

Involving stakeholders to achieve successful development of brownfield sites

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Abstract

Our overall quality of life depends on balancing the interrelationship between human and ecological health, socio-cultural values, and economic well-being. Achieving appropriate balance of these components is critical to modern environmental (e.g., Brownfield site) decision-making. The American Society of Testing and Materials (ASTM) is involved in developing a standard guide to facilitate the analysis and management of Quality of Life decision making. This guide will provide a process to help identify, analyze, and resolve stakeholders' issues associated with environmental problems. A key component to the Quality of Life process is to empower the affected stakeholders to enable genuine participation in the decision making and management process. The basic components of the Quality of Life process will be presented along with an example case where the methods have been applied successfully to the development of a Brownfield property in urban Toronto, Canada.

The application of the Quality of Life process enabled participation of all the affected stakeholders (people in the community, the developer, local government and regulators) from the very beginning. The stakeholders participated in all decision-making of the redevelopment process; from planning the types and locations of buildings through landscaping/community art for the site, traffic flow/public transportation, day-care requirements and a variety of specific community amenities (up-grading lake access portals, various water recreation facilities, community playground equipment). Application of the Quality of Life process resulted in a win-win situation for all stakeholders (i.e., people in the community, regulators and the developer). The derelict industrial property is being replaced by a residential development that will improve the overall quality

of life of the community. The developer is completing a profitable, successful real estate project, without the excessive delays and resulting expense typically associated with such a project. The historical environmental issues are being successfully resolved with the necessary due diligence and care, but without the fears and apprehensions that arise from uninformed perceptions that the general public often associate with such issues.

1 Introduction

Industry and government alike are faced with complex environmental decisions that affect a variety of affected sub-populations with very different values and issues, all caring very deeply about their quality of life, as it will be affected by these decisions. The expressed quality of life issues often get very complex. What one group thinks is a bad thing another group is likely to think is a good thing. As a simplistic example, consider the morning commute:

- A Bad Thing: Surely commuting an hour to work, morning and night, would decrease the quality of the commuter's life. Time is wasted, fuel is spent, tires are worn out, and money is put into restoring the car. The probability of a scene like that presented in Figure 1 is greatly increased.

Figure 1: Common scene associated with the morning commute

- A Good Thing: Tire company workers, fuel providers, and mechanics have their quality of life increased as a direct result of commuters funding their paychecks.



Can we then say people's lives are better or worse because of a longer commute? This good news/bad news scenario is a simple example of the type of challenge facing decision-makers. Now, increase the complexity of the issues to

consider balancing the quality of life for a diverse community facing a problem of how to balance the need for growth and economic stability with strong deep-seated religious and cultural values, such as those of First Nations. How does one get both sides to meet somewhere in the middle, so to speak, to move ahead with solving specific environmental problems? Conflicting issues such as these need to be resolved through “informed consensus building” and the direct hands-on involvement of “affected stakeholders.”

Figure 2 diagrams the complexity and interrelationship of the components of a Quality of Life assessment and management effort.

