Proponent's Guide to

Information Requirements for

Executive Committee Project Proposal

Submissions

YESAB

Yukon Environmental and Socio-economic Assessment Board

v 2005.11

TABLE OF CONTENTS

LIST OF FIGURES

PREFACE

THE ACT

The *Yukon Environmental and Socio-economic Assessment Act* (*YESAA*) is the legal basis for the assessment of projects[1] in Yukon, on all federal, territorial, and First Nation lands. YESAA outlines the responsibilities, requirements, and procedures for the environmental and socio-economic assessment of projects for which federal, territorial, or First Nation governments have Decision Body powers.

The *Yukon Environmental and Socio-economic Assessment Board* (YESAB) is an independent arms-length entity, separate from all Decision Bodies. Its role under YESAA is to administer the assessment process of Designated Offices (DOs), the Executive Committee of the Board, and Panels of the Board. In some cases, members of the Board will be directly involved in assessments, particularly for Executive Committee screenings and Panel reviews.

PURPOSE

These guidelines were developed to provide project proponents of Executive Committee-level projects with an outline of general information requirements necessary to complete a standardized Executive Committee-level project proposal under *YESAA*. These guidelines may be revised periodically, as necessary, to reflect changes in assessment best practice or legislation. Project proposals are expected to fulfill the requirements of these guidelines prior to submission to the Executive Committee.

INTENDED AUDIENCE

This guideline document is intended primarily for proponents of Executive Committee-level projects who intend to submit a project proposal under *YESAA*, and secondarily as a reference guide for decision bodies and interested persons participating in the assessment of these projects.

[1] Definition of "Project": An activity that is subject to assessment under section 47 or 48 and is not exempt from assessment under section 49 of *YESAA.*

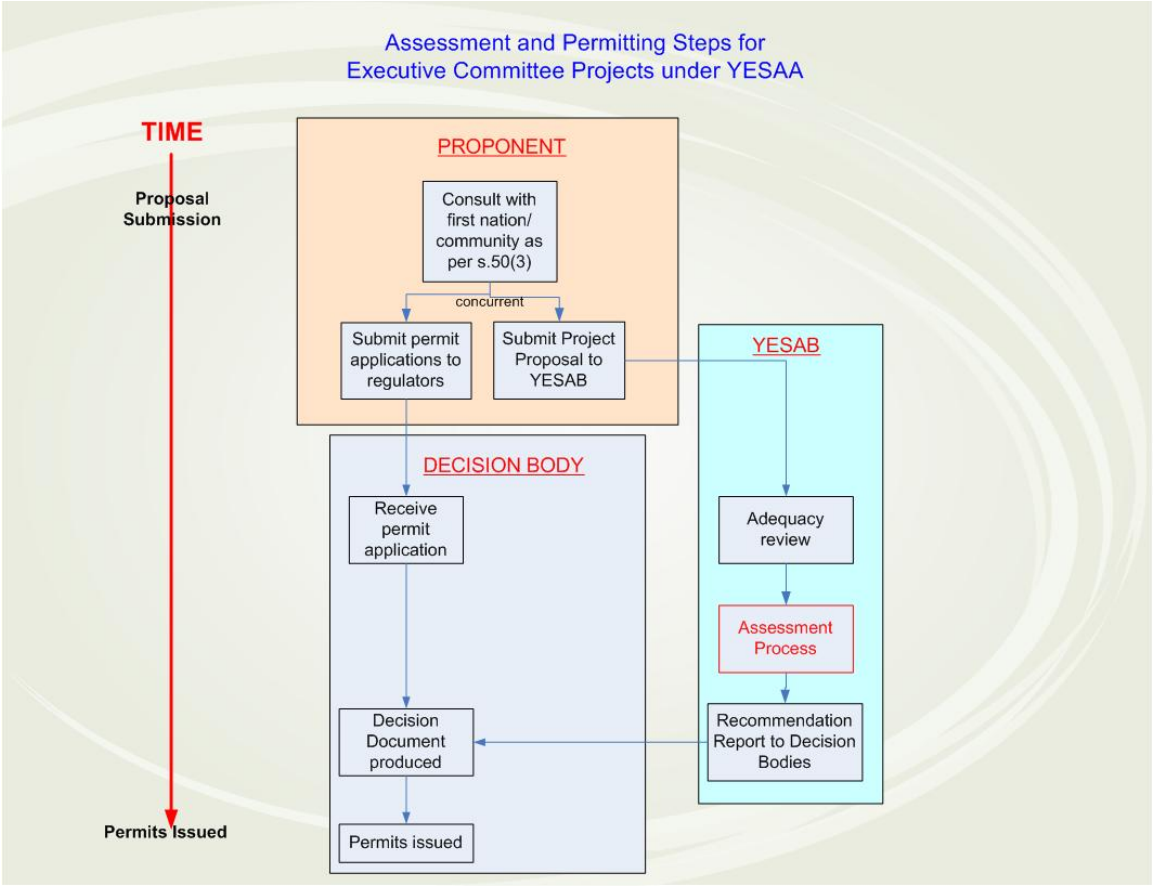
DOCUMENT ORGANIZATION

These guidelines provide generic information requirements for the submission of Executive Committee-level project proposals. Appendices are provided for specific sector types (forestry, quartz mining, and linear projects), and outline specific information requirements to be included in these sorts of proposals, in addition to those specified within the generic guidelines. YESAB intends to continue to work towards additional specific guidance for activities in other sectors.

