining the proposal;
(b) find other organizations who may be interested in assuming the role;
(c) consider undertaking other similar, but less ambitious activities (ref p.17)

** If your answers are "Yes!" then it's time to start planning and preparing for the charrette. See next chapter for more detail.*

SUMMARY

Taking time to do your 'homework' prior to seeking support or approval for a sustainable community design charrette is absolutely essential. It is important to have a good grasp of the concept of sustainable development and the issues that need to be addressed. Having at least some understanding (the more the better) of 'the urban challenge' and the ways in which sustainability needs to be and can be addressed at the community level is also a foundational requirement. You will need to be familiar with the charrette approach (purpose, elements, benefits, cautions) in order to make a good case for using the approach in your own community. Awareness of similar, alternative kinds of activities is also helpful. Building support for the charrette and gaining approval will depend on your success in providing key information to, and addressing the multiple interests and concerns of, potential internal and external allies. To be successful, any formal requests for commitments or approvals must demonstrate that great care and attention has been given to the issues of concern to decision-makers and those likely to be impacted before, during or after the charrette.

PRE-CHARRETTE PLANNING

Now that you have approval to do a charrette it is time for the 'real' work to begin. The quality of the charrette experience and outcomes depends on what you do ahead of time. The pre-charrette planning work will involve outreach, communications with people directly and indirectly involved in the charrette, relations management, research, document preparation, program development, team selection, and lots of nitty-gritty tasks like contracts drafting, venue arrangement, food planning, organization of on-site supplies and equipment, transportation and accommodation for outside visitors, and more. It may also include various planning meetings, mini-design workshops, or various other kinds of orientation and planning events that can be used both to inform the charrette, and expand the interest and involvement in the planning process beyond charrette participants. This chapter looks at the various pieces of the puzzle that need to be formed and put into place prior to the actual charrette start.

THE STAKEHOLDER COMMUNITY & COMMUNICATIONS

> *Only through a public consensus building process do plans have a sustaining life.*
> — Lewis, 1996

Charrettes are interesting events with much excitement and mystique surrounding them. Many people will become enchanted by the possibilities and will provide various rationales as to why they should be involved. The types of 'stake' they have in the charrette may include one or more of the following:

Contributors of resources. Money, staff, supplies, venue, etc.
Contributors of time and expertise. Anyone who has or will make a time or expertise contribution to the project or the planning process.
Directly impacted. Anyone within the site area who may be impacted by decisions and plans.
Jurisdictional Associated with anything which might be impacted by the actual development, politically or financially.
. ***Responsible gatekeepers***. Senior managers/decision makers in any institution involved in any way in the charrette (including politicians, senior managers, etc.)
Ideologically aligned. Sustainable development draws many — from academics to community activists to environmentalists — who want to be involved in creating a better world and have strong ideas about such a place and process; if the project has some profile, they will feel they have a stake in it.
Communicative. The media will want to be involved as they feel it is their right and responsibility to report on planning initiatives — especially if the charrette concerns a high profile project.

The following stakeholders can be involved, may insist on being involved, or will need to involved in some way in the charrette. The list is not comprehensive, rather, it is meant to be a starting point for identifying stakeholders of various kinds. Each stakeholder will need to be addressed (even if only through notification of the event) or involved centrally or peripherally in the charrette. Failure to inform various stakeholders and interested parties, or otherwise provide some kind of connection to the charrette, can result in damaged relationships and questions regarding the appropriateness and credibility of the charrette, its' organizers and/or its' results.

Elected Officials are generally interested in the ideas or solutions a charrette can offer in addressing difficult decisions around a project; in getting diverse stakeholders to find a mutual solution they can support; and in being part of a high profile, interesting event in their neighbourhood. Elected officials may include city councillors, government board members, and senior government politicians who have responsibilities related to the issues explored in the charrette (e.g., sustainability, housing, environment).

Staff of Senior Governmental Agencies. Agency staff are generally invited to charrettes to provide their technical expertise and to give feedback on the feasibility of various innovative solutions to problems. Charrettes give these "regulators" a rare chance to explore options in a non-prejudicial environment, an activity that can greatly contribute to ongoing research in which these agencies are often engaged. In some cases, these agencies may provide some of the resources for the charrette.

Municipal Staff. Typically, staff from various departments (planning, engineering, social planning, etc.) are drawn into charrettes by other stakeholders, and pursue them as a problem-solving method for bringing together a diverse group of interested parties to explore a range of ideas and solutions useful for creations of development policies and guidelines for a site. Those involved in City Advisory Committees, Planning Commissions and Urban Design Panels associated with the City are also likely to express interest in involvement.

Land owners and developers. This group are generally interested in getting a good, profitable solution to their development project in the most cost and time efficient manner possible. "Common wisdom" in the development industry suggests that innovative projects may win awards but they always lose money. There will be a few who have interest in innovative solutions but expect that most will find innovation less important; they will be watch-dogging the process in terms of "do-ability" and return on investment. Various corporations, especially those who are near the site or are considering a move, may also have interest in the charrette; at times they may provide resources or funding for the charrette.

Development Professionals. Architects, landscape architects, engineers, and planners are among those who will desire involvement either directly or by way of their professional organizations. Their reasons for participation are various: interest in the topic; the challenge a charrette poses; the chance to learn about something new; involvement with other professionals working in the sustainability arena; and the possibility to increase their own profile within the professional community. Consultants and experts who may be involved include:

* Sustainable development experts in the community - especially designers
* Experts/consultants involved in the project to date including those who have taken an interest in any particular aspect of the project
*Those who have worked on projects or planning processes around the site in the past
* Those who have been involved in higher profile "charrettes" in the past

Specific interest groups. These groups tend to insert themselves into the development process or, on occasion, are invited into the process by municipal staff or community groups. They may participate primarily to add the specific view or expertise they represent and will often promote issues of greatest concern to them quite strongly. Issues-based interest groups may include, for example, those focused on parks, housing, transportation, community economic development, or

community members seen to be marginalized or under-represented (e.g., unemployed, single mothers, certain ethnic groups, disabled).

Local Community. Members of the community most directly impacted by planning decisions that may result from the charrette are generally involved through representatives on the charrette teams, through check-ins or report-outs to a community group during the charrette, and through presentation of the results of the charrette in a forum where the community can provide input, feedback and other ideas to decision makers in response to the charrette ideas. The contact point for community members is usually by way of neighborhood associations or other community groups.

Academics & Students. Academics are drawn into charrettes out of interest or by way of invitation in order to obtain 'objective' and often cutting-edge advice on a range of issues. Specific disciplines include, for example, architecture, planning, landscape architecture, engineering, resource management, geography. Students, especially design and planning students, often have the basic skills needed to help address the challenge of preparing graphic and written presentations in a short time. The charrette provides them with an opportunity to work with professionals and often provides others with a kind of innovation fearlessness that more seasoned professionals may avoid. In some cases, such as the SEFC charrette, students who have already researched ideas and tested the program can be rich resources and make very significant contributions to the charrette.

General Public. Any citizen who is interested in sustainability or in community development may want to have an accessible venue to at least learn about, if not participate more substantially in the charrette in some way. The final presentations and the media are key venues for this type of involvement.

Media. The media (newspapers, radio, TV) will probably — and hopefully — want to cover at least some aspect of the charrette. They will generally get the best information in the final presentation but there is also some advantage in keeping the media informed about the process along the way; they can be significant allies in facilitating interest and involvement in the planning process.

You will probably have already spoken with a number of people from these various groups during your scoping efforts. As a result you will have an idea of the kinds of involvement they desire or expect. Staying in touch with these people — by phone, newsletter, email or regularly updated website — will be important. These individuals, and others you will talk with along the way, are likely be helpful to your preparatory work in honing the scope and objectives of the charrette, providing feedback on the design brief, and suggesting potential charrette participants. The roles the stakeholders/stakeholder groups will play may be of various kinds: informed supporter; information or resource contributor; information disseminator; feedback provider; advisory group member; charrette participant. Providing roles appropriate to each interest — and not miring the charrette in the process — is a key challenge to ensuring overall support and success of the charrette. A news and communication plan to inform various interested parties of activities, involvement opportunities and progress reports, along with public events such as the charrette kick-off and the final presentation, help ensure that the needs and interests of various stakeholders can be served.

CONSULTANTS AND FACILITATORS

> *The best results emerge when people who live and/or work in a place, work closely and intensively with experts from all the necessary disciplines.* — Wates, 1998

Sustainable urban development projects typically require both 'technical' and 'process' consultants. Developing urban communities in accordance with principles of sustainability requires attention to many technical details and the input of many types of experts, most typically architects, many types of engineers, planners, and various environmental experts, among others. The greatest benefit for sustainable community planning is in obtaining cross-disciplinary insights that result from bringing these technical experts together for discussion. Doing this early on in the planning process, and especially in tandem with public involvement processes, has been proven to save time and reduce frustrations that are almost guaranteed to occur if this activity is ignored.

In order to achieve efficiencies in projects, the many technical/disciplinary experts, community members, special interests, and municipal or other government staff, must all work closely with each other to ensure their contributions and decisions are all pulling in the same direction. In order for these multiple stakeholders to work together to find mutually beneficial solutions, careful attention must be given to 'process' and it is here where process design and facilitation consultants are required. Experience has repeatedly shown that, in the absence of a carefully designed and managed process, the intrinsic differences in knowledge, power, assumptions and values which characterize the various participants will often threaten to derail a project.

Whatever you decide to do to involve experts and others in pre-charrette planning, charrette organizers are well-advised to involve a charrette design and facilitation consultant — with particular expertise in sustainable community planning — as early as possible. Charrette design/facilitation experts often combine strategic planning and training approaches useful for overall charrette planning (including development of the design brief pre- and post-charrette requirements), and are able to deal with the many aspects of multi-stakeholder learning and decision making related to sustainable community development projects. Involving such process experts early helps ensure that key issues are addressed and that all charrette-related events are well-integrated. They can also help to ensure that stakeholders understand some of the key technical and regulatory constraints on the project (and thereby help avoid unnecessary politicization or antagonization); that situations can be created to ensure various participants learn from one another and are open to considering new "out of the box" ideas; that various participants and stakeholders are focused on win-win solutions; and that final products are useful, credible, and supportable by various decision-makers.

Aside from the design, advisory and organizational role of a charrette designer/facilitator in advance of the charrette, s/he will likely be the main choreographer and orchestrator of the charrette event itself. Although someone else (architect, senior planner) could assume this role, an experienced charrette facilitator can 'read' the rhythms and progress of participants, introduce new information or redirect processes as may be needed (particularly times of high chaos), monitor individual teams and assist if conflicts or stalls occur, bring teams together for cross-fertilization at appropriate times, and ensure that various activities work with the ebbs and flows of participant energies and the charrette process overall. Finally, a facilitation expert is less likely to be tempted to engage directly in the hands-on effort of the teams and can, therefore, provide a neutral, centre-point for event management.

ADVANCE MEETINGS & OPTIONS

While the charrette event itself is short, the overall process extends in both directions — from several months in preparation prior to the charrette, to several months and longer after the charrette in implementation. In the preparatory phase, a series of small scale organizing meetings in advance of the charrette is a good approach for honing the scope, objectives and program for the charrette. Some meetings will be with city staff and experts to formulate and analyze urban design conditions and issues related to technical feasibility of certain solution directions. Other meetings should provide for broad-based discussion with and input from a wide diversity of stakeholders and interested parties to help ensure that various interests and concerns are addressed. Such meetings will most likely provide additional input for honing the charrette objectives and program as well.

In addition to gathering information and input, activities in advance of the charrette can include site visits and informational tours that help orient charrette participants and others to the site itself and increase their understanding of the issues involved. Mini design workshops can be held to generate initial ideas from community members and help create guiding visions for future development on the site that will be the focus for the charrette. There are a number of advance activities that can help ensure the effectiveness of a charrette both as a single event and as part of larger initiatives. Examples from various charrettes are provided below to provide you with some ideas you can build upon for your own exercise.

***Corvallis, Oregon**:* Over the course of three meetings, the consultants, with the assistance of staff, defined the project and goals of the charrette, collected relevant site and program information, and walked the site. The information collected was then refined and edited to create a single "opportunities & constraints" map. Consultants also held a pre-design session aimed at developing initial planning and design concepts. Following the discussion the consultants presented a rough scheme to a diverse stakeholder group for discussion and critique.

Harris Green, Victoria. The planning department held numerous meetings for rough work and selection of the charrette team. Orientations, walks, meetings with various interest groups, review and testing of preliminary ideas also occurred prior to the charrette.

New Bedford, N.S. Organizers met weekly at a local restaurant for several months to define and prepare the program. As most organizers know, good food and libation go a long way in bringing folks to the table

Perth, Australia. A series of lectures on various topics given by invited lecturers of interesting standard and class provides background information and orientation to participants and non-participants alike.

San Antonio, Texas. In preparation for the charrette a series of design workshops were scheduled to enable design participants to assemble, analyze site conditions, define problems, articulate a vision, establish design criteria and develop a program for each site (5 different sites). Each participant invested 30-40 hours of structure time before the charrette. Attendance by non-participating design professionals, advisory committee members, and the community was encouraged.

Simon Fraser University, Burnaby. Two open houses were held prior to the charrette. Display provided background information, objectives and vision regarding the new community, and a framework to guide planning and design of the new community.

CHARRETTE DESIGN ISSUES

Charrette Scope and Objectives

The scope and terms of reference for the exercise must be specified clearly and succinctly. The scope should be defined both geographically and topically (issues and/or problems to be addressed). The scope might also refer to connections between the charrette and other documents or activities within the city (e.g., vision statement, policies). Sometimes the scope of a charrette will be quite narrow, focused on physical design ideas alone. At other times, and particularly in a charrette focused on sustainability, the scope may include a broader set of design issues such as the Harris Green charrette sought to address:

> *Urban Design* dealing with buildings, forms, streets, mid-block walkways, trees, parks, etc.
>
> *Social Design* concerned with housing needs, housing types, community amenities, human resources, safety, neighbourhood identity.
>
> *Economic Design* asks "What are the costs?" " Do the development economics work?" "How do improvements get funded?"
>
> *Regulatory Design* seeks to find the right expression for zoning and all the other policies that shape economic and physical development.

To avoid misunderstanding among those both within and outside the charrette, objectives should be stated as clearly as possible. The objectives should be reasonably achievable within the time available assuming high levels of intellectual challenge and endeavour. Intended outcomes in terms of visual products and/or written reports should also be specified in order to communicate and manage expectations.

Example: Harris Green, Victoria BC

Background: City Council was about to adopt new zoning for the Harris Green area. Due to questions raised regarding the degree to which the zoning would encourage development consistent with values and goals enumerated in a recently adopted Area Plan, Council tabled the new zoning for 6 months and endorsed a charrette process.

Purpose of the Charrette:

"Conceive a detailed vision of Harris Green as a dense, populous, vital, inclusive, mixed use neighbourhood, and to identify the strategies needed to achieve that vision."

More specifically, a Harris Green which:

* presents an alternative to suburban sprawl
* allows a diverse, urban community to lead a much less car-dependent life
* holds out a profound, positive economic and social impact on Downtown
* promotes diversity and inclusion
* reduces the development pressure on other Victoria neighborhoods
* gives the entire Victoria community a useful urban design precedent and a new sense of direction in planning culture
* offers an in-town alternative to lower density, detached and dispersed living

Example: Southeast False Creek, Vancouver, BC

Goal: To provide Council, staff, consultants and the larger community with different design options for the site, each of which represents a clear vision of what a community built in conformance with the proposed polices would be like.

Objectives:

1. To test the efficacy of the proposed policy statement and the performance targets that would be manifest in urban design *before* an attempt is made to apply them.
2. To create a setting in which leading B.C. designers can exchange ideas and viewpoints with outside sustainable design experts
3. To establish new, more sustainable urban typologies which can be used as prototypes for other sites
4. To illuminate the connection between sustainability and livability
5. To make the sustainability functions of the site both transparent and didactic so as to serve residents as well as educate the world.

The Design Brief

Themes Example:
Southeast False Creek, Vancouver, BC

Land & Water: issues associated with the ecological health of the site

Built Environment: issues related to the buildings and landscapes that will be added to the site

Building Design & Performance: issues related to sustainable building construction (especially energy issues)

Cycles of Growth & Decay: covers physical and social issues relating to material flows on and off of the site.

The development of a 'Design Brief' or 'Program' will usually be coordinated by the consultant and represents a core charrette preparation activity. The Brief can be organized around themes such as the Harris Green design themes noted above, or around such themes as land and water; the built environment; building design and performance; and cycles of growth and decay as was done in the Southeast False Creek charrette.

The Design Brief defines the boundaries and 'territory' of the charrette. It will include a general description of the site; outline opportunities, constraints, minimums, maximums; and define desired targets where possible. (See examples in Appendix B.) Documents related to the site — including policy documents; regulations; visions, goals or objectives reflected in already existing area plans; and other reports related to the site that may have been developed — should inform the preparation of the Brief. Extensive feedback during Brief preparation is essential to ensure inclusion of important issues, to test likely support and acceptability of direction, and to establish appropriate minimums and maximums.

The contents of Design Briefs are particular to the context and topic(s) of concern. Some charrettes focus on specialized topics such as energy, building envelope, landscape, etc. When undertaking a a *sustainable community* design charrette, however, a number of topics must be integrated and addressed simultaneously. The following design issues are considered among those that are necessary for attention in a Brief intended to guide a sustainable community design charrette.

1. Natural Systems

> When a site is changed, even in the simplest way, ecological consequences are not completely predictable; the relationships between the various systems are too complex. Design may not be able to find the absolutely *correct* solution but . . it can find a number of *very good* solutions. — Condon, 1996

The protection, maintenance and enhancement of natural features and ecosystems is a cornerstone of sustainable development. Sustainable communities identify and assess the impacts on natural systems and resources; seek to meet multiple objectives in green spaces (recreation, habitat, water protection and cleaning); and establish methods to ensure roads, plazas, open spaces and buildings contribute to ecological goals.

> A design brief should reflect the vision of the community with respect to ecosystems and state any specific objectives or commitments that have already been identified.

1.1 Streams

The streams within a watershed are the lifeblood of an ecosystem; a sustainable community protects

its streams and may create additional ephemeral streams to manage runoff from built areas. A healthy stream has an undisturbed riparian buffer on either side that includes trees and shrubs to provide shade, nutrients and root mass to stabilize the soils. Day-lighting buried streams and restoring damaged streams is a common in sustainable community development.

A design brief needs to
* note existing or buried streams
* describe the features that need to be protected or improved;
* define requirements for setbacks from the stream;
* provide direction or guidelines for designing riparian corridors to maximize their benefits and minimize disturbances associated with streets or bridge crossings.

1.2 Wildlife Habitat

Wildlife habitat includes food, shelter and breeding areas. Each species has slightly different needs and are in a complex relationship with other species. A sustainable community integrates the objective to provide appropriate wildlife habitat into its planning of its open space.

A design brief should identify key species on the site and provide resources and guidelines regarding habitat protection or creation for these species.

1.3 Nutrient Management

The health of natural areas is dependent on its ability to recycle nutrients, largely through the decomposition of organic matter. A sustainable community addresses the nutrient balance in its natural and agricultural areas, through limiting exposed tilled soils, composting organic materials and wastes and ensuring maintenance methods do not unduly remove or damage the nutrient balance in the site's soils.

A design brief should reveal issues related to soil conditions (especially if it is a brown field site) and particular activities (e.g., parks management, agricultural, industrial) which may contaminate or degrade surface or ground water, and provide guidelines for addressing these issues.

1.4 The 'Urban Forest'

Trees contribute to the health and livability of a community in a number of ways: moderating urban temperature; improving air quality by capturing atmospheric carbon and particulate; acting as buffers or screens; helping to protect against soil erosion; providing habitat; and generally increasing interest and aesthetic qualities of a community by way of seasonal change, colour, contrast, texture, sound and movement. Protecting existing trees and planting additional trees improves livability and is a key factor in siting buildings and roads in a sustainable community.

A design brief should note areas of urban forest to be protected; encourage the inclusion of trees as a core element in the site design; and provide low-impact guidelines for design of roads, buildings and utilities.

2. Built Form

Sustainable communities seek to integrate rather than segregate land uses, income groups, family types, and people at all stages of life. Various development forms are explored and selected to ensure

a wider mix of uses and services, and greater efficiencies in people and material flows around, as well as on and off, the site.

> The design brief should include an overall statement of goals and objectives for the built environment (including such key elements as waste, energy use, flows to be addressed) and, where appropriate, provide guidelines regarding the kinds of conventional and/or alternative development forms to be explored.

