

Socio-Economic Assessment Guidelines

February 2011

DISCLAIMER

These guidelines are not a legal authority and are not intended to provide legal advice. They are primarily meant to be a planning and implementation tool for Candidate Protected Area Working Groups (Working Groups) and the contractor selected to do the socio-economic assessment, which we call a “team” for the purpose of this document. They provide information only, and should not be used as a substitute for the relevant legislation or the policy dictates of the NWT-PAS or relevant regulations. These guidelines will be reviewed and revised from time to time by the NWT-PAS Steering Committee. The NWT-PAS will conform to all land claim agreements, Aboriginal/inherent and treaty rights, self-government agreements and overlap agreements. In the event of any unforeseen conflicts between the NWT-PAS and such agreements, the latter take precedence.

KEY TERMS

Weighting—specification of the relative importance of items, in this case values

Significance—a subjective judgment on the meaning of an impact

Alternative protection scenarios or protection scenarios—the alternatives include 100%, zero protection and some middle ground

Futures foregone—a future that will not occur if a development or protection decision is made

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1. INTRODUCTION

The Northwest Territories Protected Areas Strategy (NWT-PAS) outlines a series of eight steps for the planning and establishment of protected areas, one of which (Step 5) calls for a detailed evaluation of the area’s ecological, cultural and economic values. The evaluation of the economic values includes the assessment of the social and economic effects of establishing a protected area might have upon the local and nearby communities.

These guidelines outline the purpose, principles, objectives and process for the assessment of socio-economic effects. The socio-economic assessment will be carried out separately but it will build on the cultural, ecological, non-renewable and renewable resource assessments. Together, these assessments build the foundation of baseline data and identified values used to determine protection scenarios that should be considered and to help predict the effects that alternative protection scenarios may have on the human and biophysical environment. These studies and impact predictions are used in the values assessment facilitated by the Working Group and conducted with stakeholders. This assessment will help develop the recommendations on the following questions that are considered by Working Groups:

1. Whether an area is appropriate for any protected area designation;
2. What level of protection (i.e., type of protected area designation) is appropriate;
3. What geographic boundaries should be set for the protected area; and
4. Management systems within the protected area, and “pre-protection” strategic preparations among the potentially-affected communities and region(s), that should be put in place to maximize the meeting of the relevant protected area goals.

These guidelines are of particular importance to the Working Groups¹ and the socio-economic assessment team. The socio-economic guidelines will be made available to and should be used by:

- **Working Groups** to guide the issuance of Terms of Reference for the socio-economic assessment and other associated studies, to develop the protection scenarios for impact assessment and predictions, and to coordinate planning and guiding decision making and values discussions;
- **The Socio-economic assessment team** to guide their baseline conditions assessment and analysis of alternative protection scenarios;
- **Other assessment teams** to understand the boundaries of their assessments and relationships to other studies.

While the socio-economic assessment may require collection of data on many indicators about the social, economic, cultural, and environmental context, they also rely heavily on the results of the other assessments.² The Working Groups need to be familiar with the processes of other assessments, so they can make sure data is not collected twice.

¹ Working Groups are described by the PAS at <http://www.nwtpas.ca/about-workinggroups.asp>

² For details on the eight step process, go to <http://www.nwtpas.ca/about-process.asp>.

The importance of social, economic, and ecological values is stressed throughout the NWT-PAS³. Within the first goal it is stated that: *Northern residents know best which lands and waters are most critical to sustaining their land-based economies, values and cultures* (PAS Section A, 2.1 (a), page 7). Under the same goal, it is noted that: *Development will be permitted [except within core representative areas] when compatible with values being protected* (2.1(c)). Further, section 2.2 (k), page 10) on “economic opportunities” describes a principle that bears directly upon socio-economic values:

This principle suggests that the NWT-PAS (2.2 k) Recognize the potential contributions of renewable and non-renewable resource development to the economic and social well-being of northern residents. Wherever possible, protected areas proposals for core representative areas will give priority to areas of low commercial value.

The NWT-PAS thereby explicitly recognizes the need to balance conservation and economic development, while respecting the rights of communities and industries. It is the social, economic and environmental effects which could result from the establishment of any protected area designation, and the tradeoffs they entail, that are of particular interest and concern to residents, businesses and governments in the NWT.

The socio-economic assessment team may be involved in some or all of the assessment phases⁴ that end with the issuance of the Working Group’s recommendation on the recommended designation, boundaries and management plan for the Candidate Protected Area (see Figure 1).⁵ The socio-economic assessment team is primarily responsible, in most cases, for the conduct of Phases 1 and 3 under the guidance of the Working Group. Phase 2 and, especially, Phase 4, are primarily the responsibility of the Working Group to manage (See Section 6 for full review of phases). The socio-economic assessment described below follows a four phase approach, which build on one another:

Phase 1: Baseline conditions assessment: Collection and analysis of key baseline social, economic, cultural, and environmental indicators regarding the potentially affected communities, region and ecosystems. The environmental indicators section should at least documents the use and non-use values supported

³ The following references are from ***NWT PROTECTED AREAS STRATEGY: A Balanced Approach to Establishing Protected Areas in the Northwest Territories*** - <http://www.nwtpas.ca/documents/document-PASmanual.pdf>.

⁴ Phases may be separately contracted, at the discretion of the Contracting Agency.

⁵ It is by no means assured that the Socio-economic Assessment team will be the one either conducting the overarching scenario impact assessments or helping facilitate decision-making on preferable options, however. It is the responsibility of the Working Group to: a) identify the best suited consulting team, or a mixture of individual consultants from those teams, to conduct the Phase 4 Impact Predictions; and b) facilitate, with the assistance of the Sponsor Agency(ies), the public consultation and tradeoff analysis with all the available baseline and impact assessment data.

by the ecosystems of the candidate protected area. This work will build on the work done by the proponent community in Step 2 of the NWT-PAS process and is completed by the socio-economic assessment team under the guidance of the Working Group, based on the Phase 1 Terms of Reference. *Phase 1 should not begin until after at a minimum, all the Phase 1 studies for other resource assessments have been completed*, so the work can be based on the Working Group vision for the area.

