



The Sheltair Group

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The Sheltair Adaptive Management Framework & Tools for Long-term Urban Planning

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Summary

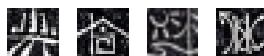
Over the past 7 years, The Sheltair Group in Vancouver has developed a framework, with supporting tools and services, to help to guide planning and design processes. Referred to as *The Sheltair Adaptive Management Framework (AMF)*, it integrates the concept of adaptive management with a comprehensive planning framework.

Municipalities use *The Sheltair AMF* as a means of organizing their Strategic Planning Process, Official Plans, State of the Environment Reporting, etc. while design teams find the Framework useful as a means of structuring their design approach and the concepts underlying the end result.

The Sheltair AMF structures the planning process into a transparent, comprehensive framework that incorporates alignment of all the stages, monitoring of progress, and feedback of results. In essence, the framework can include any principle, goal or strategy that the user desires and it can be easily moulded to fit any current planning framework, methods, tools, and terminology.

During the cities^{PLUS} project, The Sheltair Group applied the AMF to a 100-year long-term planning exercise for Greater Vancouver. It was found that as our cities become more complex and as our time horizons extend, the AMF becomes a crucial component of our planning process. The AMF allows municipalities the opportunity to:

- organize and communicate the complexities of long-term planning;
- compare and share learning between cities;
- set a path towards an integrated approach;
- to identify gaps and redundancies in our process, plans, and systems;
- monitor our performance;
- update our plans and to adapt to changes without losing sight of our original intentions;
- align our long-term vision with the short-term actions; and
- build in accountability that avoids short-term political decisions that are inconsistent with our initial intentions.





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Approach

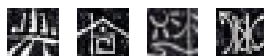
The Sheltair Adaptive Management Framework (AMF) integrates the concept of Adaptive Management with a comprehensive Planning Framework. The framework is useful in both the planning and design arena. Municipalities use the framework as a means of organizing their Strategic Planning Process, Official Plans, State of the Environment Reporting, etc. Design teams find the framework useful as a means of structuring their design approach and the concepts underlying the end result, to allow for performance monitoring after construction.

The Sheltair AMF consists of a comprehensive Planning Framework that is increasingly hierarchical so it can be viewed as a pyramid that has, at its top, a unique “vision” for the project or community. From this pinnacle, the Framework divides into a spreading tree of elements, with increasing levels of detail and specificity, until at the bottom it addresses implementation of specific actions.

Unlike most planning frameworks, the AMF requires an “integration” stage where we consolidate knowledge and look for synergies or conflicts prior to committing to actions. This is an essential stage when dealing with long-term planning, seeing that we consolidate the complexities found in the collaborative efforts, various perspectives, multiple systems, and extended time horizons. The AMF illustration (see back of document) describes the sample levels of the framework in more detail. In essence, the framework can include any principle, goal or strategy that the user desires and it can be easily moulded to fit any current planning framework, methods, and terminology. In this sense it is a form of ‘methodological pluralism’ - everything fits inside the framework.

Underlying this comprehensive Planning Framework is the concept of adaptive management. Adaptive management originated with fisheries and forestry biologists who discovered that natural ecosystems were so complex and interconnected that resource management models failed to accurately predict results. Their solution was to develop policy that assumed an element of surprise, and that was intentionally designed to respond to new knowledge and altering circumstances. It assumes ‘policy as experimentation’.

The same approach works well for urban planning, especially as planning time horizons extend and the complexity of urban areas starts to mimic natural systems. Adaptive management is an approach to policy and planning that enhances our capacity for learning and responding. If we fail to learn from experience, we miss the opportunity improve. And if policies cannot easily be adapted to new circumstances, the policies themselves become part of the problem. However the increasing complexity and accelerated pace of change in the modern world gives added weight to adaptive management. It is now much easier to make big mistakes, with rapid consequence. Nobody can accurately predict the future in 50 or 100 years with any degree of confidence. The only confident prediction is that you will be wrong. Hence long-term thinking is not about fixing in place a set of long-term policies; rather it is about adopting a process over the long-term that allows for frequent readjustment of current policy and plans in the face of new knowledge, new experience and new desires.





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Three processes overlay with the comprehensive Planning Framework to convert this pyramid into an adaptive management system. First, an alignment process is conducted from top to bottom; in other words, as general ideas are unbundled into more specific ideas a clear and up-to-date rationale is provided. Second, a monitoring process supports the pyramid, evaluating actual performance against intended results. And third, a feedback process ensures that the entire pyramid of ideas is informed about success and failure, and is encouraged to respond accordingly.

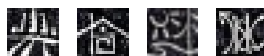
The end result is *The Sheltair AMF* that structures the planning process into a transparent, comprehensive framework that incorporates alignment of all the stages, monitoring of progress, and feedback of results.