2.1 Land Use Patterns

Land use patterns are the foundation of a sustainable community. The goal for a sustainable community is to mix land uses to provide a "complete community" where all ages can live, work, play, learn and shop within a short distance of their home. Land uses to consider for a sustainable community include:

Housing
Commercial and Industrial uses
Institutions and Community Facilities (including entertainment, recreations and leisure facilities)
Parks and Open Space
Mobility systems including roads and parking areas (often included under open space)

Land uses must be mixed strategically, with an eye to the opportunities and constraints regarding adjacencies. Appropriate adjacencies are found by avoiding serious conflicts between users, and times and types of uses, while addressing ways to deal with flows of energy, resources and waste in the community more efficiently. For instance, excess heat from commercial activities can be shared between buildings; on the other hand, noise, smells or transportation from some commercial activities may be inconsistent with a livable residential neighbourhood.

> To the degree that it is possible or known, a design brief should identify the amount of area required for each type of land use.

2.2 Sites and Buildings

Efficient use of land is a principle central to sustainable community development. If a larger site is planned, questions related to size and configuration of individual building parcels, block size, subdivisions, and incremental development all need to be addressed. Preferred location of particular building types or profiles may need to be specified in the Design Brief in order to optimize the benefits of slopes, natural light and ventilation, passive heat gains, and viewscapes.

> The design brief/briefing package should include information regarding solar access, shade and wind throughout the year, and make note of viewscapes that are to be preserved or created. The Brief should also include information and guidelines regarding parcel sizes and configurations, height limitations (if any), and possible preferred locations for particular building types or activities.

Buildings define the physical structure of the community and the form of much of the resource and energy consumption required to meet basic needs and support a good quality of life for residents. In order to reduce environmental impacts attributable to buildings, sustainable communities promote the development of buildings that use 'green' materials, are energy, resource and water efficient,

sensitively integrate into the site and ecosystem, and work with nature's cylces. New buildings are designed for flexibility and adaptability to minimize the need to demolish buildings to accommodate changes in the community. Wherever possible, existing buildings on a site are retained and renovated or reused.

> The design brief should identify any buildings that have heritage status or should otherwise be retained. The brief should also provide resources and guidelines for building design and environmental performance.

Housing. The housing in a community largely defines who lives in the community. A healthy community accommodates people of all ages, life stages and income levels and, therefore, sustainable communities incorporate a diversity of housing stocks. (CMHC has many resources on housing for sustainable communities that are useful in design charrettes.)

> The design brief should describe and/or specify the desired size(s), numbers, and types of units and, as appropriate, the percentage of housing units intended for particular family incomes. Expected densities (capable of supporting a viable transit system and a prosperous commercial sector) should also be specified.

Commercial/ industrial. Sustainable communities seek to ensure that commercial and industrial land uses support a diversity of businesses, provide for basic shopping and service needs of residents, and offer a range of stable employment opportunities. Ensuring commercial and industrial operations are managed in a manner consistent with the principles of sustainability is critical. Where appropriate, eco-industrial networks are developed that link resource, waste and transportation systems between businesses, and accommodate flexible uses of spaces. Healthy communities also seek out ways to invigorate not only their own immediate communities, but the surrounding district as well.

> The design brief should include:
> * specification of area (size and location as appropriate) required for commercial and industrial uses and include guidance regarding commercial to residential space ratios;
> * desired proximity of residential to basic shopping and other services;
> * general information on the economic development strategy for the city/site; and
> * job creation targets (which may be divided between home, office, commercial or industrial occupation and capitalizing on opportunities to provide flexible live/work situations)

Institutional/Community Facilities. A sustainable community requires appropriate institutions and community facilities to provide for basic governance, management, educational and social support services. Reflecting a quality of 'civic-ness' in the community, such institutions and facilities should be designed and sited to play a prominent and accessible role in the community; they should also be designed to serve adjacent communities (particularly if they are under-served with regard to schools, recreation, health care, daycare, community centres, policing, etc.)

> The design brief should outline the social issues and needs in the community; describe the type, number, size and proximity requirements of the facilities; and define any limitations or special requirements regarding mixed-used buildings.

2.3 Parks and Open Space

Open space plays a number of roles in a sustainable community and is key to livability. It is, in effect, the backbone of a community's movement systems, its' public realm, and its ecosystem, and is especially important in developments with densities high enough to support transit and thriving

commercial areas. Key issues that need to be addressed in planning and design include:

* *Programmatic diversity*. Develop a rich program that will accommodate and inspire all ages to participate and interact in the community. Encourage designs which celebrate local culture and identity, encourage imagination, and communicate a sense of place.

* *Recreation.* Designs should provide for a wide range of passive and active recreational activities for residents and visitors

* *Ecosystem structure and function.* Open space should be designed to protect and enhance the local ecosystem including waterways, riparian areas, forest and local species habitats. Spaces should require little energy or water for maintenance and surface run-off should be part of natural water management strategies (see more under infrastructure)

* *Food Production.* Designs should provide for community gardening spaces and, as is possible, urban or semi-urban agricultural initiatives (see also greenways below)

* *Greenways and linkages.* Richly layering green into buildings, streets and infrastructure increases habitat, reduces energy costs, cleans water and provides opportunities to produce food. Ensure a network of open space linkages to provide convenient pedestrian and bicycle movement as well as water movement and habitat corridors.

* *Built form relationships.* Open spaces need to be integrated strategically into the urban fabric to provide views from residential areas and gathering places near commercial areas. Further, open space designs should complement green building strategies by providing shade, solar access, air circulation or water management as appropriate.

> The design brief needs to outline a program attentive to each of these design issues. Objectives, targets and amount of space to be designated for open space as a whole, and as appropriate for various elements, should be specified.

2.4 Mobility Systems

Street patterns are integral to the physical structure of the community. They are the primary access corridors and need to be laid out to provide convenient access to all areas while ensuring activity on the streets is appropriate. Sustainable communities endeavour to develop street designs that support and demonstrate the priority of pedestrians and transit over vehicles. For example, some streets may be designed as places "where people go and cars go slow," or they may become social or recreational activity spaces at certain times of the day or week thereby blurring the distinction between streets and parks. Sustainable communities also seek to use streets as elements of green infrastructure by moving and cleaning water and providing shade and habitat. In general, streets are designed to be as narrow as possible while supporting necessary transportation needs.

> The design brief should provide information regarding the types of streets required (collector, arterial, etc.) and any extensions from or necessary linkages to existing streets. Any special requirements (e.g., a "high street" or street car) must also be specified. Resources and guidelines for developing more sustainable streets, that is, those that provide social spaces and elements of green infrastructure, must also be provided. Setting a rough target for the percentage of the site to be devoted to 'sustainable' streets is very helpful. (Refer also to Infrastructure, Transportation.)

3. Infrastructure

Infrastructure supplies a community with water, energy, and transportation, and manages and removes its waste. Sustainable communities pay close attention to their infrastructure systems, addressing them with the such principles as:

* Minimizing infrastructure overall.
* Developing decentralized and more local systems for supply/treatment in many cases.
* Reducing or eliminating the production of waste and recycling it as much as possible within the site.
* Emphasizing the use, re-use and recycling of renewable supplies (energy, water, materials).
* Designing systems to meet multiple objectives and provide multiple services.
* Designing systems to be easily maintained, to adapt over time and to require a minimum of disturbance when changes are made.
* Designing infrastructure to be visible wherever possible in order to promote learning and understanding.

3.1 Transportation

Transportation is one of the most important infrastructure issues in sustainable community planning. Communities in most of North America have essentially been designed with an ingrained dependence on the automobile and most people feel they require a private automobile to raise a family or run a business. The significant environmental impacts (energy and resource consumption; waste and pollution production; space requirements) of automobiles, the planning patterns they have created, and the massive scale of infrastructure required to support automobile transportation, threaten sustainability locally and globally. Altering this pattern, both functionally and ideologically, is a critical challenge for sustainable communities.

A sustainable community focuses on ensuring the ability to move conveniently from place to place while limiting environmental and social impacts. A transportation study or alternatives analysis may be required in advance of the charrette to establish levels of use for various modes of transportation, and access to nearby roads or destinations. Several key transportation infrastructure and functional issues should be addressed in the design brief:

Modal Priority. A sustainable transportation networks provides convenient service in the following priority: pedestrians/elder scooters, bicycles/skates, transit, goods movement, and vehicles.

> The design brief should define the transportation mode priorities and proximity targets for transit (e.g., time or distance from residences to on-site destinations and transit).

Pedestrian Convenience. A fine-grained network of pedestrian paths and sidewalks should be provided throughout the community linking all key areas and providing ample space for all pedestrians, including wheel-chairs/scooters, joggers, baby strollers, children, dog walking, etc. Providing places to rest and ensuring design promotes safety and separation between incompatible uses is a key issue.

The design brief should provide directions and dimensions for pedestrian systems which accommodate a range of pedestrian needs.

Bicycles and Skates. A network of non-automobile, wheel-oriented pathways should be provided throughout the community to accommodate cyclists, in-line skaters, and other similar modes. In many cases these need to be separated from both pedestrians and other vehicles, especially in the case of commuter bicycle routes.

The design brief should provide information, direction and dimensions for a network of foot-powered, wheeled transportation modes.

Transit Systems. A convenient, appropriate transit system should be provided to connect the site internally as well as externally to key destinations. Onsite pedestrian and road networks must be designed to ensure access to the transit system. Ideally, transit stops on key commuting and shopping routes should be located within 10-15 minutes (300-500m) walk of all areas of a community.

The design brief should provide direction and resources on current transit systems and destinations, and information on additional systems under consideration for the area. Accessibility requirements must be defined along with any additional specifications that may be required for site-specific transit planning.

Emergency Access. The road network needs to provide adequate access for emergency vehicles to all areas of the community.

The design brief should provide information and resources regarding emergency access requirements and guidance on possible "grey areas" pertaining to minimizing standards for surfaces and dimensions considered adequate for fire truck and ambulance access.

Trucking and Goods Movement. The road network must be designed to accommodate goods movement safely and adequately. This includes providing for large trucks and loading zones particularly in commercial and industrial areas.

The design brief should indicate the kinds of truck and goods movement expected on the site and provide guidelines for fulfilling requirements.

Automobiles. Sustainable communities are designed to accommodate vehicles and necessary parking needs in such a way as to privilege other modes over the vehicle, and to permit flexibility of road and parking space when not in use by automobiles. Thinking ahead, sustainable communities also plan for future conversion of automobile-dedicated space.

The design brief should provide information and guidance on automobile transportation and parking in terms high and low road-use times, and numbers of resident and visitor vehicles. Objectives, benchmarks and/or targets should also be included.

New Technology and Cooperation New fuels and other transportation technologies are coming on line rapidly and need to be integrated into buildings and community infrastructure. For example, electric cars need access to power jacks; there may be opportunities to draw methane gas from onsite landfills or compost systems. Car co-ops are also becoming increasingly popular in cities and support facilities can be incorporated into development design especially in new communities.

To the degree that these options are intended to be explored, the design brief/briefing package

should include information on various options and provide guidance that encourages consideration of possible futures.

Parking. Parking demands greatly shape the form and financial viability of much development. The reduction of parking and the increase in user-costs for parking areas is key to demand-side management. Wherever possible, parking should be put underground or in parkades above or behind active street uses. Consideration should also be given to designs which enable the conversion of parking areas and structures into other uses in the future.

The design brief should provide information on current parking requirements (in general terms as parking requirements can be difficult to calculate in some cases), and recommendations or directions on alternative standards or targets. If equations or terms of negotiations for alternative standards can be agreed upon ahead of time, include these in the design brief — charrettes can be great opportunities for city regulators to explore implications of alternative development standards.

3.2 Energy

Energy consumption, impacts, alternatives, efficiency, and conservation (including re-use, recycling and renewable sources) are critical issues for sustainable communities. Designs and technologies which enable the community to reduce energy consumption while simultaneously reducing the social and environmental impacts of production, transmission and consumption, are key. Sustainable communities will explore, and seek to optimize opportunities such as:

* *Renewable energy sources* available on or near the site including solar, wind, geothermal, biomass, etc.
* *Community energy systems* such as district heating and cooling, energy sharing and co-generation systems
* *Alternative technologies* (e.g., fuel cells, photovoltaics)
* *Energy efficient site planning* attentive to latitude, slopes, sun and wind.
* *Energy efficient building design* to optimize energy reductions in lighting, heating, ventilating, and cooling (includes such things as appropriate siting, roof overhangs, insulation and protective landscaping)
* *Energy efficient appliances*

The design brief/briefing package should provide information related to possible renewable energy sources and opportunities for community energy systems and use of alternative technologies on site. Research data to guide site and building orientation should include such information as temperatures at different times of the year; prevailing winds during summer and winter (speed, frequency, direction); and shadow length (taking slope into account) during winter. Benchmarks for energy consumption, and targets or other directions for site energy performance, should also be included.

3.3 Water, Waste Water and Storm Water

The water system in a community includes the water that comes into the community or its buildings, the rainwater that runs through the community, and the waste water that leaves the community and its buildings after use or catchment. Water infrastructure elements include supply and storage systems, delivery systems (including fixtures for flows into and out of the community), liquid waste

treatment systems, and runoff management systems. Conventional water infrastructure systems tend to be large scale, inflexible, energy and resource intensive, and are often designed, operated and funded at the regional scale.

Sustainable water and waste water systems tend toward an ecosystem-based approach which supports maintenance of watershed health, and is focused on the water cycle and the interplay of water use, reuse and disposal. The quantity and quality of water needed is defined and based on minimizing first use and maximizing reuse. Sustainable communities approach infrastructure elements differently and a charrette is an opportunity to explore alternative systems and strategies to transition from existing systems to more sustainable ones. Systems and strategies may include, for example:

* *Demand Management initiatives* such as water-saving appliances and fixtures, system pressure reduction, water use restrictions and/or metering, water-wise landscaping, and education.
* *Water capture and recycling* including rainwater and greywater (see below).
* *Treatment and recycling* initiatives such as *rainwater* harvesting for use in watering landscapes (rain barrels attached to downspout or rainwater reservoirs integrated into building design); *greywater* (water free of human waste such as from sinks, bathing or clothes washers) for black water uses or for irrigation after treatment; and *black water* treatment using filtration and digestion systems, solar aquatics and/or engineered marshes.
* *Runoff management systems* using a range of initiatives — green roofs, percolation areas, high permeability surfaces, swales, retention ponds — to ensure runoff is returned to soils, streams and/or aquifers on or near the site.

The design brief should define water quality and quantity use priorities and identify directions, goals and resources for water system management. Current per capita water use and information regarding regional sewage treatment and storm water management systems should be provided along with guidance for waste treatment options to be explored. Targets of water use reduction, re-use and permeability should be specified.

3.4 Materials and Solid Waste Management

Management of materials and waste in sustainable communities focuses on obtaining materials from sustainable sources, minimization of waste and as much onsite waste treatment as possible. The ultimate goal is to eliminate the concept of waste entirely.

Responses to *materials issues* include:

* *Eco-certification* of resources used in the community;
* *Using local and sustainable-source materials* and those with low-embodied energy;
* *Reduction and efficient use of materials* especially through strategic design;
* *Re-use* of existing or previously used materials where possible;
* *Deconstruction strategies* for existing and new buildings;
* *Recycling of materials* and typical waste products

Where there is an intention to use materials from local sources, other sustainable sources, and/or to reuse materials available onsite (e.g., from existing structures) or to incorporate recycled materials, this should be specified in the design brief. Any objectives or percentage targets should

be specified.

Waste management is attentive to a range of 'wastes' including green wastes, and household, commercial and industrial wastes. Waste management strategies will incorporate such elements as:

* *Recycling systems and facilities* at all levels, from the community down to the individual unit;
* *Composting systems* for residential, commercial and industrial land uses;
* *Establishment of eco-industrial networks* in commercial / industrial areas;
* *Development of business opportunities* in recycling and re-use.

The design brief should provide information regarding anticipated type and volume of wastes that may be generated and outline requirements related to facilities (recycling, composting, etc.) and waste management. Targets should be set for green waste (e.g., all to be returned to the soils of the site) and for other wastes to reduce amount of waste designated for landfills or incineration.

3.5 Information and Communication Technologies

The growth and importance of information and communication technologies has made them indispensable. A sustainable community will have an evolving and sophisticated information technology infrastructure including key communications (phone, video), fibre optic cable systems and, possibly, environmental monitoring systems to monitor (and potentially moderate) stocks and flows of energy, water, emissions, waste, etc.

The design brief should outline key communication/information systems requirements including system-related design considerations (e.g., form, placement and access issues related to shared utility corridors).

The overall goal of the design brief is to provide an overall direction for site development along with specific information and targets to guide charrette participants design work. For sustainable community design charrettes, the focus is on addressing sustainability issues as directly as possible in plans and designs. The design brief must target, or otherwise encourage treatment of sustainability issues as often and as coherently as possible within the context of existing community resources and constraints. The importance of participation by a wide range of stakeholders during the development of the brief cannot be over-emphasized. Although the design brief will likely be reshaped several times along the way, ongoing education, an emphasis on opportunities for ideas exploration, and continuing emphasis on sustainability issues to be addressed will help to ensure the design brief is supported by various interests and serves charrette participants well. The Sustainable Development Issues Matrix (Appendix C) is offered to illustrate and provide guidance on issues for attention and the ways these can be incorporated in a design charrette.

Teams & Participant Selection

One of the strengths of a charrette is in having several teams performing the same exercise. Teams tend to have different approaches to challenges presented to them; they come up with different ideas and illustrate different solutions to similar challenges. Often there is particular expertise resident in one team, or a particular direction is taken by one team, that offers new insights or information to other teams. When carefully attended to by the charrette facilitator, a kind of cross-team synergy can be created that benefits each team and the charrette process as a whole. The number of design teams should not be less than three; if you are considering a very large, public design charrette, more teams are possible.

Team Organization

There are a number of ways to organize teams:

> Integrated design teams with experts roaming around teams providing advice and suggestions while team members work on design ideas.
>
> Specialized expert teams focussed on a special topic or issue. Conversations between groups to share overlapping ideas are then built in to the program. For example, the Jackson County Courthouse charrette had four teams formed around historic preservation, economic development, environmental considerations, cultural change.
>
> Combined format using both integrated design teams and specialized topic teams working alongside one another. Teams are organized by topic but there may be more than one team/topic. For example, Kane'ohe Hawaii charrette addressed large-scale transportation and land-use concepts for a suburban area. There were several integrated transportation teams and town-center teams, and one specialized "expert" environmental land development team.
> Multi-disciplinary, multi-interest teams. In this approach, experts and others work together on design teams. (See Exhibit 1 below.)

The latter approach, multi-disciplinary teams with experts and others working together, is recommended for sustainable community design charrettes. The multi-disciplinary approach ensures a breadth of concerns and ideas are expressed within each team and also provides significant learning opportunities for those involved.

Team Profiles

Developing teams for a sustainable community design charrette requires more than attention to just the particular disciplines and interests that need to be involved. Given the intensity and time constraints of a charrette, there is little time to 'come up to speed' on sustainability issues. Although some information can be provided, and some degree of learning can be facilitated by way of pre-charrette activities, you are well-advised to select team members based at least in part on their already existing knowledge of sustainability issues and implementation challenges in the urban planning context.

In addition to sustainability knowledge and specialized disciplinary knowledge, strong interpersonal

and group process skills are also essential. Skills and styles which facilitate cooperative and collaborative work are critical. The most expert person, if lacking an openness to new ideas and/or lacking strong collaborative skills, will not be as effective as a somewhat less expert person with a more open attitude along with good group skills. Obtaining as much information about potential team members as possible can be very helpful in forming the most effective constellation of knowledge, skills and other attributes required for each team.

To lend credibility and help to warrant feasibility of ideas, each team should include those who can provide important 'reality-checks' on the design process. Including at least one person who has familiarity with existing regulations, policies and decision-making processes within the city or region, and one person who is familiar with development costs and funding opportunities, is strongly recommended. Different within-discipline perspectives are also very valuable to the charrette process. For example, including both traditional/ conventional development or planning perspectives as well as "new urbanism" or "green design" perspectives within a team can provide a creative tension likely to be beneficial to the process. Incorporating these perspectives explicitly will also increase the credibility of the charrette. Sample selection criteria and a team profile (used for the SEFC charrette) is provided in Exhibit 1

There are two further considerations in building a team. First, it is important to ensure that there are "good hands" on each team. By this we mean skills in giving visual form to ideas. The charrette is, ultimately, about translating ideas into visual form. Architects and landscape architects, for the most part, communicate by drawings, plans, sketches and 3-dimensional models. Others, such as engineers, developers and planners, communicate via numbers, tables and diagrams. Strategies that combine representational approaches are desirable. Not all team members will have "good hands" but you want to ensure that each team has at least one or two who do. If resources are available, assigning a graphic artist to each team (as was done in a Santa Monica charrette) is an option to consider. A graphic artist can capture and translate team member ideas and rough sketches, and generate an abundance of drawings to view and further discussion.

Finally, consideration should also be given to the inclusion of at least one "foreign expert" on each team. Foreign experts add a measure of objectivity and "new eyes and ideas" to the teams. It is important to ensure any foreign experts included are considered "top in their field" as that is good rationale for the added cost. If the charrette timing coincides with other events occurring in the area (e.g., a green-building conference or similar), you can take advantage of experts already likely to be in town; co-sponsoring arrangements can help reduce costs.