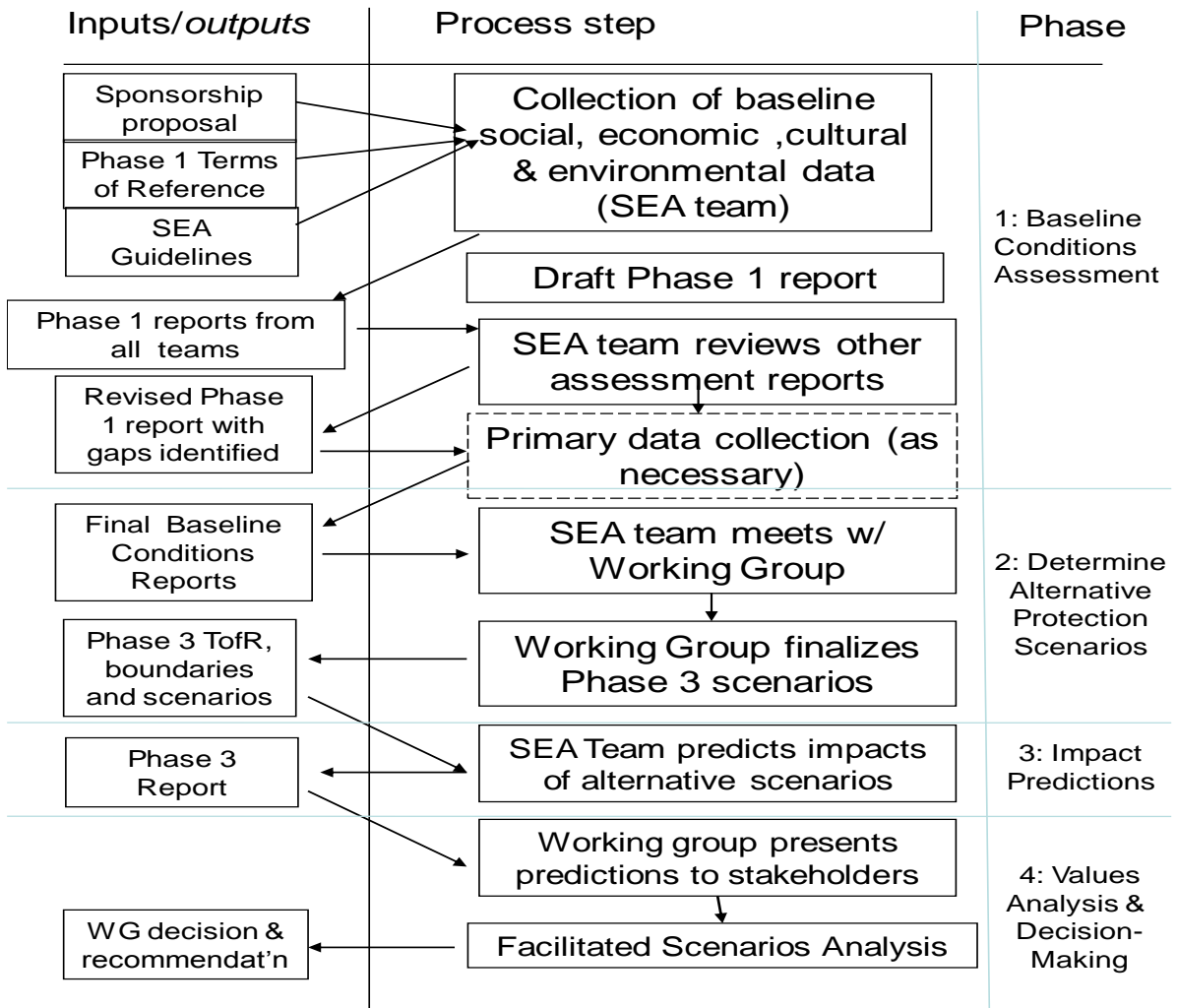
Phase 2: Scenario identification: The Working Group determines what protection scenarios need impact predictions. At least three options (status quo, full protection, and another or others as a compromise) will be identified. The socio-economic assessment team may play a supporting role upon request in this phase. Phase 2 should not begin until after all the other resource assessments have been completed.

Phase 3: Predict impacts: The socio-economic assessment team, under the guidance of the Working Group, conducts an impact assessment exercise to predict potential impact outcomes of different protection scenarios. This work will be informed by baseline socio-economic data and the results of the other resource assessments. This phase will produce a comprehensive analysis of potential economic, social, cultural and ecological impacts (See Appendix A for data needs) that may result from the designation of a geographic area for protection or under protective status.

Phase 4: Values analysis and decision-making: Value analysis and decision-making, where the Working Group (or a facilitator or the socio-economic team) presents the impact predictions to stakeholders and conducts a facilitated value analysis to identify the acceptable and preferable alternatives for future use of the lands. This final phase of the assessment goes beyond the limited mandate of a typical socio-economic assessment. The goals, key questions, methods and other key considerations for analysis are discussed in these guidelines.

Figure 1 outlines the main steps in the socio-economic assessment process, including main inputs and outputs. Working Group responsibilities for consultation and information collection and analysis throughout the evaluation phase, although not formally depicted, is the driver of the socio-economic assessment process. This ensures that all published and unpublished information is collected and that traditional and local knowledge is incorporated into the assessment process.

Figure 1: Socio-Economic Assessment Process



2. PURPOSE OF THE SOCIO-ECONOMIC ASSESSMENT PROCESS

To assess the social and economic effects of the creation of a Candidate Protected Area in order to contribute to informed decisions about what is the most beneficial outcome for the designation or non-designation of any Candidate Protected Area.

The socio-economic assessment of each Candidate Protected Area will be designed to identify and analyze

1. The **values** associated with different components or aspects of the human environment, such as recreational or spiritual values;

2. **Baseline conditions and trends** for identified social, economic, cultural and environmental indicators; and
3. **Potential impacts of alternative future protection scenarios** on these same indicators.