EXECUTIVE COMMITTEE PROCESS STEPS

Figure 1 provides an overview of the major steps that occur from the submission of an Executive Committee project proposal to the issuance of authorizations. In referencing Figure 1 it should be noted that at several stages there are opportunities for input and comment from Decision Bodies and interested persons to the YESAB with respect to the proposed project.

Figure 1 Executive Committee Project Assessment and Authorization Process Steps



ASSESSMENT PROCESS

Submitting a project proposal to the *YESAB* is the first step in having a proposed project assessed. Subsequent to the submission, a number of steps will occur before the *YESAB* is able to provide recommendations to the relevant decision body/bodies for the project to proceed. These steps are detailed in Figure 2.

Figure 2a Executive Committee Assessment Process

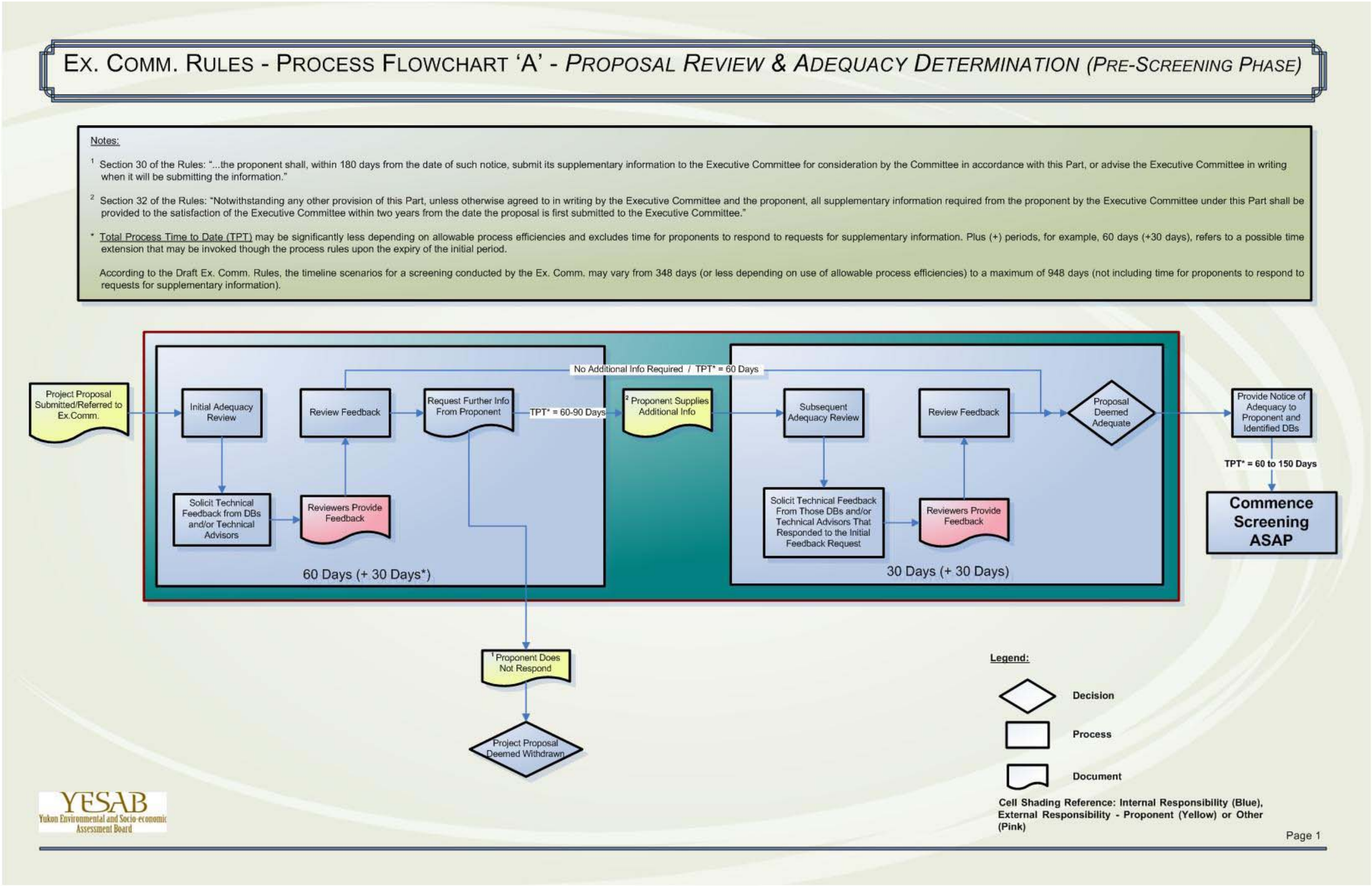
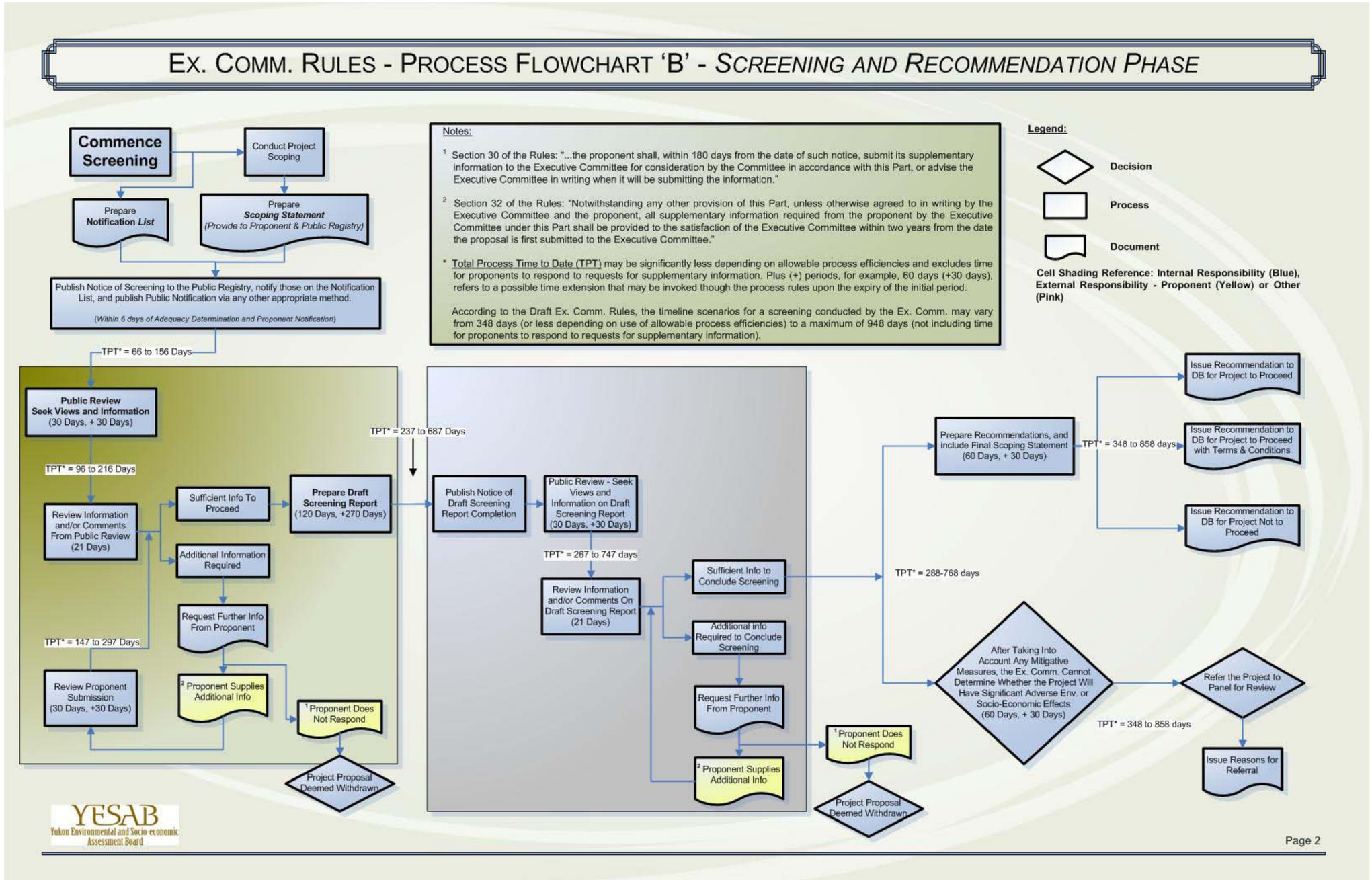