Exhibit 1
CHARRETTE TEAM MEMBERS & PROFILES

Selection Criteria:

* Understanding of the concept and principles of sustainable development; knowledge of implementation strategies and approaches; awareness of issues arising out of implementation attempts

* Strong communication skills including interpersonal and group process skills

* Specialized knowledge and experience (see next section).

NB: At least some of the team members are expected to have 'good hands,' i.e., well-developed skills in giving visual form to ideas

Design Team Profile: Each team will include the following:

Architects (2): One experienced in large scale urban development projects generally of the more conventional/traditional form; one 'green' architect
Landscape Architects (2): Same profile as above
Engineer (1)
Economist/Developer (1)
Planner/regulator (1)
Student support/assistants (4)
Other Environmental planners, biologists, botanists, and others may be important if particular kinds of issues, such as stream protection, need to be addressed.

Team Leadership

Team leaders can be assigned or can be self-selected by teams. Generally, leadership surfaces fairly quickly within team — co-leadership is also very common — and is part of the natural process of team work. That said, each team will need to ensure that the 'deliverables' are forthcoming in the time provided and making this explicit is important. How the teams sort this out is, for the most part, up to them, but organizers are well-advised to 'tap' at least one person on each team as the person they expect will take responsibility for making sure the team delivers.

Other Participants

In addition to the charrette facilitator and team members, there are other people whose participation in the charrette is valuable and recommended. At least one *facilitator support person* should be available to handle various logistics (e.g., ensuring materials are available and fulfilling additional requests if needed and as appropriate; ensuring food and refreshments are provided in a timely fashion; managing expected or unexpected drop-ins) and respond to special needs or unanticipated events. Also recommended is the participation of one *person from the sponsoring group* (usually a senior city planner) who can view the whole process and thereby provide an 'insider's' perspective to the sponsoring agency. This individual can also be a valuable resource if questions arise about

particular aspects of the Brief or particular agency-related questions. Planning for at least two or three people to help *'tear down'* the charrette and gather up all materials and drawings after the close of the charrette is also important. Finally, a *photographer* or *videographer* is also valuable. This role can be taken on by any of the aforementioned individuals or an additional person can be assigned to this role. The photo/video record of the process and various along-the-way outputs of teams can be very useful in post-charrette information sessions.

Including *students* on teams provides them with unique learning opportunities and teams with additional hands. As well, young people often bring energetic enthusiasm and ideas that seasoned professionals may not consider. When involved in advance activities, especially those designed particularly for students, students can also become valuable resources. Prior to the Southeast False Creek charrette, for example, participating students had already completed a design studio course using the SEFC design brief. As a result, they had already done significant research and worked through a number of ideas; in effect, they were more informed about the site and various constraints and opportunities than most of the professionals on the design teams. In sum, involving students and faculties in both pre-charrette events and the charrette itself, has a number of overall benefits.

A *Resource Team* is another consideration. A resource team consists of people with specialized knowledge (history, waste management, sustainable housing, etc.) who can provide or undertake additional research information in response to requests from teams. In our experience, resource teams tend to be under-utilized. Further, the temptation to join a team and get "hands-on" is often great and, at times, can be disruptive of team process. Given the time constraints, it is usually more effective to anticipate team needs as much as possible, and provide relevant background information to team during advance orientation meetings or by way of the Briefing Package or additional resource materials available at the charrette site.

Finally there is the question of involvement of the *general public, interest groups and the media* during the charrette. As much as possible, it is recommended that team members are selected not only for their disciplinary expertise, but also for the degree to which they can be drawn from members of the general/local publics and interest groups. Involvement of other people, and the media in particular, must be given careful consideration. The charrette process is creative, chaotic and often fragile; additional observers or others who do not fulfill selection criteria as noted above, can inhibit or forestall the process.

That said, a more public charrette can be constructed to coincide with a public exhibition or design fest in which team work is visible throughout the charrette, and the public has additional opportunities to provide input to teams during the process. Teams would still need to be 'protected' from undue interference and this option does have implications for both venue and timing. Ideally, teams would work in cubicles that are viewable from galleries or balconies above. The public can generate additional ideas which are then delivered to appropriate teams by way of post-its or feedback

Chattanooga, Tennessee

A public design charrette held by the regional planning agency drew 300 residents and business owners to help create a vision for a mall and surrounding area. The heart of the week-long process was a six hour 'designing in public' event in which 150 community members gathered in an empty storefront inside the mall and broke into 11 groups of "citizen planners" to create separate plans for the area. Over then next few days, elements of these plans were evaluated and combined to form a composite draft plan that was presented at the end of the week to an audience of about 250.

— *Mall Over,* Urban Land, July 1998

sheets. Additional time is needed for teams to process and incorporate ideas as appropriate. At the end of the charrette, a high profile symposium can be held where team ideas are presented and discussed in an open forum. This more public charrette option can be very seductive but organizers are cautioned to weigh the potential costs and benefits carefully.

The advantages in 'protecting' charrette teams from outside interference or judgement regarding in-process ideas, and thereby create a mini-community during the charrette can be quite substantial. Most people like to be more private when doing rough drafts and working out untested ideas. There is certainly more pressure (and often more restraint) when exploring ideas in an increasingly public forum. Communicating the need for charrette teams to work without additional constraints (such as may be felt if observed or interrupted by drop-in visitors) is important. When opportunities for involvement pre and post-charrette are provided, when it is clear that there will be many opportunities for viewing the results of the charrette once complete, and when there is assurance that the process is intended to be transparent, people generally accept and honor the intent to protect teams while they are in the midst of formulating unfinished ideas. Well-timed press releases and event invitations help ensure the media is informed and can play a role in ongoing sustainable community planning work.

Time and Timing

Sample Schedule

1700-2200 Opening Evening
0830-1700 Day 1 Team Work
0800-1700 Day 2 Team Work
NB: Teams continue working independently thereafter as desired
0800-1230 Day 3 Presentations & Celebration

Although some charrettes are a little shorter and some longer, a good average length of a charrette is 3-4 days (not including pre-event activities). Beginning the charrette with an opening, orientation evening is a fairly informal way to start the charrette. At this time team members can meet each other (and it may be the first time they do), roles and process 'rules' can be explained, various design issues and expectations can be highlighted, and any additional information can be provided. Beginning a charrette the evening before design teams actually begin working also has the benefit of 'sleep time' reflection on issues and expectations and affords participants more time to get oriented than an orientation start-up just an hour before hand.

The scheduling of the charrette event depends on a number of factors. Various pre-charrette activities must be complete and, given the number of unexpected turns that can occur as a result of meetings and inputs, you are well-advised to have many of these complete or well-underway prior to scheduling the actual days for the charrette. Participant availability is another issue. Avoid planning a charrette in early September when people are often in the midst of getting children back to school, or close to Christmas, or during tax season, or at other times when participants may be over-involved with, or otherwise distracted by other responsibilities and commitments. As previously noted, there is some advantage to scheduling a charrette close to a sustainability or green design conference in the area.

Venue & Facilities

If at all possible, choose a charrette venue in proximity to the site of interest. If this is not possible due to other constraints, do ensure there are opportunities and vehicles for participants to walk the site area or provide a video recording of the site and its features. The selection of venue will obviously depend on such factors as resources available and number of participants. Each team will need enough room to work at nested tables and have ample wall or board space to post their various drawings and idea iterations. (*Check this out ahead of time! Some venues don't allow for posting things to walls in any way. In one case we ended up wrapping all the walls in plastic and bringing in extra room dividers!)

Venue Proximity to Site

The site was very important and influential; it was a lot smaller than it looked on paper and we had to re-think some of our initial ideas. There were also some key features that became more apparent during the site visit and we chose to focus on them more particularly as a result.

— SEFC charrette participant

Teams should be somewhat shielded from each other — at least enough to indicate they have their own spaces — while still being in proximity to one another to allow for both cross-fertilization of ideas and to enable the charrette facilitator to direct and monitor team processes adequately. The space also needs to be large enough and flexible enough for teams to gather together in a large group easily. If at all possible, select a space that has natural light and ventilation and access to the outdoors (patio, balcony).

A separate, adjacent room needs to be available for various support materials (background documents, paper, board, drawing instruments, etc.), for a photocopier and, as may be desired, computer equipment. A photocopier is indispensable and you will want to ensure that you have direct access; having to run to distant rooms or waiting for people not involved in the charrette to use equipment eats up a valuable time and can be very frustrating to charrette participants. If you are going to bring in your own equipment, make sure that the facilities have sufficient power and outlets.

You will also want to be sure that the venue you choose either provides or enables you to provide high quality food and refreshments at various points throughout the days of the charrette. Further, since this is a sustainability charrette, you should seek-out fresh, local sources and keep most of the food as low on the food chain as possible. Ideally, food and refreshments should be available in the same room within which the teams are working, and you should have 'on call' access to food providers. Be sure you provide menu variety: do ***not*** just provide the same sandwich fare everyday and do ***not*** use a smorgasbord approach for more than one meal — at most! (Smorgasbords are often stressful to the system and may take energy from participants). A lot is being asked of participants and many of them will likely be providing their services pro bono or at significantly reduced rates. Paying attention to foods that are healthy and well-presented will do much to both garner appreciation and keep participant energy up. Aim to have participants talking about how great the food and food presentation was; make that one of the remembered highlights of the charrette!

Support Materials

Decisions made in a charrette setting reflect heavily on the level of information, education and understanding available within teams, and the capacity of the participants to communicate and reach consensus. Support tools are essentially of two kinds: those that are provided prior to the charrette; and those that are available at or during the charrette.

Advance Supports. Various pre-charrette activities, meetings or other events provide a number of opportunities for increased understanding of the issues and opportunities to be encompassed by the charrette. Aside from these, the *Briefing Package* is a key document for charrette participants and should include the following:

Charrette Agenda
An outline of participant roles and responsibilities
A list of team members by role and team
Introduction to the charrette participants by way of short bios describing organizational affiliation, education and work experience.
The Design Brief and a 'cheat sheet' that includes performance thresholds and design objectives for each of the issue categories on a single reference sheet
Expected deliverables including specific drawings required (e.g., master plan, a street section, street level perspective, analytical diagrams showing site systems and function)
Supplementary materials such as copies of vision statements, relevant policies, special site-related reports (e.g., targets, benchmarks, design paradigms, particular challenges) or other relevant research reports (e.g., high density housing, environmental issues, site history)

Onsite Supports. In addition to various kinds of supplies (refer Logistics below), forecasts, population statistics and demographic information, research reports of various kinds, design ideas generated during pre-charrette events, photographs and a variety of maps, are very useful. Support staff and designated experts or resource team members (if this option is chosen) provide additional on-site information and research resources.

ADDITIONAL LOGISTICS

Obvious logistic issues include venue-related arrangement; outside visitor travel and accommodation; materials production, delivery and distribution; and various communication needs in confirming and reconfirming (and reconfirming again) participant involvement and commitments. Some additional logistic issues requiring attention are described in more detail below.

On-Hand Supplies and Equipment

Most architects and landscape architects will have their own drawing tools and should be encouraged to bring them. In addition to the tools participants may bring you will need lots of pens and markers, pencils, erasers, papers of various kinds, masking and transparent tape, staplers, paper clips, post-its, etc. A list, with quantities suggested for approximately 40 participants is provided in Exhibit 2. In addition you will need: site maps that can be used as an underlay for teams to draw up ideas; a camera to record process and in-process ideas; a photocopier (indispensable); and a phone. Do not rely on the venue facility to merely provide access to a photocopier or phone; it is often necessary to bring in a photocopier and to have your own cell phone to facilitate communication and management.

Exhibit 2: Onsite Supplies & Equipment
(For ~40 participants)

Supplies

(75) Name tags (for participants and visitors)
(100) Felt markers in many colors. Get 3 sizes: fat ones, sharpies, and ball-point equivalents
(100) Pens: black, blue, red
(50) Pencils
(40) Erasers
(10) Several rolls of masking tape and transparent tape
(3+) Site maps mounted on board to use as underlays for team drawings
Several rolls of trace paper (one rule of thumb: 1 roll/2 people)
(18) 12" width
(18) 16-18" width
(18) 24-36" width

We want tons and tons of trace. Spend money on that. We want the place flooded with trace. Up to their knees!

(35) Vellum sheets (24x36" or size expected for site plans)
(18) Mylar sheets (24x36")
(10) Scissors, exacto knives
(12) Sheets of foam core for model building (some teams do create 3D models)
(6) Flip charts and flip chart paper (2/team)
(10) Packages of post-its in two or three sizes
(3) Boxes of paper clips
(3) Staplers (1/team)

Equipment

(1) Photocopier
(3+) Extension cords
(1) Digital or other camera (digitalized images are useful; otherwise images will need to be scanned)
Additional lighting (e.g., spotlights for presentations) may be required
(1) Public address system may be needed

Miscellaneous

Having a bottle of aspirin, an antacid and some bandaids on hand has proven helpful on a number of occasions.

Optional

— Computer and printer with basic word processing software and drawing program (CAD not necessary). Team members can also be encouraged to bring their own laptops to track their work and prepare deliverables. Be sure there are sufficient power outlets.
— Video camera and/or playback equipment
— Slide projector (may be needed for advance presentations)
— Image projector (relatively inexpensive and can easily project flat images on to walls for cross-team reports during charrette and for final presentations)

Transportation

Local residents will have their own means of transportation but outside visitors will need to have a means to travel to and from the charrette venue. If accommodation is remote from the charrette venue, arranging rides to and from the charrette in the morning and in the evening will be much appreciated. Arranging to have a vehicle or vehicles available to take participants to the site area is also a good idea. Some participants may not have availed themselves of the opportunities provided to visit the site in advance of the charrette; others may want to revisit the site to check out particular features or layout after they have begun to sketch ideas. Thinking ahead regarding such possible requests prevents last minute scurrying around for transportation and can reduce costs as well.

Contracts

Part of the approvals process will involve getting the city's "Law Department" to approve all contracts required with participants. Municipal lawyers are generally overworked and extremely cautious, and can get frustrated at dealing with the several dozen contracts with professionals for the indeterminate products of a charrette, and the range of expenses or disbursements that may be involved. This is especially true when these contracts are for fairly small sums. On occasion, a generic contract can be created and approved by the city's Law Department and be used with each participant. It is important that enough time be scheduled to get these contract issues resolved before the charrette takes place; this is especially true for contract issues such as copyright and intellectual property. A final aspect to this is the simple need to ensure every participant signs their contract — in the excitement and flurry of activity that typically accompanies a charrette, it is easy to miss one of the several dozen participants. It's a good idea to have participants sign the contracts at the start of the charrette orientation session; in any case, do your best to have all contracts signed before the charrette actually starts.

PREDICTABLE CHALLENGES

Contributions. While the bulk of resources (particularly financial) necessary for the charrette will likely have been obtained during the approvals process, additional resources will be sought during the planning stage. One issue that at times arises concerns the question of involving private corporations as sponsors if they may be perceived as having only a "corporate advantage" agenda, or if there is a fear that one set of interests will be emphasized over another. The decision of whether to include or exclude corporate or other special-interest sponsors should depend "entirely upon whether or not such sponsorship would preclude a fully open and critical discussion of environmental, economic and social impacts of proposed future plans" (Watson, p.52). The charrette process is specifically designed to encourage this debate and allow for alternative visions to be drawn and detailed, and the design brief, already reviewed in depth, is a significant moderator of various interests.

Whatever contributions are being asked of participants (fee reductions, provision of other resources and equipment), it is important to ensure that contributions are acknowledged; recognition and transparency is key. Roles of contributors and the benefits of their participation must be clear and explicit to prevent the possibility of future resentment or expectations of favors.

Staged Funding. The approvals process for funding can sometimes be a staged process within the

funding organization. At times, additional 'strings' will be attached to the funding as more levels of management are asked to approve or concur with funding a charrette; this may happen even after funding has been committed. There is little one can do about this but try to accommodate the additional requests. If the additional requests pose problems, a respectful discussion will be required to maintain support and release funds.

Access. As discussed earlier, there will be a number of stakeholders and other parties interested in the charrette; the issue of participation in and access to the charrette event will be a key issue — particularly for those that are contributing resources. Along with the Council allocation of resources may come the automatic assumption that every Councillor can visit the charrette event any time they like, and that every staff member who desires to, can participate. It may also be assumed that the media and key community figures who want to participate will be permitted to do so. We have already discussed various options, costs and benefits regarding limited or expanded involvement in the charrette, but it should be clear that denying access to a charrette process, paid for with public funds, can be risky. City staff and Councils may be uncomfortable with their staff or consultants doing anything behind closed doors that may have impacts on city lands and the public interest. It will be important to ensure that various parties understand the rationale behind more limited charrette event participation; that representatives are fully informed of the process at each stage; and, wherever possible, that acceptable representatives of various groups participate as team members in the charrette.

Diverse Knowledge and Experience. While the design brief will contain much valuable information on the sustainability issues and targets, and the team selection process will help to ensure knowledgeable people are on each team, problems can occur when participants have widely differing levels of experience with sustainability. Information provided in the Briefing Package and orientation sessions must be sufficient to ensure everyone has at least some common foundation from which to work. This will be particularly important for team members who may not have design backgrounds but are involved for other reasons. In cases where a design charrette will seek to address a relatively new issue (e.g., eco-industrial network development or advanced habitat design) or a site with especially critical issues (e.g., steep slopes or contamination), education sessions may need to be scheduled at the outset of the charrette, and additional issues-related materials or experts may be needed on site for participants to access during their work.

Regulatory Complexity and Full-cost Accounting. Overly simplistic or 'hard rule' regulations often limit, or threaten to limit, opportunities to develop in a more sustainable manner. Regulatory systems and their agents are often significantly challenged by the complexity of sustainable or 'greener' developments and the alternatives they seek to incorporate. Full-cost accounting (accounting for time frames and relationships between factors which affect the long term health of a community), along with technical reports, can be very valuable in helping to persuade regulators to be open to new ideas and exploration of alternatives. The fullest of information may not always be immediately available, however, and successful case examples may need to be offered instead. Clearly, involving regulators both prior to and during the charrette becomes critical. The key is to obtain as much information as possible regarding potential flexibility in existing regulations; reflect the ranges in the Brief; and ensure that the Brief does not set directions that may lead to design ideas unlikely to find regulatory support in implementation.

Change. Expect the unexpected. In preparing for the charrette, and in developing the design brief

in particular, you may discover that those you would have thought would be 'on side' may get overly-embroiled in details and conflicts may arise between different interests. You will need to negotiate parameters that encompass concerns (e.g., different kinds of minimum-maximum ranges) and emphasize an attitude of "let's imagine first and then decide whether it's foolish."

Given that a lot of time is needed for charrette preparation, you may also discover that other ideas for the site of interest arise during your planning. Keeping an eye out for possible other site-related initiatives is essential and proponents will need to be informed and consulted regarding your charrette plans. At times the ideas they represent may be easily incorporated within the charrette agenda. At other times, the issues involved may be so controversial that the charrette may have to be postponed until the issues are resolved.

There may be times when situations are far too "loaded" to permit reasonable community discussion to occur. For example, a site that was the focus for a charrette in Bridgeport, Connecticut, was later selected as a potential location for a controversial casino development. Charrette planning was suspended until after the casino option was resolved.

The key message here is to be flexible and responsive to change in plans along the way. In most cases, if you have done your homework and all the necessary interests and stakeholders are involved, the charrette planning phase should proceed quite smoothly despite of the ambitiousness of its agenda.

Pre-Charrette Readiness Assessment

Use the following checklist to determine your readiness. To help ensure the smooth running and useful results of the charrette, make sure you have not missed anything below.

— Resource contributors all confirmed
— Meetings with experts and specialist resources undertaken to gather important background information, help hone the charrette vision and objectives, and inform the Design Brief
— Meetings with interest groups, local community members and general public to ensure concerns and interests are addressed during the charrette
— Relevant parties and sponsoring authorities regularly updated with status reports and support/approvals obtained
— Site tours arranged and conducted for interested parties and participants
— Charrette design consultant and facilitator confirmed
— Design Brief prepared and finalized
— Teams constructed and participants confirmed
— Briefing package prepared (including all elements as described above) and delivered to participants at least one week in advance of the charrette
— Venue-related arrangements confirmed (space, food, physical arrangements)
— Travel and accommodation for outside participants confirmed
— Supplies and support materials prepared and ready for use at site
— Equipment (photocopiers, cameras, cell phone, etc.) arranged and ready
— Venue layout completed, equipment, supplies and materials appropriately arranged and checked several hours before participant arrival
— Contracts ready for signing by participants
— Post-charrette plans for initial charrette results presentations (to whom, when and where) developed and relevant parties informed

SUMMARY

The quality of the charrette experience and its outcomes depends on what you do ahead of time. There are two principles that should guide your efforts: "Get stakeholders involved early on" and "Don't leave anyone out." Charrettes are interesting events and can have significant influence on future planning and development decisions. The process must be transparent and as many people as possible, including those normally left out of planning and decision processes, should be informed and have opportunities to provide input into the charrette goals and program. Pre-charrette meetings, events and other activities involving a wide range of individuals and groups is essential.