This is done for the candidate protected area (where possible, often incorporating findings from other assessment teams) and especially within the wider context of the human environment (i.e., among all stakeholders who in some way value the area).

3. OBJECTIVES OF THE SOCIO-ECONOMIC ASSESSMENT PROCESS

Each phase of the socio-economic assessment process is geared toward different objectives, which allow the Working Group to recommend a balance of values in the siting, boundaries, management plans, and designations of candidate protected areas. The following objectives are expanded on in Section 6, which outlines the individual objectives of all phases of the socio-economic assessment:

1. To improve the state of knowledge concerning social, economic and ecological baselines and values for the potentially affected area through a variety of social, economic and environmental indicators.
2. To identify gaps in the available social, economic, cultural, and ecological data available related to the impacts of establishing a protected area and where appropriate, fill these gaps using additional research.
3. To identify valued social, economic, cultural, and ecological components and associated indicators that should be considered when estimating impacts of different protection scenarios.
4. To contribute to the identification of protection scenarios for full impact assessments, based on values identified during the baseline conditions assessment.
5. To contribute to reasonable impact predictions for future scenarios by assessing potential changes on the human environment of protection, for the purposes of contributing to informed decision-making by the stakeholders, nominating groups, working groups and final decision-makers.

While some of these objectives go beyond the boundaries of the socio-economic assessment process and into the larger NWT-PAS decision-making process, the socio-economic assessment team is expected to be available in a support position until the Working Group makes its recommendation on the preferred protection status, boundaries and management plan for the Candidate Protected Area.

Working Groups may ask that the following *optional* tasks are done by the socio-economic assessment team:

- Conduct additional primary research to fill relevant gaps in understanding of the social, economic, cultural or ecological baseline conditions or values.
- Assist in the facilitation of public consultation at any stage of the process, including during the scenario selection.

- Conduct Cost-Benefit Analyses if required by the government decision-maker (e.g., the federal Treasury Board⁶).

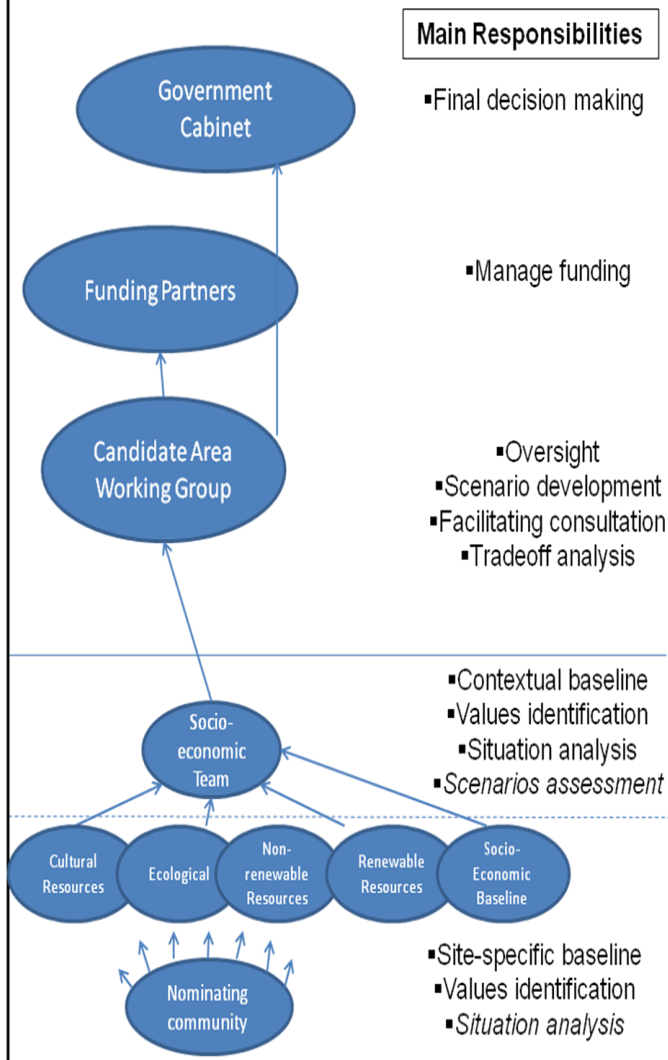
4. PRINCIPLES FOR THE WORKING GROUP TO CONSIDER WHEN UNDERTAKING SOCIO-ECONOMIC ASSESSMENT WORK

Note: These are to help guide the Working Group through the process of engaging and working with a consultant, and obtaining appropriate socio-economic information and analysis.

1. The Working Group will develop a work plan for the socio-economic assessment early in Step 5. The work plan may be changed as needed once contextual baseline data is collected and analyzed.
2. The terms of reference and work plan for the socio-economic assessment will be developed within the context of all assessment work plans to reduce duplication of effort or gaps in the analysis.
3. Where possible, the Working Group will facilitate meetings or other forms of feedback between the different assessment teams prior to finalizing any reports.
4. The identification of Phase 2 scenarios can only be completed once all the results from all the Assessment Teams are complete and have been considered. Phase 3 analysis must consider the results from all the Assessment Teams results.
5. The cost and complexity of each socio-economic assessment, and whether fieldwork is required, shall be determined on a case by case basis by the Working Group and Funding Partners. Socio-economic assessments shall make full use of published information as well as previously available traditional and local knowledge, prior to a decision being made on whether to engage in any primary research.
6. The Working Group will get input from its members into the indicators to use for the assessment, and what key valued component should be focused on.
7. The Working Group will ensure there is community consultation and involvement through consultation and review of products at each stage. Consultations on results to stakeholders shall be ongoing, timely, and in clear language, and stakeholder input will be considered prior to the finalization of all draft reports.

⁶ The federal Treasury Board is one ultimate decision body that requires a Cost Benefit Analysis (also called a Benefit Cost Analysis) prior to making its decision on the recommendations made by the Candidate Protected Area Working Group and forwarded on by the Sponsor Agency (in this case a federal government department). The Working Groups should consider the requirements of the Treasury Board, incorporate these requirements into their work plans, and whenever possible make sure they are covered by the assessments produced.