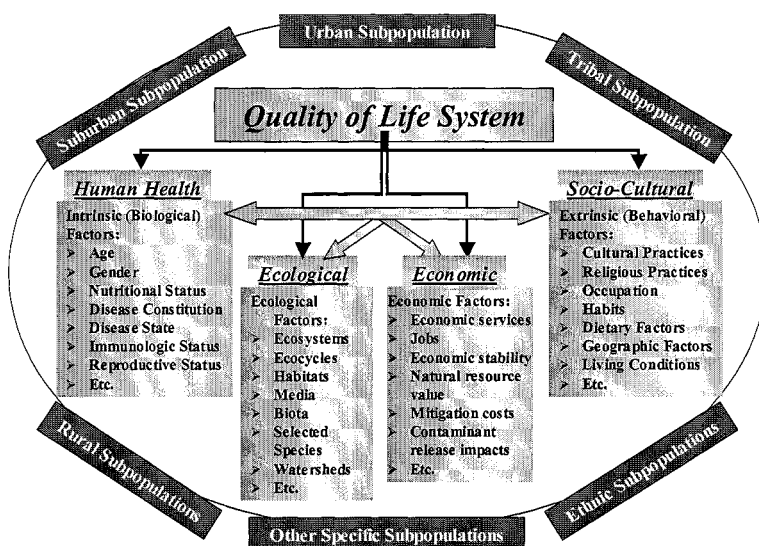


Figure 2: Quality of Life System

2 Quality of Life defined

The World Health Organization has defined Quality of Life as: “The individuals’ perceptions of their position in life, in the context of cultural and value systems in which they live, and in relation to their goals, expectations, standards and concerns” [1]

ASTM is taking on the challenge of seeking to improve Quality of Life by enabling and placing effective, science-based tools in the hands of key stakeholders. The intent is for the stakeholders to decide what areas and issues are most important (human health, ecology, economics, socio-culture) and use the tools best suited to assess and decide on the best course of action for resolving issues and making sound environmental decisions.

2.1 Stakeholder involvement goals

Stakeholder is a term applied to a mix of affected peoples associated with a

particular environmental decision. They are made up of individuals whose lives are directly or indirectly affected as a result of the decision. The types of stakeholders will be discussed later under the Affected Stakeholder section, but it is important to note here that the goals of these stakeholders can be quite diverse and focused. One of the major challenges in environmental decision-making is to determine which of these goals are essential to a fair and successful decision.

Many decisions have impacts that affect various stakeholders in completely different ways. For example, an increase in commute time to and from work burdens drivers, yet benefits mechanics and petroleum companies. Balancing the needs and desires of multiple stakeholders can be accomplished through informed consensus building. However, a process that emphasizes openness, fairness, and consideration of the values of others is required, as well as well-defined leadership and understood rules of engagement.

3 Quality of life assessment process

The ASTM E47.5 Sub-committee (Risk Assessment, Management, and Communication) is taking on the challenge to develop a general process-focused framework standard on Quality of Life assessment and management. This

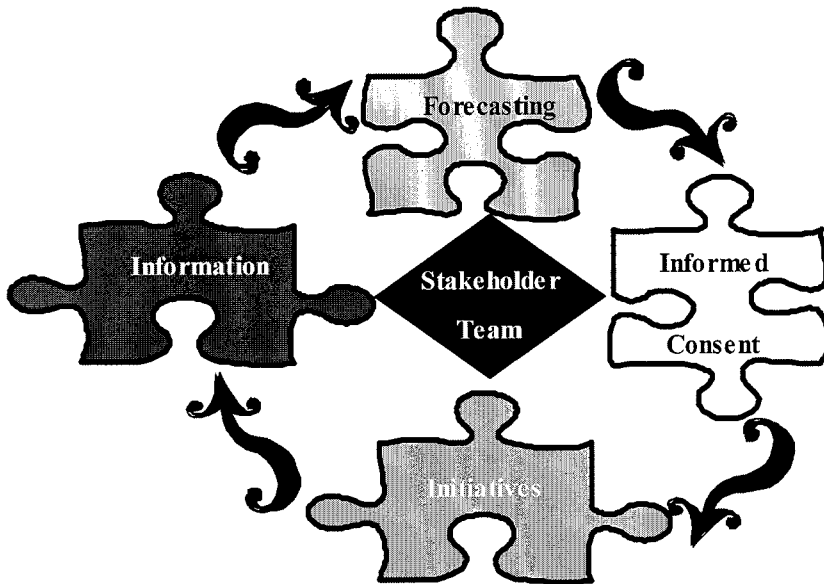


Figure 3: Main components of Quality of Life framework

quality of life process standard will then be supported by existing and new tailored specific analysis and management standards designed to address very focused issues. Figure 3 shows the main functional components of the framework.