Benefits

The Sheltair AMF helps to solve the problem of **organizing and communicating the complexities** underlying collaborative long-term sustainability planning. It puts first things first and cross-links every concept and action into an easily understood hierarchy. This creates an easy-to-follow mental map for setting and justifying specific recommendations. Everyone involved in the planning can follow the transparent, logical connections between the intended goals and overall vision, on the one hand, and the detailed actions and results on the other. It allows every agency and stakeholder to understand how their work can be aligned as part of the commitment to sustainability and it allows decision makers to see why each action is required, how it fits into the overall vision, and how the results will help meet the sustainability goals.

The AMF provides a common structure and standardised process for planning, **allowing comparability and shared learning between cities**. It is a comprehensive framework that transcends professional and departmental boundaries and **sets a path towards an integrated approach**. It provides a map of our plans in a structured way, **allowing us to identify gaps and redundancies** in the overall process. It allows us the opportunity to **monitor our performance** and to **update our plans and to adapt to changes** without losing sight of our original intentions and the connections flowing from that. If the vision changes over time, then all subsequent layers of the framework can be adjusted accordingly. Or if the implementation actions encounter surprises, or produce inappropriate results, then the problem can be tracked back higher up in the framework and corrective changes can be made at all affected connection points.

The framework allows us to **align our long-term vision with the short-term actions** that will set us on the path towards achieving our long-term vision. It makes it easy to understand where we are going and why. By aligning our vision and initial values with our actions, the AMF also builds in **accountability** and allows us to cherish our long-term values and **avoid short-term political decisions** that are inconsistent with our initial intentions. Every action is linked to a goal and the vision, ensuring that we are doing what we set out to do.



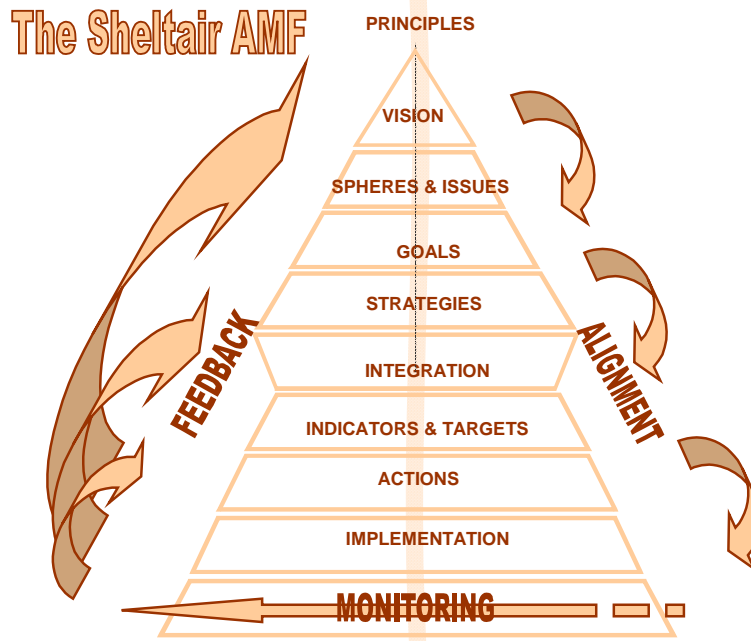


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The Sheltair AMF



Principles are broad value-based statements that form the core of the framework. These are intended to set the direction for all activities and to define the priorities.

The **vision** is a description of how we desire the end result to be. It is the descriptive “artist rendering” of our end result.

Spheres and issue areas sets the scope and allows us an opportunity to determine where we are at and what we need to focus on. It includes typically the 3 spheres: social, economic, and environmental that further break down into sub issue areas (or broad categories of concern), that help participants quickly focus on those areas of special interest, while at the same time ensuring a broad, balanced and ‘integrative’ perspective.

Goals elaborate upon the fundamental principles and define the ultimate condition desired. Each issue area can have a number of goals associated with it. Sometimes divided into objectives, goals can indicate the direction of change that is desired. When conducting long-term planning, it is particularly important that the goals are identified as “End-state Goals”.

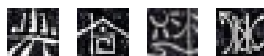
Key **strategies** explore and identify the basic approaches or the best practices that can be implemented in order to achieve each goal.

Integration allows us to explore synergies and conflicts among all the strategies and plans so that we derive at an integrated plan and an integrated, manageable set of “catalyst strategies”.

Performance **indicators and targets** can be identified for each “catalyst strategy”. These form the quantifiable measurement of performance and tell us how well we are performing. “Design indicators” inform and guide designers and coordinate and apportion their effort. “Monitoring indicators” measure how well a particular project is actually performing, and assist learning and long-term management.

Specific **actions** or detailed action plans provide a range of activities that can be implemented by each of the stakeholders or agencies in order to fulfill the targets. It describes the various roles and influence of each player in achieving the integrated target.