Figure 2b Executive Committee Assessment Process continued



INFORMATION GAPS AND UNCERTAINTY

In the course of preparing the project proposal there may be gaps in the environmental baseline data and information that need to be filled. This work should commence early in the project planning stages to ensure a complete project proposal and a timely assessment. The assessors will assist, and relevant government/First Nation agencies can provide direction in recommending available information sources and appropriate survey methods.

A study program should outline the components, data collection methods, proposed review and analysis techniques, and implementation schedule for the work. Discussions with expert agencies/branches of government regarding the review and preparations will help ensure that the methods proposed and data collected fulfill the goals of the study. Traditional and local area knowledge can be sought from local First Nations, residents and land users.

- ❑ Identify any existing environmental data gaps relevant to the proposed project.
- ❑ Develop and present a study program to address identified environmental data gaps, or demonstrate how the project has modified its approach in a precautionary manner, in response to identified environmental data gaps.

SUPPORTING INFORMATION

Include a list of references used in the proposal, and any supporting data, reports, or other information used for documentation or support. This information should appear as Appendices.

Provide photo records of any sample and monitoring sites.

PROCESS CONSIDERATIONS

- Prior to developing a project proposal, the project proponent should discuss with Executive Committee staff whether the project is reviewable under the Yukon Environmental and Socio-economic Assessment Act (YESAA).