Of the many charrette preparation activities that are to be engaged, two can be considered primary: charrette team member selection and development of the program brief. Careful selection of charrette team members is critical: attention to knowledge of sustainable community planning and related implementation challenges and specialized disciplinary expertise is important, but an openness to new ideas and high-level interpersonal and group process skills is at least as important if not even more so. The development of the Design Brief will represent a significant investment in order to ensure that is sufficiently bounded and precise to ensure realistic outcomes and attention to a number of integrated issues, while providing room for significant innovation simultaneously.

Finally, there is the development of the full Briefing package, the assembly of appropriate background documents, support materials and supplies, and the final confirmations of personnel and the nitty-gritty venue-related arrangements concerning food, refreshments, layout, and equipment. Like preparing for opening night, everything must be in place before you 'start the show.'

THE CHARRETTE EVENT

It is the day the charrette is to begin. You have gone over your "readiness" checklist several times already. If you have followed the recommendation to begin the Charrette in the evening, then today will be the day to re-confirm refreshments, set-up the physical space, and organize all materials, equipment and displays (otherwise you will either have done this yesterday, or you will be up *very very* early!). Soon, people will be arriving. The charrette consultant/facilitator will be the lead choreographer point-person for the event but s/he will not be working alone. This chapter walks through the main stages of the charrette, outlines the various tasks that need to be completed along the way, and provides some coaching hints regarding tasks, timing and predictable challenges.

STAGE 1: INITIATION

Your first step is to ensure that everything is ready for the opening orientation stage of the event. Your support personnel under the direction of the lead facilitator will be very helpful here. Key ***physical arrangements*** include:

* Direction signs in the lobby and/or on venue event boards to guide participants to the venue space.
* A welcome sign at the entrance to the space along with any first directions for arriving participants (a flip chart and stand works well for this)
* A table near the entrance where participants will sign in and receive any additional materials (you will, of course, have already sent a briefing package out to participants).
* A refreshments table (remember that this should be appealing)
* Various visual displays on walls or panels
* Chairs arranged in a circle for opening discussion
* Any address system, visual display and recording equipment arranged and checked.

As people arrive and sign in, you have an opportunity to get signatures on any contracts that have not yet been signed, and then direct people to have refreshments and begin looking at displays and materials. This is also an opportunity to welcome participants individually, introduce individuals to one another when they arrive close together, and generally begin to set the stage and tone of the charrette. At least two people should be at the welcome table to handle administrivia and general direction-giving. A senior person from the sponsoring agency (usually the City) and the facilitator are the primary 'hosts' and should be on hand to welcome people as they arrive.

Goals

Tone & Culture

There are several goals to be met during the initiation evening. One of the key objectives is to begin to set the *tone and 'culture'* of the charrette event: comfortable, friendly, safe, interesting, creative, challenging, supportive. The physical arrangements and organization of the evening should initiate and reflect this kind of tone. On the first evening, many people will arrive immediately after work and will probably be in usual 'suited' work attire (this will certainly be true of presenters); at some point in the evening, however, it participants should be encouraged to come casually and comfortably dressed for the main work phase of the charrette.

Common Information

Another key objective is to ensure that everyone has a *common understanding* of the content and

process of the charrette. Everyone will have received their briefing packages but there is no guarantee that everyone will have done much more than give it a quick glance or read. Presentations should include some general background information regarding events and work preceding the charrette; a walk through and highlights of the Design Brief and performance criteria; and an explanation of the process and timing of the rest of charrette event including articulation of final expected deliverables.

Getting to Know You

Finally, the initiation event is the first opportunity for people to learn a little about each other, and to begin to get to know members of their charrette team. Time should be built in for all participants to hear a little about each other (1' self-introductions are generally sufficient). Time should also be built in for participants to meet together in their teams to begin to get to know one another and to get an initial feel for their group. At least half an hour should be provided for this.

Sample Agenda for Opening Evening
Southeast False Creek Charrette

1700: Arrival, food and refreshments
1745: Call people together
1800: Welcome and overview
1830: Participant self-introductions
1930: Short break
1945: Presentations
2100: Summary and process guidelines
2115: Team Break-out
2145: Next steps and closing
2200: End

Timing

Transitions between arrival, welcoming address, introductions, presentations, etc., should be smooth and fluid. You will need to strike a good balance between 'talking head' time and time for interaction among participants and with displays and resources within the environment. The 'talking head' time (overview, presentation, guidelines) should consume less than half of the time at maximum. Organize the various activities so that there is a variety of activity type and ensure that none extends more than 1.5 hours. By the time of closing, participants should be well-oriented to what lies ahead and eager to get started.

STAGE 2: THE MAIN EVENT

The two or more days designated for primary design activity will be characterized by uncertainty, creativity and chaos: expect it! All days should 'close' (even if teams continue working thereafter) with the group gathered together as a whole; be sure you have organized the space so this can be achieved easily. This whole group, day-ending time provides participants with an opportunity to talk about how they are proceeding, the challenges they have faced, and to ask any questions that they may have. Additional information or 'heads-up' plans or changes important to the group as a whole can also be provided. This closing time with all participants together provides continuity and coherence to the whole process and reflects the idea of different teams (diverse interests) still being part of a whole 'community' working together towards common ideals.

Day 1. The first day should begin with the group gathered all together. The plan for the day should be laid out, team work and resource locations noted, reminders provided, and any last minute changes, additions or questions should be addressed during this time. A great deal of the team work on the first day will be about getting a feel for each other and for the task; deciding on a starting point and approach; discussing and debating issues and possible solutions; fumbling and way-making; and, eventually, starting sketches. Letting teams know that this is what they can anticipate during the day helps manage expectations and provides a little subtle relief of performance anxiety. In some charrettes, strong leaders are provided to direct each team. This has some advantages in

terms of getting people on track quickly but it runs the risk of a single-view dominating the charrette process. In any case, participants are leaders in their own right and team leaders do emerge during the process (even if one is assigned). We recommend letting the team work leadership and directional issues out for themselves: it is an opportunity to model such sustainability ideas as individual responsibility, shared leadership, and self-governance. The facilitator can monitor progress and provide assistance as may be necessary, and support personnel can provide additional resources as may be needed or requested.

After the closing of Day 1, participants should gather together for a shared dinner. This is often a good time to invite some non-participants (Councillors, City staff, key community leaders and others who have been working on the project) to meet participants informally and feel a part of the charrette. A restaurant off-site is often ideal for this.

Day 2+

After the first day, teams will arrive and begin working in teams from the start. The facilitator and support staff will be working to monitor progress and ensure that everyone has the materials and other resources they need for completing their work. Lunch should be scheduled at the same time to provide all teams with a break and an opportunity to chat across teams. Some teams will work so intently that they may forget about or delay eating; some may just pick up food and go right back to work. Participants should be encouraged to take a break and, if necessary, cajoled with reminders about *personal* sustainability. Beyond lunch, healthy snack food and liquid refreshments should always be available so participants can graze as needed. As noted above, the group as a whole should gather together at the 'official' closing time for a short debrief and report out. Teams can continue working independently thereafter and many teams/participants will choose to do so. It is a good idea to ensure there is food and refreshment available for their continuing work (the needs can be determined during the day by talking with teams about their after-closing intentions).

Special Note:

Even if you have arranged site tours in advance of the charrette, some participants will either want to revisit the site or visit it for the first time if they did not have an opportunity to do so earlier. As noted in a previous section, it is wise to have thought ahead about fulfilling such possible requests by having a transportation plan at hand. Alternatively, a video recording of the site could be made to provide a useful reference and reminder for particular features or areas of the site.

STAGE 3: PRESENTATIONS AND CELEBRATION

The presentation time provides another opportunity to invite people from outside the charrette to become part of the process. At this stage, however, it must be made clear that the presentations are raw results of an intense process and are works-in-progress. Often the work done during charrettes is followed by a couple of weeks of 'cleaning-up' and preparing more 'formal' drawings. In any case, the charrette results represent possibilities and ideas for later reflection and elaboration; they will be reviewed, edited, reworked and refined by a variety of constituencies for some months after the charrette.

There are certainly a number of options regarding potential attendees at the presentations but it

should be remembered that there will be a number of additional opportunities for display of charrette results post-charrette. Inviting large numbers for the first reporting out of team work has implications in terms of space and, possibly, movement of displays to other locations that can be very disruptive to the whole process. Further, exposure of raw work immediately following the intense design charrette can put additional and unwarranted stress on charrette participants. For the first raw report-out, it is better to confine the list of charrette 'outsiders' to a fairly small group of people most of whom have already had extensive involvement in the process or those will be using the results most directly in the immediate future (Councillors, City Staff, lead representatives of particular community groups/interests, and, possibly, media).

The physical arrangements for the day of presentations will require some special considerations. Some set-up (chair arrangements, display areas, address system, etc.) can be done the night before but don't be surprised if Teams are still working — they will often work to the wire. Directions can be given to teams regarding their own Team area set-up, display and presentation areas, but expect to come in early to do final adjustments.

Provide time (30-60') at the start for people to wander around looking at the various Team displays. After people have had some time to get some refreshments and view displays (time will vary depending on when they arrive), gather people together and open the presentation session with congratulations for the Teams and a welcome to visitors. A brief overview of the process the Teams have engaged over the prior days, and some very brief highlights of the directions they were given, should be included in a quick overview. It is likely that some officials will want time to speak as well and you will need to build this in. The remarks should be as brief as possible, however, as the focus should be on team presentations and discussion.

Following the introductions, each Team presents their work (how they do this is up to them). Time for presentations should be prescribed and each team should build in time for a short question and answer period following their presentations. Once all presentations have been made, the facilitator will moderate discussion. Ideas people liked particularly, and questions regarding various ideas and solutions, provides a good focus for the discussion. A professional facilitator will be well-equipped to ensure that the focus remains on likes and questions versus dislikes and debates.

The final step following presentations and discussion is to close the event with thanks and applause, and then CELEBRATE! This is an important and often neglected step in the process. You can expect (and should plan for) a festive atmosphere following the completion of a charrette. Some special food treats, cake and some bubbly to mark completion and to honor the efforts of all involved will be very appreciated.

DOCUMENTING THE CHARRETTE

There are two main documentation considerations for the charrette. The first concerns documenting the process of teams during the charrette. Still photographs, video clips and even audio records of team work, discussions and interim drawings and sketches help to communicate the process and bring it 'alive' for non-participants. and provide a useful database in preparing post-charrette reports and presentations. Taking photographs of teams and their outputs at various points during the charrette, and dating the products at the end of each day, helps to document the work in progress. The facilitator and support staff should have general access to a camera in order to capture particular

events as they happen but one person should have primary responsibility for photography during the charrette.

The second documentation task concerns the gathering and labeling of all materials at the end of the charrette. Teams may have already bundled together materials not used for their presentation and, thereby, assist in the task. All materials should be identified by team. Assuming that teams will be refining drawings post-charrette, the responsibility for some materials will reside with a specific team member; other drawings and sketches will be returned to the office of the charrette coordinator/sponsor. Eventually, all material, rough and final, are to be returned to the office; photo records of all sketches will help with later tracking.

PREDICTABLE CHALLENGES

Support staff will need to notify the choreographer of any actual or potential problems or difficulties but most problems should be fairly easily resolved without taking the choreographer away from the larger task of maintaining the stability of teams and the charrette overall. The following provides guidance on some of the possible challenges that may arise during a charrette.

Last minute cancellations. Participants should understand in advance that their participation requires a firm and full commitment (no partial attendance). Nonetheless, personal or professional circumstances my occur that result in last minute cancellations or changes to participation. Arrange to have a couple of people available to fill-in for a participant in case of an unexpected cancellation If a participant unexpectedly has to leave during a charrette and is not likely to return, discuss options with the charrette team. In most cases, especially if they are already well into their design and planning efforts, teams will probably choose to continue without a replacement. If particular expertise is necessary and the team work will suffer without it, there may be a need to draw on back-up people or to share disciplinary resources with another team or teams. The charrette facilitator will need to resolve the situation with teams for the best overall benefit.

Resources. Participants may forget to bring their Briefing packages so be sure to have extra packages and cheat sheets on hand. Participants may also request additional materials, resources or supplies and you will need to be prepared to respond to such requests as appropriate. One of the support persons should have responsibility for following up on requests but it is best to anticipate possible requests as much as possible and ensure you have sufficient supplies on hand. Participants should also know that, although you will do what you can to fulfill requests, not all requests — particularly informational resource requests — may be possible to fulfill.

Equipment. A range of equipment is required for most charrettes. Always have back-up plans (alternative equipment, projector bulbs, etc.) in case equipment fails.

Environmental Conditions. In spite of frequent visits to the facility and careful planning, such unforeseen problems as insufficient of excessive heat, noise, or lighting problems may occur. Due to the intense nature of a charrette, the environment must be comfortable for participants. Know ahead of time who the key contact should be if you run into any difficulties. Explain and explore ways to mitigate the problem; be firm and ensure the problem will be addressed as quickly as possible. Inform participants of what is being done to resolve the problem.

Team Progress. Team work may appear to be disorganized or slow; sometimes there may appear to be irreconcilable differences among team members. Differences and debates among teams members should be expected — in fact, they are critical to the process. Your charrette facilitator will be monitoring all teams and will intervene as is necessary; they have the professional expertise and insights to address interpersonal and performance issues that may arise.

In terms of what may appear to be a lack of progress, it is important to recognize that team work *will* be slow and appear disorganized — especially at the start. Teams have their own rhythms and, for the uninitiated, it may seem as if getting products from teams is going to be an impossible task. Have faith! Often the work of teams will not really begin to take a recognizable shape until very close to end. This can be nerve-wracking but, assuming the charrette is well-designed, and the lead consultant/facilitator and participants well-chosen, you can be confident that the teams will deliver.

Requirements confusion. No matter how well thought-out and reviewed the Design Brief may be, expect that people will want more clarification or precision. Often participants will have to proceed without having absolute answers; at other times you may be able to provide clarification or additional information. If new information or guidelines are provided, be sure that the guidance you provide is consistent with the organizers' agenda; check with senior staff before making any significant changes (such as site boundaries or density requirements).

Wander-ins. If the charrette is an essentially 'closed' event only 'authorized' participants should have access. In spite of signage and advance information regarding access to the charrette, someone may on occasion wander in unexpectedly. It is important to keep an eye out for this possibility and engage the individual as soon as possible. The individual(s) may have stumbled in unawares or by accident, or may have a specific intent or interest they wish to pursue. As politely and firmly as possible, inform them that the event is private and provide information that may be of interest to them regarding how they can learn more about the charrette and its results. If they persist, or their particular position warrants it, the charrette choreographer should be consulted regarding next steps.

SUMMARY

The experience of the charrette event itself will depend on everything that went into planning ahead, and on the ability of the choreographer and support staff to work together to ensure participants have what they need to work effectively as a team. Overall, the charrette choreographer will assess problems, give guidance on how best to respond to them, and ensure that any problems that arise do not break team momentum. Support personnel will be key in ensuring resources are available and undertaking the legwork that may be needed to solve certain problems.

Participating in a charrette, whether as a designer, resource, support person or choreographer, may often feel like riding on white water. The process will appear chaotic and disorganized at times and some, particularly those new to charrettes, may become anxious about possible results or worried that it may all 'capsize.' Expect the charrette to be an interesting journey full of individual and collective learning; the teams will deliver a series of creative design ideas and they will probably hold some delightful surprises. Whatever you do, have faith and have fun!

POST-CHARRETTE
MANAGING & MAXIMIZING THE AFTERMATH

The time immediately following the charrette is usually marked by exhilaration, relief, and exhaustion. You will probably have less time to recover from the event than you might like (especially if you have been one of the lead organizers) as very quickly it will be time to begin another series of tasks. There will be lots of material to organize, review, summarize, study and evaluate; debriefing sessions, discussions with various parties, and possibly additional studies and analyses will need to be undertaken; informal reports, preliminary reports and final reports will need to be developed; and various kinds of presentations and evaluations will need to occur.

As stated earlier, charrettes are beginnings not ends. Charrette 'results' present potentialities and ideas for later reflection and elaboration. Many ideas will need to edited, reworked and refined by a variety of constituencies following the charrette. This chapter focuses on ways to maintain the momentum and interest in the charrette; ensure reports and presentations help secure the 'memory', learning and information from the charrette; obtain additional input into design and planning; and begin to plan for the evaluation and choice-making process.

IMMEDIATE AFTERMATH

Charrettes generate a significant amount of interest, energy and momentum. Many people not directly involved in the charrette will be eager to see and hear about charrette results as soon as possible. It is important to plan activities to build on the momentum from the charrette and ensure preliminary reports and presentations are completed in a timely manner. Teams or team representatives may have been given some time to 'polish' their drawings (two weeks maximum is recommended) so nothing very formal may be available for at least a couple of weeks. Nonetheless, if you have a good photographic record of the process and some critical 'products', these can be used to give an initial and informal 'look-see' into the charrette.

A website is a particularly good tool for reporting — especially during the interim before production of preliminary and final reports. Putting a few photos of people working together, and some of the teams' rough-fuzzy-in-process drawings on a website, along with information about when more formal presentations will be made, can help both whet and appease the appetites of those anxious to learn about the charrette as soon as possible. A quick update note to various stakeholders via email can also go a long way in maintaining relationships and interest in the sustainable community planning project. This is also a good time to send out appreciative thank-you letters to participants and others involved in hosting and funding the charrette.

> Hi!
>
> As you know, the charrette event ended on Friday and we don't expect to have anything formal to report for a couple of weeks yet. Still, I thought I'd just drop you a quick note to say the event was very productive and we are excited about seeing the final products. Take a look at the website to get some initial insight into the process and products. Next steps and ongoing status reports will be provided on the website as well.
>
> Sincerely. . .

PRELIMINARY REPORT

Although final reports need to be released as soon as possible, a preliminary report can usually be pulled together in a couple of weeks. Preparation of a preliminary report will trigger the organization of the most important information and initial visuals for early reference. It also provides an opportunity to capture knowledge gained through the experience that might not have been otherwise recorded or captured by physical results. Since polished drawings might still be some weeks away, and additional work will be needed to prepare the 'final' report, the preliminary report becomes a key summary document very useful for reporting back to stakeholders, decision-makers and others in the interim.

The ***suggested content for a preliminary report*** includes:

*A short description of the project and the process
* A short description of the site with a map
* A short description of the charrette event and its purpose or goals
* A description of who participated and how the teams were chosen
* The text of the "Design Brief"
* A description of each team's design: summary of basic facts and character
* A few key visuals from each team
* A summary of key themes and ideas that emerged from the charrette
* Concluding remarks outlining the success of the event, how the results will be used, and next steps in the project (e.g., type and timing of reports and presentations)

TEAM FOLLOW-UP

There are two key tasks for follow-up with charrette team members. First, it is important to ensure that all participants have invoiced the organizers/sponsoring agency and have been paid. Charrettes typically include several dozen invoices including those from participants, consultants, and suppliers of equipment, food, and venue. The effort to deal with invoices and unplanned expenses should not be underestimated.

The second task concerns the physical results of the charrette. Typically, drawings and written material are in a relatively disorganized or even incomplete condition at the end of a charrette. In some charrettes, time and funds are provided for teams to complete or 'polish' final drawings and written material after the charrette as part of their commitment. Another option is to pay one member from each charrette design team to take responsibility for polishing incomplete drawings and bringing them to a reasonable degree of presentation quality. The options are of course dependent on funds available; funds can be quite tight near the end of a charrette and decisions on how extensive final reports can be will likely be at least somewhat predicated on remaining funds. Regardless of how drawings are finished, charrette organizers need to ensure all drawings are completed and gathered for reporting purposes as soon after the charrette as possible.

ADDITIONAL COMMUNICATIONS & PRESENTATIONS

As noted earlier, it is important to communicate with stakeholders and other interested parties as soon a possible after a charrette. In addition to initial update notes and thank you letters, preliminary reports should to be sent to specific audiences and made more generally available as well. Be sure to include the charrette participant list and other contacts information; this will help to facilitate networking , one of the key benefits of a charrette. Other possibilities for presenting preliminary (and final) reports include open houses, interactive displays, and various other kinds of results presentations and discussion opportunities, and can be developed according to your particular needs and interests. Regardless of the choices in approach, there are some critical audiences that must be addressed as part of post-charrette activities.

Presentation to Key Decision-makers

Timely presentation of charrette results to key decision makers is critical. In the case of a private developer, the presentation will likely be made to corporate executives and senior development managers. In the case of a public sector-driven charrette, the audience will be City Council and senior city staff. Since the charrette is sure to have generated ideas outside current policy or standard practice, it will be important to manage expectations at the outset; this is usually best done by the lead organizers of the charrette. The technical and policy status of ideas and recommendations should be made clear (at least to the degree they are known) to ensure no one over-reacts to new, unconventional ideas, or mistakenly assumes that ideas have been accepted. Once again, it must be emphasized that the charrette results offer ideas for exploration. The objective of the first presentation is to showcase ideas, indicate their particular strengths and linkages to existing policies, as may be appropriate, and to identify particular ideas highlighted for additional exploration.