Figure 2: Key Actors in the NWT-PAS process



- The Working Group will encourage the continuous identification and description of stakeholder values during the socio-economic assessment while providing guidance to the socio-economic assessment team not to weight those values; this is the responsibility of the Working Group and stakeholders.
- The Working Groups will not delegate to consultants the responsibility or authority to choose alternative protection scenarios for the effects assessment phase, but may choose to ask for input from these groups prior to

- making their decisions.
- The protection scenario effects assessments will clearly identify all of the assumptions and rationales built into their effects modeling.
- No individual assessment team will assign significance to potential impacts identified during scenario analysis; that is the role of the Working Group through its internal analysis at the end and through guided public engagement/consultation and trade off analysis.⁷

⁷ This non-attribution of significance is especially important for two reasons: 1) significance is socially-defined by stakeholders, and the socio-economic team is an observer rather than a participant in that social system; and 2) direct quantitative comparisons of valued component tradeoffs may not be achievable, realistic or even appropriate (e.g. cultural/spiritual values cannot be reduced to economic dollar valuation).

5. CONTEXT: THE SOCIO-ECONOMIC ASSESSMENT WITHIN THE LARGER NWT-PAS PROCESS

This framework diagram (Figure 2) shows how the socio-economic assessment fits within the overall framework of assessments that are carried out in the NWT-PAS process, and the main responsibilities of different contributing parties.

The final decision-maker will be the level of government which the sponsor agency reports to. Each final decision-maker will have different expectations and policy requirements that the Candidate Area Working Group will have to consider both in advance of developing its work plans and when communicating its recommendations.⁸

Funding Partners are senior management representatives from the sponsoring agency with the authority to allocate resources and negotiate cost sharing. Funds and resources are allocated according to their decisions.

The **Working Group** is responsible for:

Phase 1: Baseline conditions assessment: oversight of all the data collection and analysis, usually through a Phase 1 Terms of Reference to retain a socio-economic impact assessment consultant.⁹ A Working Group team member may be chosen to conduct the data collection and analysis in cases where certain conditions are met.¹⁰

Phase 2: Scenario identification: Once the Working Group is confident in the baseline conditions assessment, and has results from all other assessments, it is then responsible to identify the alternative protection scenarios to be assessed. This will include 100% (i.e., the full area of interest), zero protection and usually one preferred option scenario that is different from the above. The Working Group may

⁸ See for example, the November 2007 Discussion Paper on *Government Policy Requirements for Final Establishment of Protected Areas: Strengthening Support Provided by the NWT-PAS*, by Terriplan Consultants, available at <http://www.nwtpas.ca/documents/document-2007-discussionpaper.pdf>.

⁹ 'Consultant' is used to indicate a single consultant or a consultant team.

¹⁰ A Group team member may be chosen to conduct the baseline and analysis in cases where all members of the Working Group agree and/or one or more of the following factors are present: where staff resources (likely from within the Sponsor Agency) are readily available, where the Candidate Protected Area is small in size, where the proposal is for relatively minor protection, where there is minimal alternative potential economic uses for the area and few or no identified futures foregone associated with the land designation change, where there is minimal public concern associated with the proposed designation, if the proponent community has done a credible job identifying the baseline conditions and area/contextual values, or where previous impact assessments readily identify all of the relevant information. The internal person or team chosen to conduct the socio-economic baseline and impact assessments should be familiar with impact assessment methodologies (see for example the Mackenzie Valley Review Board's *Socio-economic Impact Assessment Guidelines*, available at www.reviewboard.ca).

choose to obtain the advice of a socio-economic impact assessment consultant, but this is not required.

Phase 3: Predict impacts: Involves oversight of the impact assessment of the identified scenarios, usually through a Phase 3 Terms of Reference to hire a socio-economic impact assessment consultant/consultant team. Impacts assessed should include trade-offs of ecological goods and services supported by the candidate protected area in all the scenarios identified. A Working Group team member may be chosen to conduct the socio-economic impact assessment in cases where certain conditions are met (see Phase 1).

Phase 4: Decision-making: Once the Working Group is confident it has a comprehensive analysis of potential economic, social, cultural and ecological impacts (See Appendix A for data needs) that may result from the designation of a candidate protected area, the Working Group (or designate) presents the impact predictions to the public. This includes coordinating and reporting to communities, regional aboriginal organizations, the public, industry and environmental organizations. Once input is received, the Working Group makes its recommendations on protection designation, boundary and management for the Candidate Protected Area. The Working Group coordinates the preparation of a report that presents results and details the assessment process, the analysis of the potential tradeoffs between scenarios and the input received from stakeholders and the public.

6. OUTLINE OF THE SOCIO-ECONOMIC ASSESSMENT PROCESS

Values Identification - The socio-economic assessment team should identify values, who holds them, and describe them during each phase of assessment. It is *not* the job of the socio-economic assessment team to artificially attribute any weight or assign significance to values. Values should be sought through review of the protected areas submission, dialogue with Working Group members, primary research with select members of communities or stakeholders (only as needed), and public consultation efforts with stakeholders. Values identification will be effective if:

- 1) There are strong communication ties between the different assessment teams and the Working Group;
- 2) Public engagement and consultation efforts are focused on identifying, describing the components of different values associated with the Candidate Protected Area. The following public engagement opportunities run by the Working Group are advisable:
 - a. Public review of draft baseline data reports;
 - b. Public sessions identifying proposed alternative protection options prior to conducting effects assessments; and
 - c. Public sessions sharing impact predictions; and
 - d. Facilitated sessions to identify acceptable tradeoffs and acceptable/preferable land use designations for the area in question.

It is expected that a section on values will be included in each report provided by the socio-economic assessment team. As values are identified, they can be used to identify gaps in the data or key valued components that are not well documented.