- Meeting with expected government regulators and expert departments will provide the proponent with an opportunity to find out what specific information and methodologies may likely be required, or what issues will likely be raised. This information can then be taken into account in the preparation of the project proposal.

- The proponent is encouraged to develop a sound understanding of First Nations issues and expectations with respect to the incorporation of traditional knowledge. A discussion and reference guide to the incorporation of traditional knowledge in assessments is available on the Yukon Environmental and Socio-Economic Assessment Board (YESAB) website: www.yesab.ca.

- The proponent is encouraged to undertake preliminary investigations to identify existing conditions in the project and surrounding area. This may serve to identify baseline information and flag potential issues for consideration in the proposal.

- The proponent must recognize their duty to consult First Nations and community residents prior to submitting their project proposal.

PART 1 GENERIC INFORMATION REQUIREMENTS FOR ALL EXECUTIVE COMMITTEE SCREENINGS

The following sections provide detail to “Schedule A” in the Executive Committee Rules. Schedule A is a suggested table of contents for project proposals submitted to the Executive Committee. The information requirements for each section of Schedule A are presented below.

1.0 PROJECT INTRODUCTION AND OVERVIEW

1.1 EXECUTIVE SUMMARY

- ❑ Provide a brief introduction to the project, proponent, and environmental setting, including unique environmental features or resources.
- ❑ Provide information on the current status of the project.
- ❑ Briefly present a non-technical description of key project components, including activities, spatial area of effect, schedule (pre-construction, construction, operation, and decommissioning), and timing constraints
- ❑ Briefly describe the implementation plan for the project, including route/area selection and general layout (including issues that may affect the proponent's ability to access any portion of the project area).
- ❑ Identify the extent to which climate change considerations have been incorporated into project planning, if applicable.
- ❑ Identify any unique plans, policies, special designations or other arrangements that affect land use in the project area.
- ❑ Summarize the key potential environmental and socio-economic effects of the project, and proposed mitigation measures and strategies.
- ❑ Provide an overview of consultation efforts with stakeholders, communities, and First Nations, including information provided to these groups.
- ❑ Describe any uncertainties or public concerns.
- ❑ Provide a summary of the analysis of significance and likelihood of adverse environmental and socio-economic effects subsequent to the application of proposed mitigation.

1.2 PROPONENT INFORMATION

- ❑ Identify the project proponent, as well as the corporate and project management structure.
- ❑ Identify the primary contact for the project during the screening and their contact information.
- ❑ If the primary contact is an individual or company other than the proponent, provide a contact number for the proponent.
- ❑ Briefly summarize the proponent's project-related experience, as it applies to the proposed project.

1.3 PROJECT BACKGROUND

- ❑ Describe the history of the project and the current status. Provide information on any linkages or interdependence between the proposed project and any other related projects or activities (existing or proposed) in the area.
- ❑ Briefly identify any relevant meetings or discussions held with interested persons and regulators.

1.4 PROJECT PURPOSE

- ❑ Indicate the rationale for the project (e.g. market demand, quality, quantity, and location of the resources).
- ❑ Describe the specific project objectives.

1.5 REQUIRED AUTHORIZATIONS AND REGULATORY APPROVALS

- ❑ Identify the *YESAA* requirements[2] for a screening that are relevant to the project proposed.
- ❑ Identify the relevant provision(s) from the *Assessable Activities, Exceptions and Executive Committee Projects Regulations* (Project Regulations) identifying the project.
- ❑ Identify required approvals/permits for the project as well as applicable legislation and regulations.

2.0 FIRST NATIONS/ COMMUNITY CONSULTATION

Section 50(3) of the Act requires that:

"*Before submitting a proposal to the Executive Committee, the proponent of a project shall consult any first nation in whose territory, or the residents of any community in which, the project will be located or might have significant environmental or socio-economic effects."*

This duty to consult shall be exercised:

[2]The circumstance as defined by s. 47 of the Act, and the project as defined by the project regulations.

1. By providing notice to the party to be consulted:

    a. notice of the matter in sufficient form and detail to allow the party to prepare its views on the matter;

    b. a reasonable period for the party to prepare its views, and

    c. an opportunity to present its views to the party having the duty to consult; and

2. By considering fully and fairly any views so presented.

With respect to consultation under 50(3), the project proposal shall:

- ❑ Provide a contact/distribution list of the parties who have been provided notice of the project by the proponent.
- ❑ Provide a detailed description of the methods of consultation used to identify and inform potentially affected First Nations and community residents, including the form and detail of the information provided to the consulted parties,
- ❑ Describe the format (e.g. community meetings, open houses, copies of the project proposal provided to individuals) provided to those consulted, to allow the presentation of their views to the proponent,
- ❑ State the time allotted those consulted, to allow them to prepare their views on the proposal, including a rationale for the allotted time,
- ❑ Identify any interests/issues that were raised, and the individual or group that raised them. Outline similarities or differences in presented views, and,
- ❑ Provide a detailed description of how the views and information presented to the proponent, including traditional knowledge if provided, were considered in preparation of the project proposal.