After this initial 'stage-setting,' it is good to have one member from each charrette team present their results. Some advance understanding of who among the team members is likely to already have credibility in the audience's mind will be very helpful in determining the most appropriate team spokesperson. A person who already has some degree of acceptance among the audience can informally lend credibility to ideas and results that push the margins of standard policy and practice. Further, team members will be most familiar with their own results and, by presenting them themselves, they both indicate personal ownership and protect organizers from being directly associated with proposals that may challenge conventions. The maintenance of some relative objectivity will be important to organizers and others who will be involved in further analysis and assessment of overall charrette results.

Once team presentations are complete, time should be provided for the audience to ask questions and make statements of their positions on ideas and issues that were raised. Aside from providing opportunities for clarifying and/or fleshing out ideas, statements by Councillors and others will be helpful in determining next steps in the evaluation and decision-making process.

Other Audiences

There are a number of other important audiences who need to be addressed directly as soon as possible after the charrette:

* *Those who paid for the charrette* need to see that their money was well spent and has brought about excellent results;

* *Those affected by the potential development*. Many who live in and around a development site that is the subject of a charrette, will be very interested and concerned about what is being recommended. They need to see the results as soon as possible so they do not respond to rumour or innuendo. They may feel insulted if the media or someone else who is not directly affected as they are, have full access to the results before they do. When presenting information to them it is vitally important to characterize the status of the results as ideas rather than absolutes and to provide opportunities for comment on the ideas/proposals.

* *Other key observers* — including those who may have wanted more direct involvement in the charrette than was possible — will want to see, and be involved in further discussion about, the charrette results and how they will be used.

* *The media*. If the charrette has been publicized at all, the media will be interested. They are used to having free run of anything they want to cover and can become suspicious and critical of anything where their participation is limited. The media are usually excluded from the charrette itself, but should be included immediately after, as soon as the results have been organized and some conclusions drawn.

Most people will be in general support of any project with a 'green' or sustainability agenda but it is to be expected that there will be differing opinions about what constitutes 'green' or sustainable designs and plans. In the absence of timely and effective post-charrette communication, people may begin to respond to rumour and gossip; they may compare what they have heard about designs, or levels of expertise of participants, and such, and inadvertently spread misinformation about the results or credibility of the teams and even the project as a whole. The circle of those in green design is still relatively small and negative talk about a charrette can have serious negative impacts if it is allowed to proceed unchecked. The best way to forestall a negative rumour mill is to ensure information is made available as soon as possible to the most appropriate and most interested parties at various stages of the process. Again, it is important to position the charrette as an idea and exploration tool for learning about and implementing sustainability, and to ensure people have several opportunities for providing feedback and otherwise becoming involved along the way.

'FINAL' REPORTING

Once all the team drawings and analyses are in hand, it is time to prepare the final report and this should be done as soon as possible. Ultimately, the quality of the final report will define the value many will place on the results of the charrette. High-end reports (colour, glossy, extensive) are usually deemed to offer more than those of the black-and-white photocopy variety but production of such reports is not always possible. In any case, they usually take far more time and resources than are often available and are usually reserved for later production — after initial final reports are released.

The ***final report*** should build on and extend the content of the preliminary report and should include:

* An introduction to the Project, the Planning Process (including next steps) and any policies used to guide the charrette
* Rationales for the Design charrette
* Information on the Design charrette
  - Goals and objectives
  - The Design Brief and other materials provided
  - Participants selection criteria, team configuration and structure
  - Day-by-day process descriptions
  - Summary and comparison of Design Team work (issues raised, lessons, recommendations)
* Conclusions
  - Cross team commonalities, critical elements, common themes
  - Differences which highlight different design options
  - Organizational learning (what would you do to make it better next time?)
  - Legacy and long term implications
* Individual Team Reports
  - Team process
  - Description of design (and all relevant visuals)
  - Discussion of technical issues
* Appendices (e.g., resources provided, public comment if a public charrette, etc.)

A preface written by a key stakeholder (e.g., Council member, Senior Planner, or developer) can also be useful — especially if there are a number of parallel design and planning processes occurring and/or if there have been any changes to site boundaries, targets or other requirements since the charrette. An update such as this not only helps to put the charrette results in context, but also informs others who may be working on their own reports. Charrette participants often share copyright for their work and ensuring everyone is working 'off the same page' so-to-speak will help facilitate the success of collective efforts.

Notification and Distribution

It is important to alert all participants and stakeholders when the final report is available. The mailing list established early on will be most useful here but other channels, such as newspapers, a variety of community and professional listserves, and a website, should also be used. Where at all financially feasible, copies of the report should be sent to each of the participants and key stakeholders. This can be a significant expense but goes a long way in maintaining and building relationships and furthering future design and planning work.

Access

Aside from access to the report(s) in general, expect to have many requests for visuals and analyses from the charrette. In particular, charrette participants will want to have visuals from their work for use in their own communications or to illustrate articles or reports they write regarding the charrette

and its innovations. Interest groups and others within the community may desire visuals and other products of the charrette for their own presentations and discussions. Others may be interested in obtaining charrette results and visuals as they plan charrettes in their own communities.

As previously noted, a ***website*** can become the hub for information on the charrette. Images and exhibits can be placed here for easy viewing and retrieval and the website itself can help build the profile of the charrette. If a digital camera was available during or after the charrette, generating digital images is relatively easy; otherwise, images can be scanned in (most graphics companies can scan images of different sizes). If there are a large number of visuals, files can be placed in an online database or burned to a CD. Whatever the process, it is important to let people know how they can most easily access the written and visual products of the charrette. Copyright and terms of use must also be made clear. If the latter is a significant concern, information can be placed directly on the image files to protect copyright.

Other Reports

If at all possible, endeavor to publish articles about the charrette and its impact. Even a short article can catch attention and further beneficial opportunities and exposure can result. The academic community, especially graduate students will likely welcome the opportunity and enlisting their help in this regard is a good idea. The interest generated will help sustain current and future co-creative efforts and do much for ongoing education about sustainability planning. The preliminary and final reports you prepare in advance will be key resources (and time savers) for the process and subsequent reports that build upon them will continue to build momentum for your work.

Example: San Antonio

AIA San Antonio retained an independent professional producer who assisted in documenting the events process and solutions for broadcast on KLRN-TV and other PBS affiliates. The content for this documentary will be created by the design charrette on the internet site and the resulting television show will publicly demonstrate the critical importance of sustainable design practices and the power of design.

View clip:
http://www.salsa.net/aiasa/impressions.ram

PREDICTABLE CHALLENGES

One of the biggest challenges post-charrette is in gathering information together for effective and timely reporting. If the charrette lasted four or five days, you are likely to have fairly complete drawings and other products and subsequent reporting and presentations can be pulled together quite quickly. If, however, time has been provided to charrette teams for polishing drawings (especially common in shorter, 3-4 day charrettes), there will be some built in lag time before presentations can begin. Nonetheless, much can be done to begin to assemble reports immediately after the charrette. In fact, a good deal of work can even be completed in advance of the charrette: such things as project description, charrette purpose and goals, and background visuals (site map) can all be assembled even before the charrette begins. This advance preparation will be very welcome during the flurry of activity that characterizes post-charrette work. Several other ideas in this chapter — establishing a project-related website and posting images and notes immediately after the charrette; sending quick update notes to various stakeholders; ensuring 'next steps' and timing of reports are publicized — will also help to ensure that people are not frustrated by any necessary or unpredicted delays in reporting charrette results.

Another predictable challenge concerns analysis and choice-making. Analysis of strategies used may not be complete nor will they likely be complete for some time. Many people will view results of the charrette in terms of their particular interests and may quickly move to judgements about which is 'better' in terms of their own particular interests and values. Two recommendations are relevant here. First, it is important to make clear what sources and assumptions were used to generate various statistical results (e.g., number of vehicles, waste management scenarios, energy performance). Second, it is again important to point out that the charrette results are *ideas for further exploration and discussion*, not endpoints in the process. Be sure to include a statement that defines the status of charrette results and next steps in the process.

Maximizing the Benefits

To the larger community:	*To the organizations involved*	*To the future of the project development process:*
Make information widely available on the value of the charrette and its results. Prepare and distribute reports, articles and updates via letters, emails, newsletters, news media and websites. Support endeavours of community groups and the academia who may want to pick up from the charrette and look at further design workshops to develop certain ideas around the site	Hold discussions with stakeholder groups on the results of the charrette to increase education and opportunity for learning - charrette drawings are great for triggering robust discussions as they contain a lot of information but do not appear to be too "final". Hold discussions with city departments to get their thoughts and comments, and to create an openness to new ideas. Emphasize the contributions of the members on the teams who will have the most credibility in the eyes of your audience. For instance, when presenting to the engineers, note that the engineers on the charrette teams did the calculations and have identified that this or that greener approach is possible and would have such and such benefits.	Bring information gleaned from the charrette to future development discussions on the project site and other projects where applicable. Take opportunities to refer to the results of the charrette in future reports and discussions on related issues to turn it into a touchstone of possibility. Ensure charrette writeups and reports are done in such a way as to be "applicable" to the future design discussions. Consider having a development professional advise during the summarizing of the results of charrette to ensure the final report hits the targets in this regard.

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EVALUATION AND CHOICE-MAKING

At some point after the charrette, discussion and emphasis will shift from what alternatives are desirable or possible, to which alternative or particular strategy works best. Discussion of the evaluation and selection stage of the process goes well beyond the scope of this book; in any case, final decisions and the means for achieving them will depend on each individual project and application context. Nonetheless, a few comments and suggestions related to evaluating options may be appropriate here. In some cases, they may be used to provide additional details in reports; in general, they may contribute to ongoing efforts to educate and involve a wider group of people in sustainable community planning.

Although charrette design teams will have the same performance guidelines and targets from which to work and many cross-team commonalities can be expected, teams will explore and generate different kinds of response scenarios. Exploration may include, for example, different strategies related to land utilization, energy efficiency and use of renewable energy, infrastructure layout, environmental impacts, affordability, and livability. Professional review and interpretation is typically required to determine anticipated performance particularly in view of the many factors that are likely in need of consideration. As part of the review work in determining which alternative(s) work best, it is important to detail various elements being considered along with assumptions used in calculations. This helps make performance estimates and comparisons transparent and allows for any future changes in assumptions and subsequent editing of results.

A more detailed performance-based review may include, for example:

Summary Inventory summarizes a scenario by land use element: networks, open space, housing, civic spaces, commercial, industrial. For example, an inventory of housing would summarize each housing type used, densities (gross and net), building coverage, total number of units/dwellings, total bedrooms, parking, total impervious surface, vegetated area, energy used, etc.

An energy assessment estimates energy used in buildings, transportation and industrial sectors. Measures may include total energy, total energy per acre, total energy per capita, total energy attributable to buildings, heating, cooling, lighting, transportation, and commercial/industrial processes.

An environmental assessment estimates environmental impacts (air, water, soil, microclimate) using such measures as water demand, air pollution mitigation (e.g., volume of vegetation and pollutants removed), storm water quantity and quality (e.g., permeable surface area, run-off volume, amount of pollutant filtration), heat island mitigation and habitat protection/creation.

Community objectives assessment estimates impacts on important community values such as affordability, economic opportunities (e.g., jobs on site, attractions), proximity of services, mobility, interactivity, in-place aging, pedestrian attractiveness, etc.

Cost assessments estimate economic impacts of construction and operation costs. Results may be summarized for various land use elements (open space, networks, housing, etc.) and for the site as a whole.

Certainly, the design brief itself can be used as the basis of a framework for a multiple accounts analysis. Including an evaluation section in the final report is useful to reinforce the idea of sustainability and livability objectives; reporting or otherwise describing how performance will be determined is particularly important. People will have gut reactions to drawings and the financial feasibility of options, and everyone will have their own set of values and criteria for selecting preferred options. Providing a more rigorous comparison of results based on specific objectives and performance criteria increases learning and understanding regarding options and final choices. The more detailed performance analyses will likely occur quite some time after the charrette is complete. Notwithstanding, providing information on intended analyses, performance assessments, criteria and measures, will generate ongoing interest, facilitate ongoing dialogue, and, potentially, garner more hands for conducting various kinds of assessments.

SUMMARY

The key message for post charrette is: "Get information about the charrette out to stakeholders and other interested parties as soon as possible." Whether by way of quick update notes or initial posts to a project-focussed website, being in touch with those who are anxious to hear about the charrette quickly is very important. This helps keep up the interest and momentum and forestalls frustration or grumbling about delays in reporting. Then, as soon as possible, complete preliminary reports and make presentations to key stakeholders. This will require at least some contact with teams — especially if they are polishing drawings — to obtain some key visuals for initial reporting. The final report should also be complete as quickly as possible and distributed to participants and key stakeholders. Ensuring that all participants, stakeholders and other interested parties have access to results, including various data sets and drawings, is also critical. Finally, it is likely that ongoing work related to performance analysis and assessment of various options will occur for some time after the charrette. How these will be undertaken and how they will be used at various stages of the planning and decision-making process must be very transparent. Every step in the planning, implementing and following up on a sustainable community design charrette is important. In the end, however, it is how you use the ideas and momentum generated by a charrette that will determine the long term benefits of your event.

FINAL WORDS

The goals of sustainability bring new and complex issues to community planning. The multitude of objectives to be addressed is expanded and appropriate synergistic solutions need to be found. Design charrettes are a powerful tool for bringing together a diversity of interests and disciplinary expertise to explore various options and to generate visualized ideas that themselves are useful communication and learning tools. Further, design charrettes encourage discussion beyond conventional thinking, enable the testing of policies and the feasibility of design solutions which embody multiple objectives and interests, and can inspire and catalyze community-wide cooperation and commitment.

Design charrettes do require a good deal of time and resource commitment. Rather than viewing them as add-on expenses, however, they should be seen as alternative means for achieving results and benefits of a kind that may offer far more than conventional planning approaches traditionally are able to provide.

Aside from the obvious benefits achieved from bringing a wider than usual range of experts together to examine and create solution alternatives, a particularly significant benefit of charrettes is the role they can play in involving the local community more directly in sustainable community learning and decision-making. Drawings generated in charrettes can be used to illustrate and explain ideas to various stakeholders and interested parties — a process which encourages more ideas and more inputs into consideration of alternatives. Decision-makers are able to make more informed choices based on the range of inputs and have a better 'read' on the various constituencies they represent. In addition, a sustainable community design charrette offers lessons to others who are seeking to create sustainable design solutions for their own communities.

The long term implications of ideas and recommendations resulting from a charrette are worth capturing both for both the local community and beyond. Certain recommendation may offer opportunities to transform decision-making in ways that result in more effective contributions to the development of sustainable communities. As community members become more interested, educated and involved in planning, one can expect sustainability initiatives to arise and be acted upon by the community members themselves. As other communities become interested in undertaking similar kinds of sustainability initiatives, the potential for even farther-reaching sustainability-supportive designs and plans which cross communities and regions can begin to be realized.

A Toronto group used Vancouver's SEFC framework document as the basis for a community workshop on the City's bid for the summer Olympics. SEFC documents were also consulted during the sustainability planning process for a 1200 acre development in

In sum, using design charrettes for sustainable community planning has a multitude of benefits, in both the short and long term, for both local and more distant decision-makers, designers, planners and other community members. In addition, and not to be minimized, design charrettes are fun! This should not be neglected. Yes, there is a lot of effort invested in a design charrette but the Fourth Law of sustainability should not be forgotten: If it is not fun, it is not sustainable! Do enjoy the process and results of your efforts!

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APPENDICES

APPENDIX A
GUIDES & CHECKLISTS

APPROVALS

Readiness Assessment 1: Allies and Resources

Are you in a position to initiate broader exploration of the charrette idea?
Do you know who your allies might be or where you might begin building support?
Is it likely that the organization and its members may be open to the idea?
Do have some confidence that resources are available or could be obtained?

** If your answers tend to be "yes" you're ready for the next step.*
** If you are uncertain, it's time to do some more homework and exploration; the following section may help.*
** If you answered "no" to one or more of the questions, it's time to do a bit more thinking and planning and/or to choose an activity other than a charrette (See p. 17)*

Readiness Assessment 2: Building Support

Have you identified allies and successfully garnered support for the charrette in concept?
Are key decision-makers and stakeholders on board?
Do have some confidence that resources are available or could be obtained?

** If you can answer "Yes!" to these questions, you're ready for the next step.*
** If you have the key decision-makers and at least some key stakeholders on board, and if you have some degree of confidence that resources can be found, you can probably get started on the next step; it might even help you confirm or acquire the additional support you need.*
** If you answered "no" to the decision-maker question and are weak in the other areas, you're not yet ready to go the next step. You might find the guidelines for the next step (getting approval, ref. p. 23) helpful in working towards positive answers to the questions above, but you should not be seeking approvals at this stage. You must be well-prepared before moving on to the more formal approval-seeking stage.*

Readiness Assessment 3: Getting Approvals

Have you completed your proposal and presented it to the appropriate decision-makers? Have you obtained approval to proceed?

** If you haven't yet completed or presented your proposal, well, it is time you did!*

** If you haven't yet obtained approval you may need to*
(a) find ways to respond to reasons for declining the proposal;
(b) find other organizations who may be interested in assuming the role;
(c) consider undertaking other similar, but less ambitious activities (ref p.17)

** If your answers are "Yes!" then it's time to start planning and preparing for the charrette. See "Pre-charrette planning" for more detail.*

TEAM MEMBER SELECTION

Exhibit 1
CHARRETTE TEAM MEMBERS & PROFILES

Selection Criteria:

* Understanding of the concept and principles of sustainable development; knowledge of implementation strategies and approaches; awareness of issues arising out of implementation attempts

* Strong communication skills including interpersonal and group process skills

* Specialized knowledge and experience (see next section).

NB: At least some of the team members are expected to have 'good hands,' i.e., well-developed skills in giving visual form to ideas

Design Team Profile: Each team will include the following:

Architects (2): One experienced in large scale urban development projects generally of the more conventional/traditional form; one 'green' architect
Landscape Architects (2): Same profile as above
Engineer (1)
Economist/Developer (1)
Planner/regulator (1)
Student support/assistants (4)
Other Environmental planners, biologists, botanists, and others may be important if particular kinds of issues, such as stream protection, need to be addressed.

BRIEFING PACKAGE

The *Briefing Package* is a key document for charrette participants and should include the following:

- Charrette Agenda
- An outline of participant roles and responsibilities
- A list of team members by role and team
- Introduction to the charrette participants by way of short bios describing organizational affiliation, education and work experience.
- The Design Brief and a 'cheat sheet' that includes performance thresholds and design objectives for each of the issue categories on a single reference sheet
- Expected deliverables including specific drawings required (e.g., master plan, a street section, street level perspective, analytical diagrams showing site systems and function)
- Supplementary materials such as copies of vision statements, relevant policies, special site-related reports (e.g., targets, benchmarks, design paradigms, particular challenges) or other relevant research reports (e.g., high density housing, environmental issues, site history)

SUPPLIES & EQUIPMENT CHECKLIST

Onsite Supplies & Equipment
(For ~40 participants)

Supplies

(75) Name tags (for participants and visitors)
(100) Felt markers in many colors. Get 3 sizes: fat ones, sharpies, and ball-point equivalents
(100) Pens: black, blue, red
(50) Pencils
(40) Erasers
(10) Several rolls of masking tape and transparent tape
(3+) Site maps mounted on board to use as underlays for team drawings
Several rolls of trace paper (one rule of thumb: 1 roll/2 people)
(18) 12" width
(18) 16-18" width
(18) 24-36" width

We want tons and tons of trace. Spend money on that. We want the place flooded with trace. Up to their knees!

(35) Vellum sheets (24x36" or size expected for site plans)
(18) Mylar sheets (24x36")
(10) Scissors, exacto knives
(12) Sheets of foam core for model building (some teams do create 3D models)
(6) Flip charts and flip chart paper (2/team)
(10) Packages of post-its in two or three sizes
(3) Boxes of paper clips
(3) Staplers (1/team)

Equipment

(1) Photocopier
(3+) Extension cords
(1) Digital or other camera (digitalized images are useful; otherwise images will need to be scanned)
Additional lighting (e.g., spotlights for presentations) may be required
(1) Public address system may be needed

Miscellaneous

Having a bottle of aspirin, an antacid and some bandaids on hand has proven helpful on a number of occasions.

Optional

— Computer and printer with basic word processing software and drawing program (CAD not necessary). Team members can also be encouraged to bring their own laptops to track their work and prepare deliverables. Be sure there are sufficient power outlets.
— Video camera and/or playback equipment
— Slide projector (may be needed for advance presentations)
— Image projector (relatively inexpensive and can easily project flat images on to walls for cross-team reports during charrette and for final presentations)

(Refer p. 48 for information on support materials)

PRE-CHARRETTE READINESS

Readiness Assessment

Use the following checklist to determine your readiness. To help ensure the smooth running and useful results of the charrette, make sure you have not missed anything below.