Phase 1 Socio-economic Assessment – Baseline Conditions Assessment

Phase 1 requires the development of baseline socio-economic profiles for the communities and regions most likely impacted by the Candidate Protected Area designation. The main principle behind the collection of baseline data is that, before we can predict the effects of change, we need to understand where the potentially affected communities are at, how they compare to one another, and where they seem to be headed. The key questions that need to be answered during Phase 1 are:

- Are there differences between the communities or stakeholders in terms of valuing the Candidate Protected Area, or in how important the values associated with the protection of the Candidate Protected Area are to them?
- What is the current and trend status for relevant social, economic, cultural and ecological indicators among communities and regions potentially affected by change in the land status of the Candidate Protected Area in question?
- What is the current and historic role of the Candidate Protected Area itself in the socio-economic lives of potentially-affected communities? How important is this role?
- What are the use and non-use values supported by the ecosystems in the candidate protected area?
- Are there any gaps of high relevance in the available data to the protected area decision process that need to be filled with additional primary data collection? In other words, are there additional indicators of valued social, economic, cultural, and ecological components that require consideration prior to being able to make an informed decision on acceptable tradeoffs?

Steps in the Phase 1 baseline conditions assessment are as follows:

1. The Working Group will define an initial study area defined by the geographic distribution of potentially-affected communities and stakeholders and information needs. The study area shall usually coincide with the initial area of interest, as identified by the community and the sponsoring agency.
2. The Working Group will select baseline indicators to be evaluated, based on the most significant values initially identified in the candidate protected area (see Appendix B). There are many indicators that can be used in a socio-economic assessment, and the Working Group must specify the indicators to be considered in the Terms of Reference.

3. The Working Group will contract a socio-economic team through a Terms of Reference (unless the work is done in-house).
4. The socio-economic assessment team will compile, analyze and evaluate trends in social and economic data based on indicators provided by the Working Group, and identify values of stakeholders, relying on the previous documentation, particularly the package from the proponent communities and other key documents as identified by the Working Group.
5. The socio-economic assessment team will issue a draft report on social, economic and cultural conditions in and around the candidate protected area based on this preliminary data. The team should also list use and non-use values supported by the ecosystems of the candidate protected area. (Appendix C) This report will identify potential gaps in the existing socio-economic information base related to the impacts of establishing a protected area that may require additional research. Any additional information should be related to informing the
6. The Working Group may request that the socio-economic team collect additional baseline data using primary research, if required to address data gaps. However, the Working Group should first consider the significance of the data gap, and whether there is a reasonable pathway of change (i.e., avoid data collection that does not relate to a potential impact from the land status change). If new data collection is required, the socio-economic assessment team will prepare a research plan and budget for the Working Group and the Funding Partners. The Working Group will have the responsibility to provide contact names and phone numbers to the consultant so they can be in electronic and phone contact with members of the communities and sponsor agencies to gather and verify data, and identify the values to guide the evaluation of alternatives. This data will then be compiled and evaluated, and included in the final baseline conditions assessment report.
7. The socio-economic assessment team and the Working Group will consider all of the information available about the social, economic, ecological and cultural attributes of the Candidate Protected Area from the other assessment teams' draft or final reports prior to issuing its final report on the status of the existing environment and data adequacy.
8. The socio-economic assessment team produces and presents the final baseline data results and its analysis of the conditions and trends to the Working Group.

Phase 2 Socio-economic Assessment – Determine Scenarios for Protection

It is the responsibility of the Working Group in Phase 2 to determine scenarios for protection to consider in a formal impact (or effects) assessment. The Working Group may ask Working Group partners (such as the sponsoring agency) the socio-economic team, and possibly other assessment teams to provide suggestions on which scenarios to consider, but cannot delegate the responsibility of choosing the scenarios. The purpose of defining alternative protection scenarios is to have at least three different future scenarios which the socio-economic team can conduct a future effects assessment on and develop predictions of what a future with, without, or with

an altered Candidate Protected Area would most likely be like for the potentially-affected stakeholders.

The process for arriving at these alternative protection scenarios should be consultation among the Working Group and with key stakeholders. Discussions held by sponsor agency representatives in communities using maps of the region may help to identify these boundaries. The following issues may be consulted on when designing boundaries:

- 1) The physical extent of the boundaries of the Candidate Protected Area
- 2) The need for any sort of additional protection
- 3) The specific final protection designation for the Candidate Protected Area (rarely altered)
- 4) The specific management systems to be used within the Candidate Protected Area (more likely considered during Phases 3 and 4)

At least three alternatives are to be considered:

- 1) the 100% protection option (full candidate area with full surface and subsurface protection)
- 2) “preferred (or alternative) scenario(s)” (could include a reduced area of full s/s protection; zoning of portions; full area as surface only; other options)
- 3) the status quo (current regulatory regime only)

Some considerations for the Working Group when developing these assessment scenarios include:

- The non-renewable resource assessment provides useful spatial data, which focuses on the identification of non-renewable resource potential within the Candidate Protected Area.
- The NWT-PAS system is built on the premise that *core representative areas* for each type of natural area in the NWT should be effectively protected. Any proposed boundary reduction discussion should keep this principle in mind, and consider whether there may be:
 - Appropriate buffer zones between the core representative area and activities that may adversely impact upon it.
 - Sufficient land set aside to maintain the values proposed for initial protection. There may be a minimum threshold beyond which conservation objectives cannot be achieved.
 - Lands with third party interests or existing land designations (such as special infrastructure). The key question is: will there be fragmentation?
- There may be constraints on the willingness or legal/regulatory capacity of the Sponsor Agency to support alterations to the proposed designation of an area. As well, the proposed designation may bring with it minimum management requirements. The Sponsor Agency will make these limits

- known to its fellow Working Group members¹¹ in advance of decisions being made on designation alternatives.
- There should always be a minimum of three alternative protection scenarios considered. Assessing only the “go” vs. “no go” option will not allow for compromises in management plans and land usage to effectively emerge.
 - Each protection scenario should specify in as much detail as possible which areas within the Candidate Protected Area are being considered for removal. Different parts will have different potential economic, social, cultural and ecological value associated with them. Thus, the Working Group cannot just give a blanket percentage (e.g., 75% of initial candidate area) as this is not detailed enough for an informed analysis. The specific guidance to the assessment team should also include a location map illustrating lands that would be exempted, proposed designation and associated rules and regulations, and any set management principles that would require adoption under that scenario.
 - The factors behind the decision to choose specific scenarios should be explained and available publicly.