3.1 Affected stakeholder identification

The identification of affected stakeholders and the assembly of the Stakeholder Committee is probably the most important step in the whole process, as they will be empowered and responsible for the facilitation of the complete Quality of Life process. Stakeholders can often be grouped into the following three categories: 1) affected stakeholders, 2) interested party stakeholders, and 3) regulatory or oversight stakeholders. The affected stakeholders are those people whose lives will be directly impacted by decisions with respect to their health, economic condition, personal environment, and social-cultural-religious life style. The business or “responsible party” owners are certainly part of the affected stakeholders. The interested party stakeholders are those people who have a vested interest, but who do not personally live and work in the impacted area. The regulatory/oversight stakeholders are usually the local, state/provincial, and federal regulatory agencies charged with legal responsibility for controlling the effect of the environmental decision. Often, one or more of these regulatory agencies are part of, or choose to be part of, the affected stakeholder group.

The Stakeholder Committee is established drawing primarily from the affected stakeholder group and is charged with the responsibility for managing the assessment process and making the decisions. Once the Stakeholder Committee is established, it is essential that the “rules of engagement” for all stakeholders be established and communicated. All stakeholders need to be encouraged and shown how to get involved upfront in the process. The Stakeholder Committee will be empowered and responsible for the issues and information gathering, analysis and forecasting activities, establishing “informed consent,” and managing the initiatives and actions resulting from the decision(s).

3.2 Information/issue establishment

In today’s complex society, fair and equitable environmental decisions require the balancing of many issues and concerns expressed by the stakeholders impacted by the decision. These issues and concerns generally will fit into these four categories:

- Human health issues
- Ecological issues
- Economic issues
- Socio-cultural issues

Often environmental decisions are based on the in-depth analysis of the issues and concerns of just one, or possibly two, of these categories, with human health usually being the most favored. This practice has often left many stakeholders frustrated and upset that their “real concerns were never addressed,” and it is not because they did not want the in-depth analysis regarding human health. They expect that to occur, but they had important issues from the other categories that they felt were equally important and not adequately addressed. The framework standard being developed is aimed at establishing a process for a balanced approach to assessing the issues associated with all four of these categories.

3.3 Analysis/forecasting

After the initial issues and information have been gathered from the stakeholders and it is known where the priorities and values of the stakeholders rest, then the necessary analyses associated with the environmental decision at hand can take place. At this point, the Stakeholder Committee will bring in the technical experts necessary to adequately assess the agreed upon issues and their associated impacts. It is expected that technical impact modeling and analyses will need to be conducted for all four of the issue categories (i.e., human health, ecology, economics, and socio-cultural issues). Once the results from the modeling and analysis activities are available, the Stakeholder Committee will be responsible for establishing agreed-upon weighting and valuations of the forecast range of possible outcomes.

Each of these four areas of analysis potentially encapsulates hundreds of possible forecasting methods and approaches. Also, the analyses performed in each of these four areas can be intimately related with one another. The analyses should not be conducted in isolation. For example, an overall increase in peoples' incomes often results in increased use of natural resources with greater environmental degradation, an increase in human health due to the fact that health care is more affordable, and can result in more money being spent on cultural preservation. In essence, measuring one of these four variables will require that the other three variables be taken into account.

There is no one specific set of analysis methods that will work for all situations. Instead the Stakeholder Committee will need to consider a variety of models and methods in the "tool box" associated with the Quality of Life process to address the specific issues and questions raised regarding the decision at hand. A host of risk analysis tools are currently available from a broad range of sources (e.g., through ASTM, the Environmental Protection Agency, and many others).