3.0 PROJECT LOCATION

3.1 GEOGRAPHICAL LOCATION

- ❑ Using topographic maps of appropriate scale (generally 1:30,000 to 1:50,000), or GPS coordinates, provide details on the location of the proposed project boundaries and proposed routes.
- ❑ Indicate the distance to the nearest community/communities by road, water and air.
- ❑ Briefly summarize the project area in relation to drainage basins, topography and ecoregions.
- ❑ Provide digital GIS files that describe the project boundaries in ESRI shapefile or other standardized and compatible format

- ❑ Provide standardized GIS shapefiles or other compatible format for any other unique project features, if available.
- ❑ Ensure all shapefiles provided contain projection information.

3.1.1 Legal Land Description

- ❑ If available, provide a legal land description of the project area.

3.2 LAND TENURE

- ❑ Identify land ownership and tenure of the project area, and all other areas through which access, or some other use, is required. Discuss any potential issues or implications.
- ❑ Identify any leases, reserves, management areas, and protected areas within and adjacent to the proposed project.
- ❑ Identify registered trapping concessions that overlap with the project area, as well as any traplines or cabins.
- ❑ Identify any big game outfitters, water license holders, and mineral claim holders within or adjacent to the proposed project area.
- ❑ Identify any other formalized First Nation rights to access land and resources, specifically:
  - o Existing agreements and claims, including land claims, aboriginal rights for hunting and harvesting rights, resource access rights. and,
  - o Co-management agreements.
- ❑ For the project area, describe land tenure and designation (leases, ownership, mining claims, settlement land, parks, land use plans, special management zones, etc.), nearest residences and communities, land uses (existing and adjacent), environmental constraints, and any other important features.
- ❑ Identify all parks and protected areas within, or adjacent to, the proposed project area, and any potential implications for the proposed project.
- ❑ Identify any plans, policies, special designations or other arrangements that affect or may affect land use in, or adjacent to, the project area.

Guidance

Contact with regional and local land managers and First Nations may assist in the identification of unique features or designations in the project area.

3.3 TRADITIONAL TERRITORY

- ❑ Identify the Yukon First Nation traditional territory/territories within which the proposed project will be located.

3.4 YUKON LAND USE PLANNING REGION

- ❑ Identify the land use planning region within which the proposed project is located.
- ❑ If a regional land use plan is in effect, describe the designation of the project area, and discuss any implications for the proponent's ability to undertake the project.

Guidance

Contact with the Yukon Land Use Planning Council can confirm the status of any land use planning processes in the project area.

3.5 CONSISTENCY WITH OTHER PLANS

- ❑ Describe the degree to which the proposed project is consistent with the objectives, strategies, and prescriptions presented in wildlife plans, forest management plans, land use plans, resource management plans, etc., specific to the project area, as applicable.

4.0 DESCRIPTION OF EXISTING ENVIRONMENTAL AND SOCIO-ECONOMIC CONDITIONS

4.1 ENVIRONMENTAL CONDITIONS

4.1.1 Scope of Project/Study Area

- ❑ Specify the project/study area (spatial and temporal scopes) used in identifying existing environmental and socio-economic conditions.

Guidance

The study area should extend beyond the immediate footprint of the project activities, where applicable. For efficiency, it is advised that this area be consistent with the area to be analyzed in the cumulative effects analysis.

4.1.2 General Physiography

- ❑ Describe the regional setting of the project and immediate area, including terrain features such as mountains, rivers, lakes, watersheds, and unique landforms.
- ❑ Provide general information on regional vegetation and wildlife including ecoregion. and,
- ❑ Identify any uncommon or notable natural resource features (e.g. significant old growth stands, large wetland complexes) within, or directly adjacent to, the proposed project area.

4.1.3 Surficial Geology/Soils

- ❑ For areas within the footprint of the project and related activities, identify soil structure and stability as it relates to compaction and erosion.
- ❑ For surficial materials intended for use as construction or foundation materials for structures, provide a description of: grain size, permeability, moisture content and density, and any other relevant physical, geochemical, and geotechnical properties.
- ❑ Include details on terrain mapping, soil classification, and erosion potential. Descriptions should include consideration of attributes that influence or facilitate runoff, such as infiltration rates, percolation, slope, aspect, vegetation, and presence of permafrost.

- ❑ For permafrost areas within the project area, characterize the spatial extent, temperature, moisture content, thickness, thaw stability (and criteria used to assess), and stability of material.
- ❑ If the project is anticipated to alter the surficial geology, provide pre-disturbance surficial geology information for the purpose of eventual decommissioning/ reclamation of the project.

4.1.4 Terrain Hazards

- ❑ Characterize any slides, mudflows, potential subsidence, timber blowdown areas, avalanche zones, and flood hazards.
- ❑ For projects that involve the construction of physical structures (particularly retention structures), provide information on area seismicity and earthquake potential (maximum credible earthquake, maximum ground accelerations associated with 1:475 and 1:1000 year return earthquakes)[3].