— Resource contributors all confirmed
— Meetings with experts and specialist resources undertaken to gather important background information, help hone the charrette vision and objectives, and inform the Design Brief
— Meetings with interest groups, local community members and general public to ensure concerns and interests are addressed during the charrette
— Relevant parties and sponsoring authorities regularly updated with status reports and support/approvals obtained
— Site tours arranged and conducted for interested parties and participants
— Charrette design consultant and facilitator confirmed
— Design Brief prepared and finalized
— Teams constructed and participants confirmed
— Briefing package prepared (including all elements as described above) and delivered to participants at least one week in advance of the charrette
— Venue-related arrangements confirmed (space, food, physical arrangements)
— Travel and accommodation for outside participants confirmed
— Supplies and support materials prepared and ready for use at site
— Equipment (photocopiers, cameras, cell phone, etc.) arrange and ready
— Venue layout completed, equipment, supplies and materials appropriately arranged and checked several hours before participant arrival
— Contracts ready for signing by participants
— Post-charrette plans for initial charrette results presentations (to whom, when and where) developed and relevant parties informed

CHARRETTE OPENING: PHYSICAL ARRANGEMENTS

* Direction signs in the lobby and/or on venue event boards to guide participants to the venue space.
* A welcome sign at the entrance to the space along with any first directions for arriving participants (a flip chart and stand works well for this)
* A table near the entrance where participants will sign in and receive any additional materials (you will, of course, have already sent a briefing package out to participants).
* A refreshments table (remember that this should be appealing)
* Various visual displays on walls or panels
* Chairs arranged in a circle for opening discussion
* Any address system, visual display and recording equipment arranged and checked.

REPORTING

The ***suggested content for a preliminary report*** includes:

*A short description of the project and the process
* A short description of the site with a map
* A short description of the charrette event and its purpose or goals
* A description of who participated and how the teams were chosen
* The text of the "Design Brief"
* A description of each team's design: summary of basic facts and character
* A few key visuals from each team
* A summary of key themes and ideas that emerged from the charrette
* Concluding remarks outlining the success of the event, how the results will be used, and next steps in the project (e.g., type and timing of reports and presentations)

The ***final report*** should build on and extend the content of the preliminary report and should include:

* An introduction to the Project, the Planning Process (including next steps) and any policies used to guide the charrette
* Rationales for the Design charrette
* Information on the Design charrette
  - Goals and objectives
  - The Design Brief and other materials provided
  - Participants selection criteria, team configuration and structure
  - Day-by-day process descriptions
  - Summary and comparison of Design Team work (issues raised, lessons, recommendations)
* Conclusions
  - Cross team commonalities, critical elements, common themes
  - Differences which highlight different design options
  - Organizational learning (what would you do to make it better next time?)
  - Legacy and long term implications
* Individual Team Reports
  - Team process
  - Description of design (and all relevant visuals)
  - Discussion of technical issues
* Appendices

APPENDIX B
SAMPLE DESIGN BRIEF and CHEAT SHEETS

SOUTHEAST FALSE CREEK CHARRETTE

Design Brief

City of Vancouver
October 1998

OVERVIEW

Impetus for Change

On October 26, 1995, Vancouver City Council voted to remove an 80-acre waterfront site from industrial use (approximately 50 acres of this site is City-owned). The council then asked the planning department to explore the development potential of the Southeast False Creek (SEFC) parcel and to meet a higher standard of environmental sustainability and energy efficiency there than at other approved development areas. The goal was to have SEFC become a model for sustainable development both in our city and beyond. In this context council identified seven priorities for SEFC:

- Housing should be the predominant from of land use.
- Housing for families should be a priority.
- Energy-efficient community design should be incorporated into the community plan.
- The potential for utilizing City lands as models for sustainable development should be explored.
- A transportation corridor capable of facilitating a streetcar line should be incorporated.
- Housing and employment should be brought closer together.
- Housing should be increased adjacent to Vancouver's central area.[1]

Reports and Studies: *The Creekside Landing Plan*

"Following the completion of a public proposal call and selection process by the City, on June 11, 1996 City Council appointed Stanley Kwok Consultants Inc. as Development Consultant for the Southeast Shore of False Creek. Kwok Consultants was to report directly to the Property Endowment Fund Steering Committee,"[2] its first task being to produce a detailed development study. The purpose of the development study was to identify "economically viable options for the City owned lands at the Southeast Shore of False Creek, taking into consideration all pertinent City objectives and policies."[3] This study, entitled *Creekside Landing on South False Creek*,[4] was submitted to the Property Endowment Fund Steering Committee on January 2, 1997. On May 8, 1997, council

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[1] Sheltair Group Inc. *Visions Tools and Targets: Environmentally Sustainable Development Guidelines for Southeast False Creek* (Vancouver: Sheltair Group Inc. 1998).
[2] Stanley Kwok Consultants Inc. *Creekside Landing on Southeast False Creek* (Vancouver: Stanley Kwok Consultants Inc. 1997). (hereafter referred to as *CL*).
[3] CL, 4.
[4] CL, cover letter.

received this report and approved several of its recommendations, including the following:

1. The planning process should proceed with a special emphasis on sustainability.
2. While City policies, guidelines, standards, and bylaws should be the starting point for planning SEFC, council will consider variances of the rules in exchange for compelling community benefits within an environmentally sustainable and economically viable framework.[5]

The *Visions, Tools, and Targets* Plan

In response to the above recommendations, the Central Area Planning Branch of the Vancouver Planning Department prepared terms of reference for a more detailed study of sustainable principles and practices.[6] This study would:

1. Provide council, staff, consultants, and the community with a clear definition of sustainable development.
2. Establish performance targets to guide the planning and development processes.
3. Establish a data bank of relevant precedents regarding the parameters of sustainability.
4. Provide a framework for full-cost accounting as a basis of redeveloping economic information regarding development scenarios.[7]

Sheltair Scientific Limited of Vancouver was retained for this study, and its study, *Visions, Tools, and Targets: Environmentally Sustainable Development Guidelines for Southeast False Creek* (hereafter referred to as *VTT*) was tabled on April 18, 1998. This study identified a score of different, measurable sustainability performance targets that the City should attempt to meet at SEFC. A summary of this lengthy study by Central Area Planning Branch staff can be found in *Urban Sustainable Development: Southeast False Creek* (hereafter referred to as *USD*).[8] The *USD* report, while not intended to be formally adopted as official city policy, informs and is in large part incorporated into the Southeast False Creek Sustainable Neighbourhood Policy Statement discussed below.

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[5] *VTT*, 4.

[6] Ibid.

[7] City of Vancouver Planning Department, *Terms of Reference for Sustainable Development Consultancy* (Vancouver: City of Vancouver Planning Department 1997), 2.

[8] City of Vancouver Planning Department, Urban Sustainable Development; Southeast False Creek, 1998.

The Southeast False Creek Sustainable Neighbourhood Policy Statement

The Central Area Planning Branch also produced *Southeast False Creek Sustainable Neighbourhood: A Policy Statement to Guide Development* (hereafter referred to as *PS*).[9] Policy statements of this kind typically describe general planning principles intended to guide future site development. The *PS* is exceptional in that it attempts to blend a host of new environmental, social, and economic sustainability principles with more conventionally applied planning guidelines vis-à-vis density, open space, parking, and land use. Given the unprecedented nature of this attempt, the *PS* is also intended to be a flexible document. In the spirit of experimentation, it must allow for many different design responses and be capable of adapting to new circumstances and unforeseen opportunities.

[9] City of Vancouver Planning Department. *Southeast False Creek Sustainable Neighbourhood: A Policy Statement to Guide Development* (Vancouver: City of Vancouver Planning Department, 19 June 1998). (henceforth referred to as *PS*).

THIS DESIGN CHARRETTE

Following from the council's directive to create a more sustainable community, the *VTT*'s performance targets, and the *PS*'s broad range of conventional best practice objectives and sustainability-based principles, the City is now moving to implement redevelopment policies for SEFC. This charrette is a crucial part of the implementation process. We are asking the participants to render the possible concrete consequences of these policies visible in urban design proposals and, thus, to show what a more sustainable community could look like on this site. The results of this charrette will be used as a guide for Vancouver's elected and appointed officials in determining the future form of this community. These results will also be valuable to many communities across North America, as the SEFC initiative represents the first time a North American city has used sustainability principles to guide a project of this magnitude. With no North American precidents to guide them, the city hopes that this charrette will help determine which, if any, of the performance objectives for SEFC are set to high, and which, if any, of the performance objectives for SEFC are set too low.

Design Brief

We have worked primarily from the two key documents that pertain to the SEFC development in the development of this design brief: the *PS* and the *USD*. The performance targets and requirements that appear in those documents also appear in the brief. Consequently, the design solutions that meet the objectives and requirements of this brief will not merely represent the personal visions of team members, but will also demonstrate the charette teams interpretation of the Draft Policy Statements to Council, staff, the larger community, and, importantly, the development consultant and architecture / planning consultant hired to develop the plan for the City's land holdings at SEFC.

The Goal of This Charrette

The goal of this charrette is to provide Council, staff, consultants and the larger community with different design options for the site; each of which represents a clear vision of what a community built in conformance with the proposed policies would be like.

Objectives of This Charrette:

1. To test the efficacy of those aspects of the proposed policy statement and the performance targets that would be manifest in urban design before an attempt is made to apply them.
2. To create a setting in which leading British Columbia designers can exchange

ideas and viewpoints with outside experts in the field of sustainable design.

3. To establish new, more sustainable, urban typologies in order to guide the planning and design of this site. These typologies would then be used as prototypes for other sites.
4. To illuminate the connection between sustainability and liveability.
5. To make the sustainability functions of the site both transparent and didactic so that SEFC can serve its residents as well as educate the world.

INSTRUCTIONS TO DESIGN TEAMS

The design brief that follows is broken into four sections:

I. *Land and Water*, which covers issues associated with the ecological health of the site, including the water that it contains and the water by which it is surrounded.
II. *The Built Environment*, which covers issues relating to the buildings and landscapes that will be added to the site.
III. *Building Design and Performance*, which covers issues relating to more sustainable building construction.
IV. *Cycles of Growth and Decay*, which covers physical and social issues relating to material flows both onto and off of the site.

I. Land and Water

The City of Vancouver is committed to reducing its part in the degradation of the land and water of our region and, on a case by case basis, to remediating the degradation produced by insensitive earlier development. This commitment is intrinsic to the Southeast False Creek Sustainable Neighbourhood initiative itself. The specific elements of this broad objective include four performance areas:

1. The Freshwater System

Clean In-Clean Out. Rainwater falling on the site should either be absorbed in the soil, gardens, and built structures of the site, or it should leave the site as clean as it was before it fell. At least 50 per cent of the site should be pervious (e.g., a rooftop garden is a pervious surface).[10]

Visible Systems. Ecological systems that are hidden are difficult to respect and cherish. Rainwater channelled across a site dramatically reveals the workings of the rain/stormwater system. The City is interested in implementing a completely surface system for managing storm runoff.[11] The process of moving, cleaning, and infiltrating rainwater should be revealed, celebrated, and explained as part of the design.[12]

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[10] City of Vancouver Planning Department. *Urban Sustainable Development: Southeast False Creek* (Vancouver: City of Vancouver Planning Department), 24 (hereafter referred to as *USD*); *PS*, 41.

[11] *PS*, 42; *USD*, 28.

[12] *USD*, 29; *PS*, 42 and 49.

2. Open Spaces

Working Green. Green spaces, in addition to satisfying demonstrated recreational needs for area residents, should be working spaces that clean water, provide habitat, and improve soil by absorbing green waste.[13] Approximately 60 per cent of open space should have habitat value.[14]

Ecological Infrastructure. It is important to establish methods for ensuring that roads, plazas, and other open spaces contribute to ecological and cultural sustainability goals. For example, they should clean water, provide habitat, and accommodate pedestrians: and they should do all this cheaply, simply, and intelligently.[15]

From "Open" Space to "Sustaining" Space. The City is proposing to apply the standard of 2.75 acres of open space per 1,000 resident population.[16] In the past, only traditional park spaces -- spaces offering mowed lawns, ornamental plantings, and passive and active recreation areas -- have been included in this total. This has excluded interior courts, rooftop spaces, multi-use streets, and shoreline walks. Adhering to the 2.75-acre standard makes it difficult to meet overall site density goals.

For the purpose of this charrette, participants are asked to think more broadly about the public objectives that underlie this standard and to make a case for meeting this public policy goal as they see fit. The City has already made some concessions. For example, the community centre will be located within the "open space," and whatever area it occupies will be counted in that total. In some open space areas there exists the possibility of combining functions. For example, bio-remediation marshes could be located as part of park space and count in the 2.75-acre total. Although care must be taken not to exclude traditional active recreation areas, the City does not see a need for a full-sized baseball facility. So the four acres of open lawn that would have been used for such a facility can now be used for urban squares, green streets that incorporate "park-like" activities, bio-remediation features, and tidal marsh areas -- to name but a few of many possibilities.

This charrette provides a chance to reassess the real public purpose of our urban green spaces and to put forth ideas and proposals for change. And its participants are strongly encouraged to do just that.

Its for the Birds. Habitat for at least thirty bird species can and should be provided on the site. This number is approximately that which can presently be found on or near False

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[13] *PS*, 13.
[14] *USD*, 27.
[15] *USD*, 28.
[16] *PS*, 12.

Creek.[17] Sixty per cent of the open space at SEFC should have significant habitat value,[18] while 40 per cent of the foreshore length should have significant habitat value.[19]

Restore the Living Edge. Eighty per cent of the foreshore length should have habitat value.[20] Shoreline alignment can be changed to increase habitat diversity and to re-establish coastal marsh habitat.[21]

3. The Soil

The Problem. Most of the site was previously marshland or open water. As only structural reasons were considered, solid fill was used to build up the site. This meant that no regard was given to soil hydrology, fertility, or soil toxins. Portions of the western half of the site contain "special waste" soils; that is, soils that are dangerous enough to require special handling and that should not come into long-term contact with humans.

A Sustainable Community on Bad Earth? A sustainable community is one in which the natural processes of rain, infiltration, growth, decay, and regeneration are respected and worked with. Once disturbed, these natural cycles are difficult to re-establish. This is true even under the best of circumstances; on a contaminated site, the problem is that much more complex. The city anticipates spending $25 million on a combination of measures that will likely include capping certain areas with an impermeable seal and removing particularly polluted soils in other locations. This strategy, while not intended to clean the soils, would remediate soils up to an acceptably safe level.

Certain questions are unavoidable and should be addressed by the charrette teams. For example, is there a contradiction between the idea of rainwater infiltration, which, in principle, is a good method for cleaning water and regulating soil and stream hydrology, and sending relatively fresh water into toxic soils? Is there a contradiction between encouraging species diversity on the site while there is a possibility that heavy metals might move up the food chain from soil, to tree, to bird?

Creative Ways to Restore the Earth. Can we imagine some kind of environmental infrastructure that could heal the site and stay within (or below) the $25-million range? Would this healing occur right away or require time for nature to do her work? These issues pertain not just to this site but to hundreds of others throughout North America. Nearly every major city is slowly converting former industrial lands for residential and

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[17] *USD*, 26.
[18] *USD*, 28.
[19] Ibid.
[20] Ibid
[21] *PS*, 15.

commercial use. Creative solutions are desperately needed -- solutions that attend not only to the risks involved, but also to the need, through the application of natural processes, to heal past insults to the environment. Design teams are strongly encouraged to produce design ideas that could, if implemented, heal the site, provide recreation and habitat, and save money all at the same time.

II. The Built Environment

The goal of City of Vancouver public policy is to provide adequate, affordable, and appropriate housing for all citizens. A sustainable site and community design must integrate, not segregate, land uses, income groups, and family types. Services, jobs, and transit must be located near homes. Charrette participants are challenged to integrate office, workshop, and various residential types, recognizing that integration and heterogeneity are more sustainable principles for city building than are segregation and homogeneity.

Ways of moving people and materials around the site, as well as on and off it, should also be integrated and heterogeneous. The necessity for material and people flows both into and out of the site should be reduced. Waste, energy use, and an unreasonable dependence on cars would be modified downwards as a result of such a reduction.

1. Residential Life

Residential Land-Use Efficiency. Locating a dense residential area close to the job centre of downtown Vancouver will reduce sprawl in the suburbs and the consequent waste of land and energy.[22] The City is proposing to allow roughly 3.2 million square feet of new construction on City-owned land, about 3 million of which will be residential and roughly 200,000 of which will be commercial, "workshop," or service office use.[23] Assuming an average unit size of 1,000 square feet and an average family size per dwelling of 1.75 persons, there will be 5,250 residents on the City-owned portion of the site. Since there are forty-three acres of City-owned land on the site,[24] the gross "Floor Surface Ratio" (gross FSR; i.e., the ratio of interior floor space on all floors to the total site area, which in this instance, includes roads and parks) is approximately 1:6.[25] The net FSR (i.e., the ratio of interior floor space to the site area *exclusive* of roads and parks) will be approximately 3.

Parking Standards. No urban design brief would be complete without a section on parking standards. The irony of establishing parking standards for a project in which the ideal would certainly be to eliminate cars is not lost on the charrette organizers. The City is planning to lower, but not to eliminate, the parking standard in SEFC and, thus, it is hoped, to reduce the importance of cars to the SEFC community. The City, recognizing the many advantages of keeping parking standards to a minimum, has been gradually reducing standards in central-area developments so that, for the purposes of this charrette,

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[22] *USD*, 34.
[23] *PS*, 29.
[24] *CL*, 14.
[25] *CL*, 33.

the standard is one car space, on average, per dwelling unit (this is less than half the typical suburban standard). However, in some areas this standard might be even lower (which means that in others it might be higher). Additionally, street spaces can be used to meet this standard. In this way, traditional patterns of relatively high-density "town house" development (as in certain Toronto districts), where parking occurs in streets and, to a lesser extent, in lanes, would be allowable.

Housing For All. City policy calls for accommodating a diverse mix of incomes and family types, and for providing housing appropriate to all of life's stages. The mechanisms for achieving this are not spelled out. Certain crucial aspects of this principle have more to do with whose name is on the deed -- with ownership and management -- than with the visible design of a structure. Clearly, the charrette designs can only touch on the physical aspects of this principle.

Homes for All Incomes. At least 20 per cent of the housing units should be for persons whose family incomes are in the bottom one-third.[26] Overall, a minimum of 35 per cent of the units should be suitable for households with children. Also, it is important to consider the relative advantages and disadvantages of dispersing or, conversely, concentrating family units on the site.[27]

Homes for Different Lives and Life Stages. There should be a balance of housing types that meet the needs of a range of ages and lifestyles and that are affordable to groups and individuals having a wide range of incomes. Housing should be able to accommodate different sections of the population and should be flexible enough to accommodate each stage of a person's life.[28]

Homes for Those Who May or May Not Stay. Renters, no matter how long they intend to stay, should feel as "at home" in this community as do those who have invested in it financially.[29]

2. Commercial Life

Commercial Services within Easy Reach. All residential units should be located within 350 metres (a three-to-four-minute walk) of basic shopping needs and personal services.[30]

Integrated Commercial Life. Residential and retail land uses should be integrated

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[26] *PS*, 20. These units will likely be subsidized rental units managed by a non-profit housing agency. Units will be leased from building owners on a forty-year lease.
[27] *PS*, 20.
[28] *USD*, 35.
[29] *PS*, 20.
[30] *USD*, 12.

whenever and wherever appropriate.[31] Combined workshop/retail and residential units should be considered for mixed-use buildings.

Serve the City. Commercial activities should be located so as to invigorate the district and to both serve and welcome the surrounding district.[32] While not intended as a fixed requirement, providing one foot of commercial space for each fifteen feet of residential space provides a reasonable point of departure.[33] Design teams are encouraged to discover and put forth a rationale for either more or less commercial space than this amount.

3. Productive and Creative Life: Offices

Services for Residents. These should include frequently used neighbourhood offices in mixed-use buildings within close proximity to all residents.[34] While not intended as a fixed requirement, providing one foot of service space for each twenty-five feet of residential space (i.e. 120,000 square feet of office space --this amount of space would provide jobs for 350 persons)[35] provides a reasonable point of departure. Design teams are encouraged to discover and put forth a rationale for either more or less neighbourhood office space than this amount, in either dedicated office space or in combination live work/space.

Services for the Region. Currently, there is a surplus of general office space in the areas of the downtown core, Main Street, and Broadway corridor.[36] The desirability of creating complete mixed-use communities notwithstanding, the provision of additional general office capacity that is not specifically linked to neighbourhood needs should be approached with caution.