Phase 3 Socio-economic Assessment – Predict Impacts

This phase considers what impacts protecting an area, either in whole or in part, will have. The socio-economic assessment team (and/or other assessment teams¹²) will be provided with the chosen alternative protection scenarios and asked to predict the impacts of each across all identified valued components.¹³ The predictions of the assessment team are used as inputs for the Working Group and stakeholders to make their Phase 4 judgments on the acceptability of alternatives. Responsibilities of the assessment team include:

1. Consider together with the Working Group the chosen scenarios for protection and development.
2. Review the identified values with the Working Group, and determine any need to supplement the identification of values through discussion with stakeholders.

¹¹ For a list of 14 identified NWT-PAS protected areas designations, see *NWT PROTECTED AREAS STRATEGY: A Balanced Approach to Establishing Protected Areas in the Northwest Territories* - <http://www.nwtpas.ca/documents/document-PASmanual.pdf>.

¹² While it is assumed that the socio-economic assessment team will play the key role in this impact assessment phase, the Working Groups should carefully consider whether the team in question has enough expertise to identify potential effects beyond the consideration of the human environment when determining the required composition of what is called from here on in “effects assessment” or merely “assessment” team.

¹³ Given that prediction of future impact outcomes is an inexact science, the Working Group may desire to have some literature review conducted (by the socio-economic assessment or another team of advisors) on habitat and other values integrity effects of alterations to land management boundaries of protected areas in other jurisdictions, prior to determining appropriate protection scenarios for further study.

3. Identify expected effects of changes in resource use within the candidate protected area, including a description of the uncertainty associated with the effect and all assumptions underlying the prediction, for all scenarios that are being described.
4. Identify a list of criteria for determining the significance of expected effects during Phase 4 (e.g., Appendix D). These criteria must be accepted by the Working Group, and should be based in the values that have been identified throughout the process to date.
5. For each effect, identify the group(s) and/or the economic, social, or environmental sectors of the area that will be affected (positive or negative or both), and describe and quantify the expected impact.
6. Review and compare the expected effects of each protection scenario in a written report that is available in plain language.
7. *Upon request from the Working Group only*, suggest boundary modifications and area inclusions or exclusions giving due regard to the expected impacts, and/or recommend different regulations to apply to the candidate area (i.e. different designation), recommend alternative management strategies for the protected area, and/or recommend plans for mitigation of adverse impacts on the human environment.
8. Report results to the Working Group and be available to report results to affected communities along with the Working Group if requested.

It is important to remember the assessment team is *not* responsible for significance determination. While the assessment team can provide data and analysis on potential magnitude, extent, and nature of impact, these alone do not define significance. The assessment team will be invited to identify potential “criteria for determining significance” over and above those noted in Appendix D.

Socio-economic Assessment Phase 4 – Values Analysis and Decision Making

In Phase 4, there will be a facilitated public review of the scenarios and their impacts. It is the Working Group that is ultimately responsible for significance determinations on protection scenarios. This phase revisits the main question underlying NWT-PAS decisions: What is the best (most valuable) future use of this piece of land? Associated sub-questions include:

- What are the values associated with this piece of land and by whom?
- What land uses do the values support? How strongly are these values held?
- Are there trade-offs between competing values that are acceptable to all for benefit maximization for the greatest number?

While Appendix C (sample significance criteria) requires some consideration by the socio-economic assessment team in order to assess the effects of the change scenarios, the Working Group is charged with significance assessment. The process hangs on the values of the people affected. This means that significance assessment must be a public activity based in consultation. It relies on the public

assessment of the acceptability of change. Finally, significance must be determined through a comparative weighting of essentially incomparable values (e.g., cultural importance vs. economic development potential) and cannot be a solely quantitative exercise. It requires analysis of tradeoffs of different alternatives, not one stand alone option.

Phase 4 involves the comparative evaluation of the three chosen scenarios. It may be done through a structured exercise. Values may be formally expressed and recorded in statements in rows of a table. The three land use scenarios can be described in columns of the same table. Participants in consultation sessions can then think about how each protection scenario satisfies each value statement. In this way, the three land use scenarios are compared based on each value that is important. A big picture will also emerge of how each land use scenario measures up in terms of satisfying all of the value statements. Another possibility is to ask participants in consultation sessions to answer questions, such as those included in Appendix E.

Appendix A: Information to be drawn from other resource assessment studies

Spatial data is needed wherever possible to inform the development of scenarios and the analyses.

| Subject Area/Source | Type of Information |
|---|--|
| Renewable Resources <i>within the Candidate Protected Area</i> / Renewable Resources Assessment | <ul style="list-style-type: none"> - major and minor uses - commercial values of production - employment and income by use and area - traditional land uses - outfitting activities - economic impacts - characteristics of revenue flows - business/industry ownership - associated economic values* |
| Non-renewable Resources <i>within the Candidate Protected Area</i> / Non-renewable Resources Assessment | <ul style="list-style-type: none"> - major and minor uses - commercial values of production - employment and income by use - economic impacts - characteristics of revenue flows - business/industry ownership |
| Cultural Values/Assets <i>within the Candidate Protected Area</i> / Cultural Resources Assessment | <ul style="list-style-type: none"> - traditional land uses - traditional and cultural practices - associated economic values* |
| Ecological Features <i>within the candidate protected area</i> / Ecological Assessment | <ul style="list-style-type: none"> - inventory of important and distinguishing ecological features - importance of features - tourism/recreation capacity - ecological functions/ecosystem services - current area uses/users - associated economic values* |

Appendix B: Worksheet for Identifying Socio-economic Indicators for study

NOTE: The Working Group must select among these based on the most significant values at play in the potentially protected area. Also, the Working Group must ensure that there is no overlap of data collected by the different resource assessments.