To adequately implement the forecasting/analysis stage, a great amount of communication between the stakeholders and the expert advisors will need to take place. Oftentimes stakeholders are turned off immediately when their needs and values are thrown into a "black box" and an answer suddenly appears. Although this cannot be avoided completely, stakeholder facilitation throughout the forecasting/analysis stage can help alleviate much of this skepticism. Also, it is essential that the four forecasting/analysis areas (i.e., human health, ecological, economic, and socio-cultural) be able to "speak" with one another with respect to their results. If all of the economics results are in money terms while all of the socio-cultural measures are in qualitative form, then there will be no real way to analyze these measures together, which is the opposite result of that intended for the Quality of Life Process.

3.4 Informed consent establishment

Once the analyses have been completed, keeping in mind the whole process will likely be quite iterative as the analyses can uncover new issues, it will be necessary to reach (an) agreed upon solution(s). In order to do this, criteria need to be created to decide which solution(s) is(are) preferred. The stakeholders

have to agree upon what is most important to them in balancing the human health, ecological, economic, and socio-cultural impacts to establish criteria that cater to what they value most. This structured area of “solution selection criteria” is essential to guarantee that all of the needs of stakeholders are accounted for during the selection process. Without this structure, certain needs could easily go unaccounted. The stakeholders, through the leadership of the Stakeholder Committee, will have to begin making trade-offs among the different forecasting results. Not every forecast will be positive, so the stakeholders must decide what is most important (from the information stage and their solution selection criteria) among all of their options. Decision assessment tools can be used at this point to prioritize the stakeholders’ decisions and to help analyze the trade-offs that will be made depending on the solution(s) chosen.

3.5 Initiatives/actions

This step of the process involves the implementation of the selected solution(s). Impact and benefit analyses must be run throughout this stage to assess the actual realized impacts of the decision and any associated changes that need to be made to the original decision.

At any point throughout the Quality of Life assessment process, the participants can go back through previous stages to reassess the progress. If certain stakeholder values were not fully accounted for, then it will be necessary to gather more information before making and implementing a decision. If the expert advisors cannot produce accurate forecasts with the information provided, it will be necessary to go back and obtain the necessary information. At any point in the Quality of Life process, there are opportunities to renegotiate and reassess the stakeholders’ needs and additional issues.

4 Case example

The basic components of the Quality of Life process as outlined in the ASTM standard guide have been applied successfully to the development of a Brownfield property in urban Toronto, Canada. This industrial site operated from 1885 to 1991, and was left as an unused contaminated property within a residential community on the shoreline of Lake Ontario. A photograph of the unused contaminated site is presented in Figure 4. The process usually followed in the development of such a site would have been to plan the chosen use of the property, evaluate site contamination issues, complete a human health and ecological risk assessment, then proceed with remediation, as required. Stakeholder approval would be solicited when the final plan for remediation and redevelopment was near completion. Such a process does not allow for participation and input by a large segment of the affected stakeholders. Consequently, “combative” behaviours between the community and real estate developer are commonplace.

160 *Brownfield Sites: Assessment, Rehabilitation and Development*

As with most Brownfield properties, the Toronto site is an integral part of a well-established community. As with most communities, issues related to the physical aspects of the development of the property and its integration into the surrounding community are most readily understood. In this case, the prime physical concerns focused on the possible interference with lake-views from existing homes, community access to the lakefront, public transportation, traffic congestion, availability of parkland, and impacts on already deficient day-care facilities and schools. Aside from these concerns, the community was generally happy with the idea of removing the derelict industrial buildings from their community. The impacts of these physical concerns, and their alternate approaches, were well understood by community members. There was a general awareness of the environmental contamination issues of the property, but the details of these issues were not well understood resulting in misperceptions and apprehension by community members.