4. Productive and Creative Life: Industry

Jobs in Industry. The City is considering a job creation target for SEFC of one job per household.[37] This does not mean that one member of each household on the site should necessarily work there, only that there should be a balance struck between SEFC households and SEFC jobs. Assuming an average unit size of 1,000 square feet, we can expect 3,000 households on the City-owned portion of the site. A large number of the required job sites will be located on the blocks between First and Second Avenues. This

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[31] *PS*, 22.
[32] *PS*, 21.
[33] *PS*, 29.
[34] *PS*, 23.
[35] City documents do not specify a square-foot guideline for SEFC. This figure is adapted from Urban Development Institute standards.
[36] *PS*, 23.
[37] *PS*, 51.

area is outside of the charrette boundaries but is part of the larger SEFC planning area. Consequently, we ask charrette participants to begin their deliberations by assuming that the City-owned lands may provide job sites for about 1,000 persons. These jobs would be divided in some way between office, commercial, or industrial occupations, with the remainder in live/work situations capitalizing on opportunities to provide flexible space at grade.

Is it "Industry" or "Workshops"? The City would like to know what industrial uses will support urban vitality in the urban centre of SEFC. The *PS* recognizes that the distinction between office, commercial, and many kinds of industrial, or workshop, activities is gradually eroding.[38] For example, an artist's "live/work" space combines residential, commercial, and industrial activities in one dwelling.[39] This use has successfully enriched many neighbourhoods without provoking significant abutter complaint. With this in mind, and for the purposes of this design charrette, we ask participants to consider the possible benefits of providing various types of small-scale industrial, or what might be more accurately called workshop, space.[40] Since the design teams will be suggesting where such a centre (or centres) should be located, they should be able to add industrial/workshop uses to the new centre. It may be possible to justify the inclusion of "industrial" in SEFC in a way that has not heretofor been considered (each additional 100,000 square feet of industrial/studio/workshop space provided, it would accomodate 300 new jobs on average).

Bringing Industry Home? These industrial/workshop functions may be housed in mixed commercial/residential buildings, if appropriate.

5. Community Living and Community Facilities

Community Facilities Requirements. The SEFC site will be the social centre for its residents as well as for the residents of the adjacent community. Residents of the adjacent community are presently under-served with regard to schools, parks, daycare centres, and community centres. Current proposals call for the inclusion of a 35,000-square-foot school, a 25,000-square-foot community centre with appropriate outdoor activity areas, and 8,000 square feet to accommodate 180 daycare spaces.[41] Daycare spaces should be in four or more different locations, and some portion of the total may be

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[38] *PS*, 25.

[39] Ibid.

[40] Granville Island provides good working examples of small-scale manufacturing (e.g., kayaks) mixing with boat repair, hotels, community markets, glass blowers, and, in what might be North America's most extreme example of truly mixed use, a concrete plant that regularly dispatches fully loaded concrete trucks through hordes of tourists.

[41] *CL*, 35.

provided in home-care daycare settings.[42] The school and community centre may be in a separate building or buildings but may also be part of mixed-use buildings, provided they have direct access to both active and passive recreation spaces.[43]

Can There be Community Life without Community Facilities? Proposed City policy, as expressed in both the *USD* and the *PS*, places special emphasis on accommodating community-building activities, spaces, and facilities at SEFC. The SEFC community should: provide spaces for many kinds of special cultural activities,[44] create spaces that facilitate but do not force social interaction between residents,[45] create streets whose most important function is to provide a place for people to interact,[46] provide an urban structure that will enable residents to identify their neighbourhood as "home" and its centre as the "heart" of their collective social life,[47] visibly demonstrate sustainable principles in as many buildings and spaces as possible,[48] re-use heritage buildings and employ various means to explain the heritage of the site,[49] integrate public art and artists at initial and all later stages of development,[50] and provide ample opportunities for residents to meaningfully participate in the stewardship of their neighbourhood.[51]

6. Getting Around

Streets for Everything, but Mostly for People. The impact of the car should be kept to a minimum.[52] Other modes of transportation should be given priority over cars in order to encourage residents to shift from auto dependence to walking, cycling, or transit.[53]

Streets Where People Go and Cars Slow. Streets should carry cars safely, but slowly.[54] Wide streets encourage speed; narrow streets with ample "side friction" do not. Granville Island provides good examples of curbless streets where people and cars share space with little conflict. Non-through streets are particularly amenable to strategies that encourage both pedestrians and cars. Team members should feel free to suggest both precedented and original ideas for streets as well as for either combining or separating walking,

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[42] The City has begun the process of licensing home-care daycare centres.
[43] *PS*, 28.
[44] *USD*, 38.
[45] *USD*, 36.
[46] Ibid.
[47] Ibid.
[48] *USD*, 39; *PS*, 28.
[49] Ibid.
[50] Ibid.
[51] *USD*, 36.
[52] *PS*, 8; *USD*, 12.
[53] *USD*, 22; *PS*, 9.
[54] *PS*, 9.

cycling, trolley, other modes of transit, and cars.[55]

Ease of Access to Public Transit. Locate residences within a three-to-four-minute walk (350 metres) of regular transit service.[56]

Extend the Grid of the City. Connect SEFC and Fairview by extending all, or most, of Yukon, Alberta, Columbia, Manitoba, Ontario, and Quebec Streets into the site.[57] These connections, while not primarily intended to serve the transportation needs of cars, may do so; however, they will definitely extend the public space corridors to False Creek, allow cyclists and pedestrians to see as well as to reach it from further south, preserve views, and allow SEFC residents to easily walk or bike to the Broadway corridor.[58]

Create a "High Street." First Avenue may become a commercial spine for the district. Suggest ways to create a pedestrian-oriented local service and commercial street.[59] Circumstances may allow this local service and commercial street to occur north of First Avenue, presumably on one of the north-south streets entering the site or on an urban square.

Locate a Streetcar Line. A City-owned streetcar line will eventually link the site to SkyTrain, downtown, Granville Island, and other parts of the south shore of False Creek.[60] While the entry and exit points of this streetcar line are probably fixed, the alignment inside the site is not. Use this line as an element of your urban design.

Streets As Ecological Infrastructure. In the past, streets have been designed primarily for one purpose: moving cars. At best they have been designed for two purposes: moving cars and pedestrians. Thinking sustainably forces us to maximize the utility of, and to integrate, all systems -- street infrastructure in particular. In addition to moving cars, sustainable streets accommodate pedestrians, transit, bikes, and goods. Sustainable streets also provide social space for informal interaction and larger gatherings, thus blurring the distinction between streets and parks. Finally, sustainable streets are elements of green infrastructure, moving and cleaning water while providing shade and habitat. And they do all this by costing less, not more, than do standard streets to install and maintain. Designers are encouraged to think of the roughly 20 per cent of the site devoted to these kinds of more sustainable "streets.

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[55] Ibid.
[56] *USD*, 14.
[57] *PS*, 9.
[58] *USD*, 15.
[59] *PS*, 9.
[60] *PS*, 8.

7. Safety and Control

Eyes on the Street. Design public spaces to encourage their being observed by nearby residents.[61]

Active Urban Streets. Promote the use of public streets for legitimate social, commercial, and recreational activity and so reduce the tendency for public areas to attract illegitimate activity.[62]

8. The Public Green

Integration of Landscape and Cityscape. Richly layering green into buildings, streets, and infrastructure as well as into more sustainable parks increases habitat, reduces energy costs, cleans water, and produces food for residents.[63]

Equal Access to the Shore. Open access to the shoreline is a distinctive principal of Vancouver's recent and historic urban development. The equity aspects of sustainability make this principle particularly applicable at SEFC. Link all parts of the site and neighbourhoods to the east, west, and south of the site to the shore.[64] The average width of the creekside walkway/bikeway should be 60 feet. What happens in this 60 feet varies, but it often takes the form of a 35-foot-wide travel-way and a 25-foot-wide buffer strip.[65] Commercial functions (such as outdoor eating) may intrude into this 25-foot-wide space. Variations and interruptions for ecological, cultural, or special commercial reasons are encouraged.[66] The shoreline should be designed with a variety of edge conditions that are accessible to all, and it should include a ferry stop.[67] No marina or powerboats of any kind, except water ferries, are anticipated for this site.[68]

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[61] *USD*, 36.
[62] Ibid.
[63] *USD*, 22, 37, 27, 28, 22; *PS*, 32, 42.
[64] *PS*, 7.
[65] Ibid.
[66] *PS*, 15.
[67] Ibid.
[68] *USD*, 30.

III. BUILDING DESIGN AND ENVIRONMENTAL PERFORMANCE

The goal of City of Vancouver public policy is to reduce the environmental impacts attributable to its buildings. A more sustainable community must include buildings that work with, not against, nature's cycles. Resource streams into the building area should be substantially reduced. Discharges, in the form of waste heat, waste materials, and wastewater, should also be dramatically reduced. Charrette participants are challenged to consider the effects of reducing environmental inputs and outputs on building form and, consequently, on urban form.

1. Are There Especially Sustainable Building Types?

Are there particular building types that best respond to the myriad social, economic, and environmental goals of sustainability theory?[69] Does the special and overarching policy objective of SEFC (i.e., that it be "sustainable") provide a reason for moving away from what has become the conventional Vancouver urban response -- the twenty- to thirty-storey tower block on a wider and longer four-storey "pedestrian-and-street-scale" base? Could lower profile buildings with large roof gardens provide the same land use efficiencies and better meet the social and environmental objectives of the project? Or do environmental, economic, and aesthetic arguments still make the "Vancouver Point Tower" the most sustainable building type for our special region? Or is the combined option used in many new developments the best choice, where the occaisional high rise structure rises from the pedestal provided by the more extensive low rise structures. Design teams are challenged to address this question in the full knowledge that this charrette provides a never-to-be-repeated opportunity to speculate on this question and to influence future City policy on this important matter.

2. Is There Such a Thing As a Building Site that is Too Big? Too Small?

The City would like to see a finer grain development for SEFC than is found in other recent projects. What is the ideal building site size, or range of individual building site sizes, for SEFC? Do social, environmental, and economic considerations influence this question? Should there be a more open attitude towards architectural style and building configuration on the individual building parcels? Individual blocks? Streets? To what extent should the site develop incrementally?[70] How big should blocks be? How many parcels on a block? Stated another way, how many different architects or architectural firms should design buildings for the site? One? Four? Ten? One hundred? Depending on

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[69] *CL*, 6; *PS*, 35.

[70] *USD*, 16 and 30.

your answer to this question, how should the City subdivide the site so as to ensure this outcome?

3. Building Energy Performance

Buildings should be designed to cut total energy use to 285 kWh/m2/yr,[71] which is about half of the norm. Peak electrical use should be cut further still in order to even out regional demands on energy infrastructure to 33 W/m2[72].

4. Building Energy from Renewable Sources

At least five per cent of the energy used on site should come from on-site renewable sources such as solar voltaics, solar hot water,[73] and geothermal energy. Dependence on the sun for even this relatively small proportion of the total energy need will have an important influence on building and urban form.

5. Building/Public Realm Relations

Buildings should be designed to create clearly articulated street spaces, particularly on north-south streets, with as many frequntly used doors and as many windows on the street as possible.[74] Buildings should allow the maximum amount of sun possible into public and semi-public open spaces.[75]

6. Building Heights.

The City has assigned general height limits for the various portions of the site. These restrictions are intended to protect views, and ensure that SEFC buildings are compatible with their urban context. Generally speaking, the intent is to allow a maximum height of 300 feet at the southeast corner of the site; gradually lower heights to the existing 100-foot maximum on Second Avenue at about the midpoint of the site; lower them still more in the middle-north part of the site; and keep them low from the middle-north part of the site to the northwest corner. Soil problems are a major reason for restricting the middle-north to the northwest corner of the site to park use. A 20-metre-wide bridgehead zone along the east side of the Cambie Street Bridge would be precluded from building development. For an additional 15 metres the maximum height of buildings would be restricted to four stories.[76] Beyond that distance no special bridge related considerations

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[71] *USD*, 18.
[72] *USD*, 17.
[73] *PS*, 32.
[74] *PS*, 33 and 113.
[75] *PS*, 34. The Creekside Landing proposal roughly conforms to this pattern, which can be seen in the photograph of the model shown on the first inside page of the *Creekside Landing Report.*
[76] *PS*, 36.

apply.

7. Old Views, Emphasized Views, New Views

Generally, existing views down north-south streets should be protected and enhanced.[77] Creekside Landing consultants have also emphasized the importance of the view down First Avenue to the Science Centre.[78] New views of the waterfront, the city skyline, and the mountains are possible from many, if not all, parts of the site. Creation of these special views should be a high priority. However, if there is an irresolvable conflict between a sustainability objective and the desire to preserve a view, the sustainability concern will prevail.

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[77] *CL*, 20.
[78] *USD*, 23.

IV. CYCLES OF GROWTH AND WASTE

1. Clean Water

Current levels of per capita water use are close to exceeding Vancouver's water supply. Cut average residential consumption to as close to 130 litres per day per person as possible.[79] Help achieve this reduction by capturing rainwater for use in flushing toilets and site irrigation.[80]

2. Greywater

Treat/use greywater on site wherever possible for irrigation and improved soil hydrology.[81]

3. Black Water

The efficacy and efficiency of the Greater Vancouver Regional District's (GVRD) sewage treatment system is marginal. Treatment is only "primary," and it does little more than separate solid from liquid waste. Unlike the newer communities that have separate systems for septic waste and storm water, here in Vancouver septic waste flows through the same pipe as does rainwater. On rainy days the delivery system is overtaxed, leading to discharges of virtually raw sewage into English Bay, False Creek, Still Creek, Burrard Inlet, and the Fraser River. Receiving waters are coming under increasing stress from this inadequate system. The potential for small-scale on-site disposal has been advanced by many as one possible long-term solution to this problem. There are systems that can completely treat wastes produced within a group of buildings or a single building, either from inside these structures, from adjacent open spaces, or from rooftop gardens. Assume that 20 per cent of the blackwater flows generated would be treated on site through the use of solar aquatic or some other appropriate technology.[82] Some amount of open space could be used for this purpose and could, conceivably, be combined with natural and habitat areas.

4. Household Waste

Consider the creation of a centralized neighbourhood composting system.[83] SEFC's overall target is to reduce solid waste going to landfills to 20 per cent of the per capita

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[79] *PS*, 42.

[80] Ibid. Note: most water saving features will likely be located inside of structures and will likely not have a dramatic effect on SEFC urban design.

[81] *USD*, 25; PS, 44.

[82] *PS*, 44; USD, 11.

[83] *USD*, 10.

average for the city.[84]

5. Green Waste

All green waste material that is trimmed, mowed, clipped, or that falls to the surface should be returned to the soils of the site.[85]

6. Produce Gardens

Provide space and support for residents to grow 12.5 per cent of their yearly consumption of produce on site. This space may be located on rooftops, in semi-private areas, and as part of public open space.

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[84] *USD*, 22

[85] *USD*, 22 (this is twice the Vancouver average, but only half the amount grown by the typical resident of Village Homes in Davis, California).

SEFC Charrette Design Program "Cheat Sheet" October 20-23, 1998

Category	Performance Threshold	Design Objective	Quantities
Rainwater	Hold and absorb all rain water on site or clean completely before discharge.	Reveal the operation of the rainwater system through design.	**100%** recharge/clean. No more than **50% impermeable.**
Working Open Space	Clean water, provide habitat, improve soil. Plazas, roads and public spaces should provide social and ecological sustainability. Provide recreation for the community both on the site and off. Provide space for community gardens for those who have none on roofs.	Make "working green" a powerful aesthetic. Express new ideas of "re-creation" in form.	**60%** of green space has habitat value. **2.75 acres** of "sustaining" space per 1,000 population. **12.5%** of produce grown on site.
Soil	Avoid human exposure to hazardous soils. Heal degraded soils wherever possible.	Make "healing soils" a design aesthetic.	
The Public Green	Richly layer green into buildings and infrastructure for biological, energy, amenity, and food production purposes. Link all parts of the site to a continuous waterfront "sea wall" walk which can be pulled back from the shore in places. Shore edge should have vastly enhanced habitat.	Produce a new vision for a more sustainable and rich seam between city and sea, earth and water, structure and plants.	**80%** of foreshore has habitat value. Plants on **25%** of roof area.
Built Structures	The Domtar Salt Building should be converted for some form of public use. Mix residences, commercial, and office as appropriate. Explore "live work" and "workshop" industrial as a component of the community. Insure that basic needs can be met within walking distance.	Create a vibrant mixed use community that integrates with the surrounding community but is also a special place. Let sustainability be obvious in form.	**3,200,000 - 3,400,000 sq ft.** not including cultural, recreational, institutional space. **Gross FSR of 1.6** on entire site inclusive of roads and parks.
Residences	Provide housing for over 5,000 residents. Provide housing for all ages. Provide housing for all incomes. Provide housing for all family types, especially those with children.	A sustainable community is an equitable community. Equity should be apparent in the design.	Avg. unit size = 1,000 sq. ft. 3,000,000 sq. ft residential space. **Net FSR average of 3** 20% low income. 35% families of which 10% are low income..
Parking	Provide one space per unit on average. Locate parking on streets, in surface lots, under structures, or in parking decks. Some parts of the site can have fewer than one space/unit if other sites compensate.	Avoid "dead street syndrome" caused by underground parking. Make structured parking convertible.	**1 space per unit** on *average*.
Commercial life	Mix commercial activities with residential as much as practical. Provide a commercial centre. Combined residence, workshop, and commercial may be permitted. Provide services to the community beyond the site. Use commercial activity to add life to streets.	Express the public nature of commercial life. Design streets to serve commercial purposes.	**200,000 sq. ft.** (more or less is possible). **1 ft.** commercial space for **ea. 15 ft.** residential. Max. **<350m** res to commercial.
Offices	Provide office space for neighbourhood services only.	Express the public nature of office activities as appropriate.	**100,000 sq. ft** (more or less is possible).
Industry	Consider incorporating new types of "workshop" scale industry — compatible with or even supportive of residential uses. Mix "workshop" scale industry in mixed use structures and settings as appropriate.	Make industry visible. Let it enliven community centre(s).	**350 sq. ft.** of space per job. City threshold for this site is **1,000 jobs** (office, industrial, commercial).
School	School will serve SEFC site and surrounding community. School may be part of larger structure or block with other public and private uses. School must have direct access to active and passive recreation areas. Developing the school in a mixed use facility with the community center is encouraged	Take advantage of school program to *express* civic space. Use school activities to enliven public realm.	**35,000 sq. ft.** elementary school.

Community Centre	Community Centre will serve both SEFC and larger context. Centre may be part of larger mixed use structure or block. The function of the Centre can be examined — for example, should it include functions usually associated with libraries? galleries? playhouses? Centre must have direct access to recreation areas.	Take advantage of Community Centre program to *express* civic space. Use Community Centre activities to enliven public realm.	**25,000 sq. ft.** community centre.
Daycare	Spaces must be in four or more locations. Some portion of the total may be in home care day care settings.	Children should be seen *and* heard.	**180 spaces.**
Street and Movement Way Design	Impact of car to be minimized. Allow for all transportation modes in a continuous comprehensive system. Connect on-site streets to off-site streets. Insure universal access.	Express the primacy of the pedestrian. Maintain view corridors thru site down street ends. Design to minimum allowable widths.	No res. > **350 metres** from transit. **60 ft. wide** "sea wall" walk, typical. **60%** of "street" surface for non car modes.
High Street	Consider possibilities for 1st Ave. to be a "High Street". If not 1st, then where?	Community heart and commercial centre -- can they be one thing?	
Street Car	Locate the proposed "pedestrian scale" street car line through the site.	Use street car as urban amenity and means to enliven street.	Enters on 1st Ave and will probably stay on 1st Ave on western half of site. Exist point at the east may vary.
Sustainable Streets	Make streets that clean water, provide habitat, accommodate people, and enhance social interaction.	Make "sustainable streets" a powerful new aesthetic.	
Parcel size	Provide a block and parcel plan. The City desires finer grain development than in previous projects. Your master plan might show parcels rather than buildings.	Parcel size is the most significant influence on sense of urban scale.	Provide between **30 - 300 parcels,** individually serviceable.
Building Energy Performance	Cut energy demand of buildings (most of this will be achieved through building design details beyond scope of this exercise - building plate size and shape are an important exception to this rule). Orient buildings for solar and avoid blocking solar access.	How do energy related considerations of building plate size and shape influence urban design for this site.	**75%** of bldgs.with good solar orientation. 90 % of energy from renewable sources (renewable includes hydroelectric) **5%** of energy used produced on site.
Building Heights and Massing	Buildings at s-e corner of the site can be up to 300 ft. Reduce or eliminate shading of open spaces and other structures during all seasons. Provide as many ground oriented units as possible for families with children. Soil contamination makes deep excavation especially difficult on west end of site.	What is the appropriate urban image for this sustainable community.	**300 ft.** maximum. **20 metre wide** bridgehead no-build zone.
Waste Systems	Treat gray water and black water on site whenever possible. Compost all green wastes generated on the site. All multi family buildings to have recycling system.	Take advantage of educational possibilities when locating systems.	**25%** of SEFC sewage treated on site. Reduce solid waste to 200kg/person/year .