| Area | Indicator | Interpretation | Source | Recommend for Socio-Economic study? |
|------------|---|--|-------------------------------------|-------------------------------------|
| Population | Current population | Size of population that might be impacted by possible protection or development | NWT Bureau of Statistics and Census | |
| | Projection to 2025 | Projection of in-migration may be important for assessing effects of change scenarios | NWT Bureau of Statistics and Census | |
| | Population by ethnicity | Impact equity will be relevant on minority groups or on dominant aboriginal group. | NWT Bureau of Statistics and Census | |
| | Population by age group | Impact equity will be relevant on youth or elders. | NWT Bureau of Statistics and Census | |
| | Population by gender | Impact equity will be relevant on women. | NWT Bureau of Statistics and Census | |
| Education | % of population aged 15 and over with high school or more | Ability for people to take advantage of economic opportunities | NWT Bureau of Statistics | |
| Culture | % of Aboriginal population aged 15+ who speak an aboriginal language | Language retention is a central component of cultural identity. It may also have implications for management practices (e.g., maintenance of place names and transmission of information in indigenous language) | NWT Bureau of Statistics | |
| | % of households where most or all of the meat and fish consumed is harvested in the NWT | Harvesting is a central activity for the transmission of knowledge through generations, as well as an economic indicator (e.g., fur sales). This will also be reviewed in | NWT Bureau of Statistics | |

Table 1 Baseline information typically required in a socio-economic assessment (from AMEC 2008, Gibson 2009a and b, and Steering Committee)

| Area | Indicator | Interpretation | Source | Recommend for Socio-Economic study? |
|----------------------|---|---|---|-------------------------------------|
| | | the renewable resource survey, and is relevant to both studies. | | |
| | % of population aged 15+ years involved harvesting activity | This includes hunting, trapping fishing and gathering medicinal and food or plants. This data is also broken out by gender and age, which can be relevant to understanding impact effect. | NWT Bureau of Statistics (last survey 2002) | |
| Labour force | Employment by sector | Relevant for people's ability to engage in new markets, under a development scenario. | NWT Bureau of Statistics | |
| | Employment rate | Current employment rate can inform scenarios. | NWT Bureau of Statistics | |
| | Employment rate by gender | Effect equity is of concern. | NWT Bureau of Statistics | |
| | Employment rate by ethnicity | Effect equity is of concern. | NWT Bureau of Statistics | |
| | Participation rate | Effect equity is of concern. | NWT Bureau of Statistics | |
| | Participation rate by ethnicity and gender | Effect equity is of concern. | NWT Bureau of Statistics | |
| Income | Price index, food (compared to Yellowknife) | Cost of living. Use for scenario development (considering tourism or development). | NWT Bureau of Statistics | |
| | Price index, cost of living (compared to Yellowknife) | Cost of living. Use for scenario development (considering tourism or development). | NWT Bureau of Statistics | |
| | Average employment income | Use for scenario development. | NWT Bureau of Statistics | |
| | % of families earning less than \$25,000 | Identifies poverty, level of current economic development, and room for improvement. | NWT Bureau of Statistics | |
| | Average monthly income support cases per 1,000 people | Identifies poverty, level of current economic development, and room for improvement. | NWT Bureau of Statistics | |
| Health and wellbeing | % of households in core need | Relates to poverty and economic wellbeing | NWT Bureau of Statistics | |
| | % households in need of major | Relates to poverty and economic wellbeing | NWT Bureau of Statistics | |

| Table 1 Baseline information typically required in a socio-economic assessment (from AMEC 2008, Gibson 2009a and b, and Steering Committee) | | | | |
|--|--|--|---|--|
| Area | Indicator | Interpretation | Source | Recommend for Socio-Economic study? |
| | repair | | | |
| | % households with crowding | Relates to poverty and economic wellbeing | NWT Bureau of Statistics | |
| | Rate of violent crime per 1,000 | Relates to poverty and social wellbeing | NWT Bureau of Statistics | |
| | Rate of property crimes per 1,000 people | Relates to poverty and social wellbeing | NWT Bureau of Statistics | |
| Transportation and infrastructure | Description of existing businesses | Economic wellbeing | NWT Approved Business Listings http://www.bipregistry.nt.ca/vbpmenu.asp?~Page=vbpdemn1 | |
| | All weather and seasonal roads | Feasibility for protection or economic options (e.g., development options) | | |
| | Shipping routes | Feasibility for protection or economic options (e.g., development options) | | |
| | Air transportation | Feasibility for protection or economic options (e.g., development options) | | |
| | Schools and educational capacity | Economic and social wellbeing | | |
| | Communications | Economic and social wellbeing | | |
| | Electricity generation and capacity | Economic and social wellbeing | | |
| | Water supply | Economic and social wellbeing | | |
| | Tourism | Number of visitors and reason for visits | NWT ITI | |
| | Municipal services | Economic and social wellbeing | | |
| | Community recreation facilities | Economic and social wellbeing | | |
| | Health care facilities | Economic and social wellbeing | | |
| | Policing and judicial services | Economic and social wellbeing | | |

Appendix C: Worksheet for Identifying Ecological Goods and Services for study

NOTE: The Working Group must select among these based on the most significant values at play in the potentially protected area. Also, the Working Group must ensure that there is no overlap of data collected by the different resource assessments. The categories suggested below are consistent with the Millennium Ecosystem Assessment categories and those used in The Economics of Ecosystems and Biodiversity (TEEB) reports, which may be referenced for additional guidance.