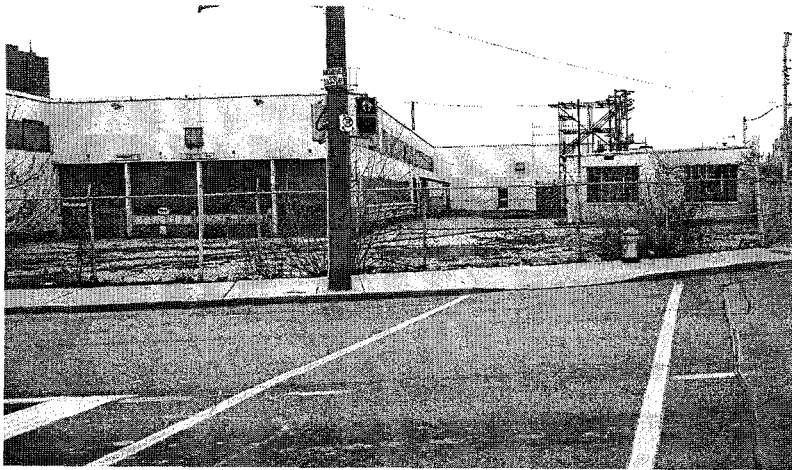


Figure 4: Unused Contaminated Site

Applying the Quality of Life process enabled participation of all the affected stakeholders (people in the community, the developer, local government and regulators) in the redevelopment plans from the very beginning. The process involved more than open communication between the affected stakeholders. The stakeholders actually participated in all decision-making of the redevelopment process, from planning the types and locations of buildings through landscaping/community art for the site, traffic flow/public transportation, day-care requirements and a variety of specific community amenities (up-grading lake access portals, various water recreation facilities, community playground equipment). The stakeholder communication, cooperation and mutual trust established by working together during the planning of the redevelopment of the site facilitated stakeholder understanding and participation in the planning of the environmental remediation of the site. An artist's depiction of the site after redevelopment is shown in Figure 5.

The application of the Quality of Life process to this Brownfield redevelopment project resulted in a win-win situation for all stakeholders; people in the community, regulators and the developer. The derelict industrial property is being replaced by a residential development that will improve the overall quality of life of the community. The developer is completing a profitable, successful real estate project, without the excessive delays and resulting expense typically associated with obtaining the various approvals required to proceed with such projects. In fact, the developer was awarded one of the first “Brownie Awards”, in recognition of “outstanding achievement in building and maintaining effective working partnerships with professionals, the local community and others involved in Brownfield redevelopment.” The historical environmental issues are being successfully resolved with the necessary due diligence and care, but without the fears and apprehensions that arise from uninformed perceptions that the general public often associate with such issues.

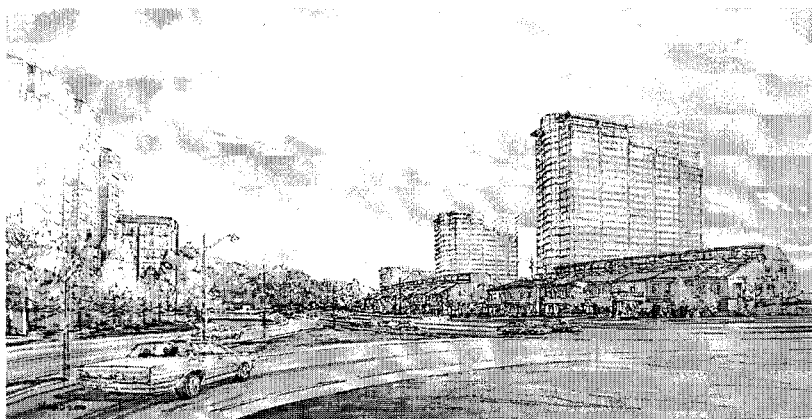


Figure 5: Artist's depiction of the site after redevelopment

References

- [1] Hanna, K. and C. Coussens. 2001. "Rebuilding the Unity of Health and the Environment - A New Vision of Environmental Health for the 21st Century." Workshop Summary for the Roundtable on Environmental Health Sciences, Research, and Medicine, Division of Health Sciences Policy, Institute of Medicine, National Academy Press, Washington, D.C.