4.1.5 Climate

- ❑ Provide a description of general climatic conditions in the project area for one annual cycle (minimum) in the drainage. Include monthly: extremes, temperature means, precipitation, and snow depth. Provide information on aspect, and if applicable, prevalent wind direction and velocity.
- ❑ For information provided above, identify the regional meteorological stations used (or other appropriate sources), including location and length of record. and
- ❑ Consider the inclusion of information that pertains to anticipated changes in climate and local weather patterns (seasonality and long-term changes).

4.1.6 Air Quality

- ❑ For projects anticipated to release air emissions (e.g. through burning debris, power generation, etc.), provide available background information on existing ambient conditions and any current emissions in the project area, as well as the downwind conditions in populated areas. and,
- ❑ Provide information about air circulation patterns in and around the project area, and any weather or seasonally induced changes that may affect air quality.

4.1.7 Noise Levels

- ❑ Describe the existing noise conditions in the project area, outlining existing sources and seasonal variations.

[3] Refer to the Canadian Dam Safety Guidelines and other codes relevant to site infrastructure.

4.1.8 Vegetation

- ❑ Provide information on land cover types, forest cover and site quality, including stand types and characteristics, and approximate volume/density estimates. Detail information on study methodology.
- ❑ Document plant communities to the species level, on the sites that may be disturbed as a result of development, including site characteristics, to facilitate the suitable selection of reclamation seed/stock.
- ❑ Describe vegetation and vegetation assemblages including any identified rare, sensitive, and/or endangered species and ecological reserves. Description should be of sufficient quality that a key habitat assessment for important wildlife species in the area can be conducted.
- ❑ Identify any wetlands in the project area (bogs, fens, marshes, swamps, and shallow waters).

4.1.9 Wildlife

- ❑ Describe abundance and distribution characteristics of major wildlife species within the project area and vicinity. Include information on mammals, amphibians, birds, and reptiles (including rare/endangered species).
- ❑ Describe the habitat classifications used in the project area, and any implications concerning the distribution and abundance of habitat types that may influence the project.
- ❑ Provide a map showing the spatial arrangement of habitats of special interest, if applicable.
- ❑ Identify and describe transportation corridors and critical, key, and sensitive habitats. Include periods of habitat use in the project area and vicinity.
- ❑ Identify any species listed on the COSEWIC (Committee on the Status of Endangered Wildlife in Canada) and Species at Risk lists.
- ❑ Describe any special management requirements due to vulnerability, threatened, or endangered status.
- ❑ Identify and describe any ongoing studies and/or monitoring programs with respect to wildlife in the project area and vicinity.

Guidance

Contact the Government of Yukon, Dept. of Environment, Fish and Wildlife Branch, at 867-667-5715, for information on wildlife populations and issues relevant to the project/study area.

4.1.10 Water Resources

4.1.10.1 *Hydrology*

A detailed description and characterization of the project's watersheds, watercourses and drainages is required. Hydrology and water quality data collected by government agencies at various sites within the general region may aid in the interpretation of site specific data and provide a foundation for comparisons to be made.

- ❑ Provide a description of the project area in relation to drainage basins.
- ❑ Identify and describe the waterbodies, watercourses, and drainages within or near the project area, including watershed boundaries, drainage areas, connectivity to adjacent watercourses, and drainage patterns (temporal and spatial).
- ❑ For identified watercourses potentially affected by the project, provide estimates of peak, minimum, seasonal, and annual average flows.
- ❑ Evaluate the relative contributions of surface and groundwater flows and potential for changes related to the project.
- ❑ For water crossings, describe:
  - o Mean, minimum and maximum monthly and annual flows.
  - o Mean annual hydrographs, and hydrographs of maximum and minimum events.
  - o Flood frequency analysis for high and low flow events.
  - o Potential for ice jamming and flooding (including ice formation, melt patterns, and flood zones).
  - o Bed and channel stability at the crossing area.
  - o Rationale for choice of crossing location(s).
- ❑ For projects involving in-water structures, diversions, or water utilization, summarize hydrometric data for the project area, including an assessment of the data with respect to station length, record length, and physical basin parameters.

4.1.10.2 *Water Quality*

For projects with activities or structures within or adjacent to waterbodies/watercourses that plan to uptake water that are anticipated to result in increased surficial runoff, or with water/effluent discharge:

- ❑ Describe the baseline water quality in the project area including such parameters as total suspended solids, turbidity, pH, conductivity, dissolved oxygen and temperature.
- ❑ Describe any seasonal variability and range or water quality variables focusing on water characteristics that may be modified by the project, during any phase.

- ❑ Provide a photo record of any sample sites.

4.1.10.3 *Hydrogeology*

- ❑ Provide a description of the geological elements and processes that affect the hydrogeology of the project area watersheds, with supporting documentation.

Guidance

Contact the Government of Yukon, Dept. of Environment, Environmental Programs, at 867-667-5683, for water resources information.

4.1.11 Aquatic Ecosystems and Resources

4.1.11.1 *Fish*

For each drainage potentially affected by the project:

- ❑ Provide details on fish presence, abundance, and spatial/temporal distribution.
- ❑ Document critical and sensitive habitats, including relevant spawning, over-wintering and migration periods and locations, rare and/or endangered species and habitats.
- ❑ Provide details on fisheries resources and aquatic habitat at all stream crossings.
- ❑ Provide stream classifications for the water courses in the project area.
- ❑ Provide 1:50,000 map(s) identifying/indicating fisheries resource(s).
- ❑ Include information and baseline data on study methods, riparian fish habitat surveys, fish sampling, and results of other fieldwork within the potentially affected drainages.