DESIGN SUMMARY: Burnaby Mountain (SFU) 1

DESIGN OBJECTIVE	PERFORMANCE THRESHOLDS	QUANTITIES
	A. EQUITY AND VIBRANCY	
A1. Produce inspirational designs of a pedestrian friendly, ecologically responsible and mixed-use university community.	• Provide a diverse mix of uses that invigorates street life. • Locate services, jobs, and transit near homes, all within a network of friendly, walkable streets. • Explore options for combining living and working as a means of increasing choice and to bring vibrancy to the street.	• 100% of residents are within 350 – 400 metres of shops and services. • Reduce VMT by an average of 40% as a result of an integrated, mixed-use community pattern.
A2. Ensure that a wide range of housing densities, types and tenures, appropriate to a wide array of individuals and family arrangements, are included in the plan.	**Residential Land-Use Efficiency and Livability** • Provide housing for up to 10,000 residents in a maximum of 4536 dwelling units. • Explore a variety of housing types: ground-oriented row house, mid-rise apartment and condominium, live/work, as well as secondary suites, co-operative and co-housing types.	**East Neighbourhood:** • 1.7 FSR (60 u.p.a) = 3049 units **South Neighbourhood:** • 0.9 FSR (30 u.p.a.) = 1488 units
	Housing for All Incomes • Provide housing for all ages, lifestyles, incomes, and family types, including students, faculty, university staff, singles, and families.	• Target at least 35% as family-oriented housing (i.e., households with children). • A proportion of housing units should be live/work units.
	Residential Parking • Reduce parking requirements: provide and average of 1 space per principle unit. • Allow on-street parking and so avoid "dead street" syndrome. • Consider shared parking between adjacent uses that have non-competing schedules. • Replace surface parking spaces within parking structures.	• 1 space per principle unit (on average). • Parking requirement for secondary suites may be allocated according to size of unit (e.g., 1 space per every 1,000 sq. ft. of floor space, etc.).

DESIGN SUMMARY: Burnaby Mountain (SFU) 2

DESIGN OBJECTIVE	PERFORMANCE THRESHOLDS	QUANTITIES
A3. Provide for a finely grained and integrated blend of human activity within each neighbourhood that includes opportunities for work in the home and in job locations not presently provided by SFU.	**"Main Street"/Village-Core** • Consider possibilities for locating a village-core and commercial "Main Street" • Commercial and office activities should be located to invigorate the district and to both serve and welcome visitors. • Incorporate university research/office, commercial, and "incubator businesses" into the village-core.	• Provide between 10,000 m2 and 20, 000 m2 (110,000 sq. ft. to 220,000 sq. ft.) of commercial space. • Provide an additional 9290 m2 (100,000 sq. ft.) of office space. • Consider substitution of additional "hi-tech" office space for residential units.
	Commercial Parking • Allow on-street parking and so avoid "dead street" syndrome. • Opportunities for shared parking in nearby structured parking facilities should be maximized to provide adequate parking. • Replace surface parking spaces within parking structures.	• 1 parking space per unit in mixed-use developments. • 1.6 spaces per unit for apartments. • 1.75 spaces per unit for townhouses (visitors at 0.25 per unit).
	Community Living and Community Facilities • Community services must address the needs of the entire community and provide a forum for interaction among the SFU community and residents of the new community. • Schools and day care must have direct access to active and passive recreation areas.	• 1 fire protection facility at 1,071 m2 (11,000 sq. ft.). • At least 2 childcare facilities w/min. 223 m2 (2400 sq. ft.) of interior space and including at least 35 m2 (377 sq. ft.) of outdoor space. • Up to 2, schools at 3,048 m2 (35,000 sq. ft.) each.

DESIGN SUMMARY: Burnaby Mountain (SFU) 3

DESIGN OBJECTIVE	PERFORMANCE THRESHOLDS	QUANTITIES
	University Facilities • Use the DPC Plan as the basis for future expansion but explore opportunities for greater integration among university-related uses and commercial village-core. • Maintain the current capacity and general location of the bus loading and unloading function but suggest ways of reconfiguring this function. • Explore options for re-using existing location of service station for fire hall/public safety building. • Accommodate an additional water reservoir to accommodate development in South Neighbourhood. • Adapt East Annex for continued university-related facility, or for school, community centre or other use. • Relocation of President's Residence is permitted. New residential facility should incorporate additional entertainment facilities. • Consider a reconfiguration of parking area, as well as design of public space for BC Hydro facility.	
A4. Establish Urban Typologies for building, community design, and circulation that respond to the original University Master Plan and its primary circulation axis or spine, using public streets as the primary armature of public space.	**Streets for Everything, but Mostly for People** • Reduce impact of the automobile. • Allow for all transportation modes in a continuous comprehensive system. • Make streets that clean water, provide habitat, accommodate people, and enhance social interation. • Locate residences within a three-to four-minute walk of regular transit service. • Pedestrian movement systems must be universally accessible.	• 20% of the site to be "green streets". • Basic needs (i.e., commercial and transit services) are within a 350 to 400 metre walkable distance of all residences. • Future auto traffic should not exceed the peak commuter traffic currently occurring at SFU. • Devote 60% of street surface to non-car modes.

DESIGN SUMMARY: Burnaby Mountain (SFU) 4

DESIGN OBJECTIVE	PERFORMANCE THRESHOLDS	QUANTITIES
	Block Size/Building Site Sizes • Provide a block model plan that illustrates the most appropriate configuration and scale of development for maximum social and physical integration (your plan may show parcels rather than buildings). • Parcel size is the most significant influence on urban scale. Explore a range of lot sizes as a means of providing diversity of housing choice and tenure.	• Reconsider residential and commercial setback requirements with the exception of those intended for riparian zones. • Consider the most appropriate lot coverage in order to achieve the desired building/public realm relationships for this community.
	Building Setbacks • Establish the most appropriate setback and building parcel configuration to achieve the various objectives for livability and street vibrancy.	• Residential and commercial setbacks should enhance the vibrancy of the street.
	Building Heights • Consider potential impacts on existing views and solar access consequent to building height and massing, along with livability and view considerations for new residents. • Structures should be respectful to view out of and within the site.	• Building heights in East Neighbourhood not to exceed 10 storeys or 33.5 m (109.9 ft.). • Building heights in South Neighbourhood not to 4 storeys or 16.5 m (54.1 ft.). • Building heights in university precinct not to exceed 37 m (121.39 ft.).
A5. Develop an appropriate architectural language that complements and enhances the architectural character of the University.	**Building Typology** • What are the particular building types that best respond to the myriad social, economic, and environmental goals for this community? • Structures should complement the architectural and material language of the University. • Buildings should reflect the landscape; layer green into buildings with the goal of reducing energy costs, cleaning water, and exploring opportunities for food production.	

DESIGN SUMMARY: Burnaby Mountain (SFU) 5

DESIGN OBJECTIVE	PERFORMANCE THRESHOLDS	QUANTITIES
	B. ECOLOGICAL FUNCTION	
B1. Produce "fish friendly" designs that protect and enhance all environmentally sensitive and/or degraded areas (i.e., wetlands, watercourses, ravines, and watersheds, groundwater recharge areas with fragile or unstable soils) while maintaining or enhancing the ecological performance of native habitats, hydrology, and landform.	**Environmental Protection** • Designs should use the natural ecology and topography of the site as a point of departure, seeking to work with these inherent capacities and characteristics rather than against them. • Protect and maintain existing major watercourses as per Department of Fisheries and Oceans and the Ministry of Environment guidelines. • Enhance the integration of the community into the forest edge. • Preserve significant trees and tree groupings. • Preserve in-situ ecology in the Naheeno enclave. • Protect wildlife corridors and/or greenway connections into and across the community. • Devise an urban forest strategy that provides habitat, mitigates storm water impacts, shades buildings, and creates visual and ecological connections into the surrounding forests.	
B2. Work out and resolve the apparent contradiction between intense urban land-use and environmental policies.	• Resolve the potential conflicts between intense urban land use and the desire to enhance the site's ecological function.	
B3. Preserve, create, and link public spaces, preserved forest blocks, parks, and recreation areas. Maintain and enhance public	**Parks, Schoolyards, Squares, and Greenways** • Combine functions (ecological and recreational) in open-space and park planning strategies. • Make the idea of "working greens" a powerful aesthetic. • Urban squares and green streets should incorporate "park-like" activities, bio-remediation features, and grey and black water remediation marsh areas. • Link riparian and forested areas to public parks, schoolyards, squares, and greenways in a way that is mutually beneficial.	• 60%of open space should have habitat value.

DESIGN SUMMARY: Burnaby Mountain (SFU) 6

DESIGN OBJECTIVE	PERFORMANCE THRESHOLDS	QUANTITIES
B4. Examine the architectural and community design potentials inherent in the concept of "green infrastructure," where road, utility, and storm drain systems are integrated and compatible with stream and habitat systems of the site.	**Green Infrastructure** • Maximize the benefits of infrastructure expenditures by incorporating, through design, multi-use opportunities, such as recreation, multi-modal transportation, ecological enhancement, and bioremediation functions, into the system. •□Integrate water quality Best Management Practice (BMP) into designs.	
B5. Explore other cost effective strategies for reducing off site impacts resulting from human activities occurring on the site.	• Attempt to heal past, less sensitive urban land use of the site. • Consider a completely surface "green" system for managing storm runoff.	
B6. Show how local and regional policies may be achieved more efficiently through building and retrofitting sites for improved environmental performance.	• Ensure roads, plazas, and other open spaces contribute to both ecological and cultural objectives. • Designs should reveal and celebrate the processes of moving, cleaning, and infiltrating rainwater.	• No more than 50% of the site should be impervious. • Ensure that at least 80% of all water that falls on the site during an average year is absorbed by the soil.

DESIGN SUMMARY: Burnaby Mountain (SFU) 7

DESIGN OBJECTIVE	PERFORMANCE THRESHOLDS	QUANTITIES
C. ECONOMY		
C1. Ensure that development secures a financial legacy for Simon Fraser University.	BMCC hopes to create a financial endowment from the development of these lands in addition to other objectives. The corporation's hope is to make an internationally renowned community at this site, renowned for both the quality of life that it provides for its residents and for the extent to which the project both respects and takes advantage of the natural attributes of the site. • Designers should seek ways to manifest this spirit in their project in ways that would appeal to potential new residents, tapping existing markets and stimulating new ones.	• Provide a mix of housing forms and tenures with consideration to "Strategics" study.
C2. Explore ways of reducing immediate and life cycle costs of site infrastructure, seeking ways to work with, not against, the natural capacities of the site.	**Heating and Cooling** • Design the site with due regard for climatic imperatives: reduce building energy requirements by providing optimal solar orientation, solar access, passive solar heating, and day-lighting, while considering the view opportunities afforded by the site.	• Cut total energy use of buildings to the target of 285 kWh/m2 per year (about half of the norm). • At least 10 %of the energy used on site should come from on-site renewable sources such as solar voltaics, passive solar, solar hot water, and geothermal energy. • 75 % of buildings have good solar orientation.
C3. Consider life cycle costing to determine maximum economic efficiency.	• Consider the long-term durability and efficiency of both buildings and site infrastructure, incorporating elements wherever possible that will ensure long term gain.	
C4. Demonstrate the relationship between livability, affordability, and ecological compatibility in community form.	• Designs should make explicit the connection between social good, ecological integrity, and economic efficiency of means.	

DESIGN SUMMARY: Burnaby Mountain (SFU) 8

DESIGN OBJECTIVE	PERFORMANCE THRESHOLDS	QUANTITIES
D. EDUCATION		
D1. Identify market-responsive design ideas to ensure that development secures a financial legacy for Simon Fraser University.	• The common spaces between buildings and the surrounding natural landscape are key elements to the campus, and provide interstitial, interactive areas where gathering, social discourse, exploration and the spirit of learning becomes manifest. • These elements of architectural form, community design and environmental stewardship are highly desirable elements for academic institutions and should be a celebrated component of designs. • Designs should communicate a spirit of living and learning holistically and continuously.	
D2. Provide a model for a "university community" that updates yet respects and extends the original SFU Campus vision.	**Public Space in the Burnaby Mountain Community** •□ Built form should emphasize integration, communication, and education throughout the community. • Think of how research and teaching activities could become an obvious and central element of the community. • Designs should blend research and teaching functions with the activity of the streets and the village-core.	

APPENDIX C
The Sustainable Development Issues Matrix

Sustainable Urban Development Issue Matrix p.1

Sustainable Community Planning Issues	*Land Use*	*Transportation*	*Open Space*	*Built Form*
Sustainability Issue **Energy & Air Quality**	* Provide mixed use development at densities high enough to support a convenient transit system * Provide a diversity of housing types. * Layout with high densities near transit systems and in regional town centers * Ensure a pedestrian - permeable and flexible urban structure * Ensure land area is allocated for new green infrastructure	* Develop priorities system (pedestrians, bicyclists, transit, goods movement, automobiles) * Design the narrowest roads possible * Design streets so pedestrians have dominance and auto speeds are slow. * Set parking requirements as low as possible; explore a car-free zone. * Offer commuter cyclist paths.	* Lay out open space networks to support pedestrian/bicycle network and surface runoff system * Reduce lawn in park areas to an absolute minimum and maximize treed areas. * Ensure public open space is interesting and safe.	* Design green, energy-efficient buildings * Keep building dimensions consistent with passive heating, cooling and ventilation systems. * Consider integration of energy production systems into building design.
Sustainability Issue **Water and Liquid Waste**	* Use watershed network as an ordering pattern for the site * Preserve existing waterways and establish new water courses as needed to manage runoff and water supply & treatment systems. * Integrate innovative sewage treatement infrastructure into land use patterns.	* Ensure road runoff management system offers ecological habitat value where possible and is designed to treat contaminants in runoff. * Ensure road network preserves the integrity of streams and riparian areas. * Use permeable materials where possible. * Minimize conventional curb and gutter systems in favour of surface runoff systems.	* Use local watershed network as an ordering pattern for the open space network. * Integrate grey/black water treatment systems into the open space network and use as an amenity where possible * Utilize runoff and other water flows as opportunities for public art and interest in the public realm. * Maximize permeability in open space.	* Design buildings to minimize runoff from roofs (green roofs), or provide systems to store runoff for use in landscape * Consider ways to reduce toxicity of runoff from building / roof materials. * Ensure building siting and design preserves integrity of riparian areas. * Integrate grey/black water treatment systems into building and site design.

Sustainable Community Planning Issues	*Infrastructure*	*Institutional Considerations*	*Local Programs*
Sustainability Issue **Energy & Air Quality**	* Develop alternative energy infrastructure on site where possible (solar, wind, microhydro, biomass, geothermal) * Introduce district heating systems to link buildings and land uses for heat where feasible.	* Identify regulatory changes needed to support energy efficient patterns. * Identify regulatory and policy review systems to address energy issues in development. * Develop proposals for tax and other incentives to support green development patterns. * Establish institutional systems to monitor energy consumption	* Establish relationship with utilities for energy-efficient design. * Develop relationships with key interest groups and stakeholders and develop educational programs related to energy use, efficiency and conservation.
Sustainability Issue **Water and Liquid Waste**	* Minimize water and waste infrastructure systems where possible. * Provide on-site systems for grey/black water treatment and recycling – provide for future adaptability if not possible at present. * Use surface runoff management systems including percolation where possible, instead of conventional stormwater sewer system.	* Consider regulatory changes required to support innovative water and liquid waste systems. * Identify organizations that could be responsible for new systems and consider education / management systems needed.	* Identify potential educational and community identity building initiatives associated with new water / waste system designs. * Identify possible linkages between new systems and water-oriented stakeholder / interest group programs.

Sustainable Community Planning Issues	*Land Use*	*Transportation*	*Open Space*	*Built Form*
Sustainability Issue **Solid Waste**	* Address industrial ecology systems in land use planning to find synergies between companies in use/recycling of resources and wastes. * Consider land required for on-site composting systems to reduce waste haulage. * Consider recycling depots and other systems required to reduce on-site waste. * Develop robust land use and built form pattern that can adapt over time without requiring demolition.	* Design waste management system to minimize the need to truck waste off-site. * Choose road surfacing materials that can be reused.	* Integrate recycling drop-offs / depots into public realm along with conventional waste systems. * Integrate composting facilities into park and greenway design * Use recycled, recyclable and re-usable materials in open space areas.	* Develop well-built and robust buildings that can adapt to changes in use over many decades without requiring demolition. * Preserve existing structures on a site for re-use where possible, or recycle building materials from existing structures in new development. * Use recycled materials in new buildings. * For new buildings, consider deconstruction strategy at the design stage (cradle-to-cradle).
Sustainability Issue **Biodiversity / Ecological integrity**	* Preserve existing important natural areas and sensitive areas. * Develop network of greenways and "ecological infrastructure areas" throughout site, with an eye to connecting existing natural areas or corridors.	* Design roadways to preserve integrity of existing waterways, habitat and wildlife migration routes. * Design roadway edges and easements as habitat corridors.	* Design open space to serve as ecological infrastructure. * Ensure natural areas, parks and greenways are designed to provide habitat for local species. * Link local greenspace, greenways and riparian areas to those in surrounding region, to preserve overall habitat function.	* Design buildings to provide ecosystem benefits through green roofs, green walls, and water runoff design.

Sustainable Community Planning Issues	*Infrastructure*	*Institutional Considerations*	*Local Programs*
Sustainability Issue **Solid Waste**	* Ensure facilities for recycling and composting are included in site infrastructure plan.	* Integrate existing solid waste programs into design. * Identify progressive changes needed to support proposed waste management systems.	* Identify educational programs on waste that could be integrated into project, and include relevant stakeholders and their programs where possible.
Sustainability Issue **Biodiversity / Ecological integrity**	* Design infrastructure systems to share similar rights-of-way to minimize ecosystem disruptions. * Design local decentralized infrastructure where possible.	* Integrate existing policy and guidelines where they provide a good foundation for green design. * Identify additional policy, guidelines, and regulatory change needed to promote a stronger site ecosystem. * Introduce monitoring programs to track biodiversity.	* Propose programs to increase ecosystem health (tree planting, stream keepers, nesting boxes, etc.) * Integrate existing stakeholders working to preserve and enhance ecosystem health into project.

Sustainable Community Planning Issues	*Land Use*	*Transportation*	*Open Space*	*Built Form*
Sustainability Issue **Economic Health**	* Ensure land use patterns will support a strong local economy, a diversity of uses, employment & business opportunities. * Ensure land uses are appropriately sited for business success and for easy transit access. * Integrate uses as flexibly as possible recognizing some don't mix well. * Consider industrial ecology networks and types of businesses that can benefit from locating next to each other (to share systems and resource and/or waste streams). * Consider evolution of land uses and changes in demand for uses over time and ensure plan will accommodate predictable changes in demand and supply.	* Provide appropriate access to commercial and industrial areas for customers, workers and goods movement. * Focus retail where transit is convenient. * Provide for telecommuting infrastructure * Develop pedestrian-oriented and/or car-free zones in retail and commercial areas.	* Integrate well-used public open space (recreational areas and greenways) into and around commercial areas to promote a mix of activities. * Provide adequate public open space near high density residential, especially in areas with family housing to maintain land values.	* Design buildings that are flexible and can accommodate a range of uses over time. * Ensure retail spaces are located and designed to be commercially successful. * Provide a range of housing types to encourage a wide range of income groups to live in higher density areas – provide workers and customers.
Sustainability Issue **Social Health**	* Ensure housing and commercial land uses are mixed appropriately so as to support a diverse and locally vibrant social community. * Consider the land use needs for each type of resident, worker & visitor.	* Promote non-auto oriented communities that encourage walking and cycling to improve local air quality and individual health. * Consider pedestrian and cyclist safety in transportation network.	* Ensure open space design includes programs that support a balanced and healthy life, including recreation, reflection, pedestrian and bicycle movement, play, etc. * Allocate land to community gardens where appropriate. * Design public open spaces which encourage and support interaction between people.	* Design buildings to provide interest and transparency to public open space areas. * Design buildings with crime and safety in mind. * Design buildings to contribute to livability both inside and out.

Sustainable Community Planning Issues	*Infrastructure*	*Institutional Considerations*	*Local Programs*
Sustainability Issue **Economic Health**	* Provide necessary communications infrastructure for all businesses. * Consider scale of infrastructure needed for planned or projected density of commercial uses.	* Identify key elements of economic development strategy that are relevant to the site's design. * Consider incentives or regulatory changes needed to realize innovative economic strategies for site.	* Consider existing economic programs and how they could be improved to support the vision of sustainable community. * Consider how disadvantaged groups could be included in economic activity on site
Sustainability Issue **Social Health**	* Ensure water supply and waste management systems are secure and adequate to preserve public health. * Design systems so they contribute to all residents' learning about the function and impacts of the infrastructure systems upon which they rely.	* Create a strong vision of a healthy sustainable community. * Identify key priorities for a monitoring system for public and community health indicators in the project.	* Integrate existing progressive social programs into the project design. * Consider additional programs for education or change that need to be implemented to realize the vision for community.