| Area | Indicator | Interpretation | Source (e.g. www.evri.ca) | Recommend for Socio-Economic study? |
|---------------------------------------|--|--|---|-------------------------------------|
| Habitat for Species / Species at risk | Current population (estimates may be based on average densities) | Size of population that might be impacted by possible protection or development | GNWT | |
| Provisioning Services | Food plants | Quantity of harvested berries, mushrooms that may constitute subsistence food | | |
| | Medicinal plants | Quantity of harvested plants that may be used for medicinal purposes | | |
| | Genetic resources | Genes and genetic information used for animal breeding, plant improvement, and biotechnology | | |
| | Water | Volume of water used for drinking, irrigation and other uses | | |
| | Hunting and fishing (subsistence) | Quantity of fishes and animals hunted for subsistence | | |
| | Hunting and fishing (recreational) | Quantity of fishes and animals hunted for recreation | | |
| | Wood and fuel | Quantity of wood and other materials harvested for combustion | | |
| | Building materials | Quantity of natural materials harvested for building structures, furniture, tools, etc. | | |
| | Ornamental materials | Quantity of natural materials used for ornamental purposes | | |
| Regulating Services | Carbon storage (above-ground and | Stored biomass that may be impacted by | | |

| Table 2: Baseline ecological information typically required in a socio-economic assessment | | | | |
|---|--|--|----------------------------------|--|
| Area | Indicator | Interpretation | Source (e.g. www.evri.ca) | Recommend for Socio-Economic study? |
| | below-ground biomass, soil organic matter) | possible development | | |
| | Water regulation and maintenance | Water quality and flow regulation provided by wetlands, drainage basins, etc. | | |
| | Air quality regulation | Maintenance of air quality | | |
| Existence | Species / Species at risk | Existence value (to relevant population) of species / species at risk occurring in the CPA | | |
| | Candidate protected area | Existence value (to relevant population) of a protected area | | |

Appendix D: Potential criteria for determining significance

| SIGNIFICANCE CRITERIA | SAMPLE CONSIDERATIONS |
|---|--|
| Nature of impact and nature of the value being impacted | <p>What will the impact be caused by?</p> <p>What is the pathway for the impact?</p> <p>What values will be impacted by the change?</p> <p>How vulnerable or resilient to change (e.g., are they rare, common) are the physical or socio-cultural attributes associated with the value in question?</p> |
| Magnitude | <p>What is the magnitude or degree of change the impact will likely cause? Is the expected change large and rapid, or slow and, or, minor?</p> <p>How much additional magnitude will the impact have compared to expected background changes? For example, are there existing high pressures for change occurring that put the value at risk of extreme impact?</p> <p>Will any identified thresholds of manageable or acceptable change (as expressed in plans, strategies, and goal statements) be breached? Does the change predicted exceed the existing capacity of the potentially-affected community to absorb it with current resources?</p> |
| Trade-offs between beneficial and adverse impacts | <p>Are there any beneficial impacts to offset the adverse impacts under consideration?</p> <p>All significance determinations, especially when comparing multiple scenarios, need to consider the degree to which some adverse change can be accommodated if desired beneficial change is to occur.</p> |
| Capacity to manage | <p>Is the predicted impact manageable for those responsible for protecting that element of the environment?</p> <p>Has effective mitigation been committed to or merely identified during the assessment?</p> <p>How much will it cost to mitigate the impact? Who pays? Is the net benefit of mitigation more than the benefit of avoiding the impact altogether?</p> <p>What is the capacity for government, communities, and the developer to address impact?</p> |
| Duration and frequency of occurrence | <p>Is the impact associated with shorter-term impacts or (often more significant) longer-term impacts?</p> <p>Will there be wide fluctuations in impact directionality that disrupt the community over time (i.e. boom-and-bust periods)?</p> |
| Geographic area and population distribution | <p>How many communities and stakeholders groups will be impacted?</p> <p>How extensive is the geographical range of the impact?</p> <p>Does the magnitude diminish across space?</p> <p>Are there particularly sensitive areas that might be impacted?</p> |
| Likelihood of occurrence | <p>Is it likely that the impact will occur?</p> <p>How was this likelihood measured?</p> <p>What level of certainty is there in this prediction?</p> <p>How certain are the predictions of severity and reversibility or manageability, given mitigation proposals in place?</p> |
| Impact equity (who wins and who loses?) | <p>Are certain stakeholders more impacted than others?</p> <p>Are the more impacted groups more vulnerable to change?</p> <p>A principle of maximizing the efficacy of the chosen alternative is that the benefits to those who gain from the decision must be greater than the losses to those who are harmed by it.</p> <p>The number of people impacted is not the only measure of significance of an impact; extremely adverse impacts on individuals merit attention and mitigation as well.</p> |
| Public concern | <p>Is there a high level of public concern associated with the proposed change?</p> <p>Perceived risk, as expressed by community members, can be as important in significance determinations as quantitative predictions. It is critical that public concerns be reported, and the reasons behind them included as parameters of the</p> |

| | |
|-----------------------------------|--|
| | effects assessment (so that they can either be confirmed as reasonable or the concerns underlying them allayed by communication). |
| Cumulative effects considerations | <p>Is the identified impact a “stand alone” one, or will it lead to additional, potentially cascading impacts or combine with other existing impacts to become a cumulative impact?</p> <p>What is the existing sensitivity to change of the values likely to be impacted?</p> <p>A broad understanding of the local and regional environmental context is required to answer these questions.</p> |

Appendix E: Sample tradeoffs questions for consultation sessions

NOTE: This is example of how tradeoffs can be assessed, asking questions or using values statements.

| COLUMN WITH EITHER QUESTIONS OR VALUE STATEMENTS OF STAKEHOLDERS | 100 % PROTECTION | SOME PROTECTION | NO PROTECTION |
|---|------------------|-----------------|---------------|
| Are there things you did before that you won't be able to now? | | | |
| Are there possible futures that must be totally forgone because of it? | | | |
| Will the values associated with place X change, how, and is that for the better or worse? | | | |
| Are there possible chain reactions from the individual change that may contribute to larger changes at a systemic level (cumulative effects context)? | | | |
| Is the benefit likely to be gained worth more than the existing benefit lost? | | | |
| What level of certainty is there around the proposed benefit (which is highly uncertain) and is its potential magnitude great enough to trade off the known current benefits from the land use? | | | |
| Who will win and who | | | |

| | | | |
|---|--|--|--|
| will lose from the change? | | | |
| Is the change acceptable and, more importantly, preferable, to all alternatives? To whom, and based on what values? | | | |
| Are there alternatives to the specific proposal that may reduce adverse changes and increase benefits and the equity of their distribution? | | | |