Guidance

For information on fisheries resources, contact: Fisheries & Oceans Canada. Phone 867-393-6730, Fax 867-393-6783; and the Government of Yukon, Dept. of Environment, Fisheries. Phone 867-667-5117, Fax 867-393-6263.

4.2 SOCIO-ECONOMIC CONDITIONS

The *Yukon Environmental and Socio-Economic Assessment Act (YESAA)*[4] requires the consideration of socio-economic components that may be affected by the project. To facilitate this consideration, the Executive Committee submission should provide a description of the economic and social setting within the project area. Information should focus on providing a background on individuals, families, communities, businesses, and/or governments potentially affected as a result of the project activities.

4.2.1 Community/ Project Area Information

- ❑ Identify the community/communities potentially affected by the project through direct environmental or socio-economic change. Include communities whose residents commonly and regularly use areas potentially affected by the project.
- ❑ Describe existing infrastructure (roads, trails, power lines, telecommunication and electrical lines, habitations, cabins, camps, campgrounds, other facilities, and other structures) of the nearest community and/or surrounding area relevant to, or potentially influenced by, the project.
- ❑ Identify recreational or leisure opportunities/amenities, within or adjacent to the potentially affected communities.
- ❑ Include capacities and current operating levels of infrastructure in the community and/or surrounding area that may be potentially affected by the project (e.g. roads, schools, health centers).
- ❑ Describe the population distribution in the area, and identify the number of individuals living adjacent to the project area;
- ❑ Provide general information on the following components of the socio-economic system:
  - o Traditional and/or wage economies
  - o businesses and governments;
  - o quality of life
  - o language
  - o cultural practices
  - o public health
  - o family life and structure
  - o personal security/safety

[4] Section 42(c).

- employment levels (including consideration of non-wage economies).

- ❑ Include information that can be used to describe the anticipated capacity of the community or surrounding areas to provide adequately trained personnel to the project, if applicable.

Guidance

Contact the relevant Government of Yukon or Municipal department/branch for related infrastructure information.

Proponents can also refer to the YESAB *Guide for Socio-economic Effects Assessments* (section 6.3).

4.2.2 Land and Resource Use

- ❑ Provide information on the historic and current land use and resource use for traditional purposes by First Nation persons, as well as commercial and recreational use by First Nations and non-First Nations persons, including but not limited to:
  - Recreational activities (fishing, hunting, gathering, hiking) and routes providing access to those areas (i.e. trails, watercourses).
  - Registered trapping concession holders affected by the project. Discuss the frequency, intensity, and location of trapping activities in the area.
  - Timber harvesting activities in the area such as cut blocks or access roads, permitted or otherwise.
  - Agriculture/farming activities.
  - Cultural, subsistence, and commercial harvesting and fishing activities.
  - Commercial wilderness activities (including guided fishing, outfitting, hunting, etc., as applicable).
  - Mineral exploration and/or extraction.
  - Oil and gas activity.

- ❑ Describe any history and/or experience that the local community may have had with projects similar to the one proposed.

5.0 PROJECT DESCRIPTION

In this section, detailed information should be provided on all phases of the project (construction, operation, modification, decommissioning, abandonment) and its components.

5.1 PROJECT IDENTIFICATION

5.1.1 Principal Project

- ❑ Provide an overview of the principal project, and related components and activities.

5.1.2 Accessory Activities

- ❑ Provide an overview of any other activities that are likely to be undertaken in relation to the activities identified in 5.1.1.

Guidance

Accessory projects and activities are defined as the activities that must be undertaken for the principal project (the main project) to proceed. Accessory projects are defined by applying the criteria of interdependence and linkage.

INTERDEPENDENCE: If the principal project could not proceed without the undertaking of another physical work or activity, then that other physical work or activity may be considered as a component of the scoped project (e.g. a bridge that must be built to access a timber block).

LINKAGE: If the decision to undertake a principal project makes the decision to undertake another physical work or activity inevitable, then that other physical work or activity may be considered as a component of the scoped project (e.g. the construction of a hydro-electric dam makes the construction of transmission lines inevitable).

5.2 ALTERNATIVES AND CHOSEN APPROACH

5.2.1 Alternatives to the Project

- ❑ Present a brief overview of potential alternatives to the proposed project, and the rationale for the selected option, including a discussion on whether/why the selected option is the best way to fulfill the objectives of the project.

5.2.2 Alternative Means of Carrying Out the Project

- ❑ Identify feasible alternative means considered for the project or for components of the project (e.g. alternative sites, routes, waste disposal, sources of product and supply, mitigation, and alternative methods of construction, operation, decommissioning).