Implementation is the final stage in the Framework, and involves aligning policies to achieve desired actions that allow change to happen on the ground and monitoring to start.



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Supporting Tools

Specific consulting services and tools mediate *The Sheltair AMF* at every stage. These tools have been developed, refined, and expanded by The Sheltair Group while using the framework on projects of varying scale for the last 7 years. The tools include not only software, but also training and facilitation sessions intended to systematically engage participants in increasingly more specific discussions about priorities issues.

The supporting tools are designed to tailor the AMF to reflect the mandate and capabilities of a particular organisation, including local government institutions, utilities, and corporations involved in urban development. The AMF systematically guides the planning team, while the tools help facilitate planning at varying levels within the framework. From top to bottom, here are the AMF tools available from The Sheltair Group:

The PLUS Professional Development Workshop (the PLUS PD Workshop)

This workshop is designed to help professionals understand *The Sheltair AMF*, and become familiar with both the theory and practice of integrated long-term planning. The AMF is explored from four perspectives:

- i. The Long View,
- ii. Resiliency and Adaptability,
- iii. Holistic thinking and the One-System Approach, and
- iv. Integrated Design and Collaborative Planning Processes

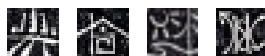
These four fundamentals are interrelated, and together they provide a new method for planning urban systems. The workshop involves participants in practical applications of the concepts. Planners, engineers and decision-makers have the opportunity to explore and critique the concepts and 'try them on for size'. Many insights and lessons are offered, drawn from Sheltair's role as national team leader for the cities^{PLUS} long-term plan for Greater Vancouver. We also include lessons drawn from the other teams that participated in the international competition on Sustainable Urban System Design.

Visioning & Goal-setting Sessions

The Sheltair Group offers Visioning as well as Goal-setting Workshops to help groups flush out and clarify the first few levels of the AMF. During the visioning sessions it is important to push participants beyond their current thinking and to engage them in thinking out of the box. Sheltair effectively facilitate Goal-setting sessions and help participants to formulate their goals as "end-state goals" when doing long term planning. After the session, we polish and rework the vision and goals into a consistent and strong foundation for subsequent layers in the framework.

Scenario Planning using MetaFlow Diagrams

By seeing a system as a whole, it is easier to identify the priority areas, and to envision system-wide solutions for improved conservation and efficiency. The Sheltair Group has developed visualization software for this purpose that assists us in Scenario Planning. *MetaFlow* converts tabular information on a specific system into 'Sankey Diagrams' that portray the direction and quantify of flows within the system. For example, a MetaFlow





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diagram allows anyone to easily track the flows of energy through the urban system from primary sources to conversion facilities, to final end uses and ultimately the release of energy as waste heat. MetaFlow diagrams can also be created for potable water, materials, storm water, and transportation, at the parcel, neighbourhood or regional scale. In all cases the diagram shows how resources from nature, to nature, and the specific quantities by use at each stage in the lifecycle. MetaFlow is a useful tool both for analysing urban systems, and developing scenarios.

Best Practice Library

The Sheltair Group has published numerous best practice and guideline documents for cities, resort communities, developers and agencies. This breadth of experience constitutes a library of information that can be used to assemble cost-effective best practices (or strategies).

Integrated Planning and Design Charrettes

The process of integration can be a very difficult one when doing planning or design. Bringing diverse viewpoints and information around a common table can provide a rich environment for new ideas and creativity to emerge. The Sheltair Group offers multi-day integration charrettes, using a roundtable approach to bring a wide range of people and information together in an effective, engaging way. Our charrettes assist municipalities and design professionals to explore synergies and to identify conflicts when integrating.

Target-setting Workshops using MetaScale

The Sheltair Group' Target-setting Workshop utilises an effective approach for setting specific targets, quickly, with the use of comparative benchmarks. Using Sheltair's *MetaScale* software, and drawing from our database of indicators and benchmark values, we automatically generate easy-to-understand horizontal scales, comparing one city or system with another. The software can be used for presenting any kind of benchmark: past performance, best practice, proposed targets, critical thresholds or industry standards. The MetaScale benchmarks help groups make informed decisions quickly. By combining short-term targets with end-state goals as part of the workshop exercises, it becomes possible to chart the necessary changes over time, showing the critical path, and the preferred path for achieving any goal. This is what is referred to as the 'solution space' for an urban system.

Local Action Plans

The Sheltair Group utilises a Results Based Management Framework to develop Local Action Plans during the Action level of the AMF. These action plans translate broad directions into specific policies and programmes for managing Air Quality, Energy, Greenhouse Gas Emissions, etc. The Sheltair Group also makes use of Action Charts to allow clients to see in a short synopsis format the various actions that can be taken by each of the stakeholders and agencies to initiate change.