5.2.3 Comparison and Selection of Alternatives

- ❑ Indicate the methodologies used for the selection of alternatives. Selection procedures/constraints should include engineering and cost, biophysical, land use, and socio-economic or cultural/heritage concerns.
- ❑ Present a comparison of the alternatives considered, based upon the above criteria and state the preferred alternative(s), with a rationale for selection, as well as any reasons for excluding particular options.

Guidance

"Alternatives to" the project are defined as functionally different ways to meet the project need and achieve the project purpose.

"Alternative means" are defined as the various technically and economically feasible ways that the project could be implemented or carried out. This could include, for example, alternative locations, routes and methods of development, implementation and mitigation.

5.3 TECHNOLOGIES

- ❑ Provide detailed information on the degree to which technologies being proposed are proven to be viable in northern environments, including any uncertainties. Include plans for proving the feasibility of the technologies, as appropriate.

5.4 PROJECT PHASES AND SCHEDULING

5.4.1 Project Schedule

- ❑ Describe the anticipated schedule of the project, including realistic timelines for the project by phase. Include possible future phases of development, if applicable (e.g. ongoing exploration, expansion). Discussion should focus on those activities likely to have the greatest environmental or socio-economic effects, and highlight situations where converging activities create the potential for greater effects.

5.4.2 Construction Phase

For this phase of the project:

- ❑ Detail (with map(s) and supporting description) each of the project's major components and activities for this phase of the project (construction, operation, decommissioning).
- ❑ Provide designs for all engineered components of the project.
- ❑ Outline any applicable design standards or parameters, along with the results of any investigations to establish site conditions (e.g. seismicity, geotechnical parameters, hydrology, site class, soil moisture, etc.).
- ❑ Provide location, size, and boundaries of the project components;
- ❑ Provide, for this phase, an overview of project facilities, infrastructure, and activities that are proposed to be undertaken accessory to the principal project, including but not limited to:
  - o site preparation (e.g. right-of-way clearing)
  - o earthworks (e.g. borrow pits, quarries, stream crossings, cut and fill activities)
  - o material lay-down (e.g. staging areas, timber landings)
  - o storage and disposal areas
  - o blasting
  - o drilling
  - o accessory timber cutting
  - o stockpiling and salvaging of soils and overburden material
  - o water usage
  - o water treatment
  - o camps and associated facilities
  - o power generation
- ❑ Provide details on waste handling plans and facilities/structures/sites (include waste types, volumes, handling, and disposal methods) for lubricants, garbage, sewage

wastes, waste water, brush and vegetation, overburden, waste rock, cuttings, and tailings, etc., as applicable.

- ❑ Describe the energy requirements and the energy sources and quantities that will be used to meet those requirements. Outline any plans for energy conservation.
- ❑ Describe quality control/assurance plans or features.
- ❑ Provide information on workforce requirements including location, magnitude, schedule, and infrastructure/support (camp/housing facilities on and off-site).
- ❑ Describe construction techniques/technologies, and describe key project and design features, including rationale for chosen designs.
- ❑ Provide details on proposed sediment control measures.
- ❑ Outline activities related to the use, transportation, storage, and handling of supplies, especially fuels and hazardous materials to, and on site.
- ❑ Reference risk management plans, contingency responses, or approaches to address accidents, malfunctions, and emergency response measures specific to this phase of the project, as applicable.
- ❑ Outline any environmental monitoring plans that will be in place during this phase of the project.
- ❑ Describe any timber salvage requirements resulting from discussions with the Yukon Forest Management Branch . These discussions should occur early in the planning stages of any project in forested areas.

5.4.2.1 *Access and Transportation*

For this phase:

- ❑ Provide information on site access and transportation methods, including:
  - o Existing and new access overland (condition and location).
  - o Water or airborne access.
  - o Staging and landing areas, and,
  - o Size and type of vehicles, and frequency of use.
- ❑ Indicate whether access is seasonal or permanent, and frequency of use during each stage of the project.
- ❑ Identify the responsible parties for operation and maintenance of the access.
- ❑ Provide detailed mapping and designs describing any stream crossings.
- ❑ Describe supply transportation requirements to the project area. Indicate quantity and types of supplies hauled. Outline special handling and loading and emergency plans for hazardous materials.
- ❑ Map access road and airstrip locations and indicate any stream crossings.
- ❑ Describe site access management systems that will be established in each phase of the project.

5.4.2.2 *Fuel, Hazardous Materials, and Explosives Management*

For this phase:

- ❑ Describe the location and characteristics of fuel and explosive storage and associated infrastructure.
- ❑ Describe handling and containment methods for the transportation, handling, storage, use, and disposal of fuel and hazardous materials.
- ❑ Describe any blasting requirements for the project, including explosive types, consumption, and supply.
- ❑ Provide details on any explosives-related infrastructure including transportation, handling, storage, and disposal.

5.4.3 Operation/Modification Phase

For this phase:

- ❑ Detail (with map(s) and supporting description) each of the project's major components and activities, for this phase of the project (construction, operation, decommissioning).
- ❑ Provide designs for all engineered components of the project
- ❑ Outline any applicable design standards or parameters, along with the results of any investigations to establish site conditions (e.g. seismicity, geotechnical parameters, hydrology, site class, soil moisture, etc.).
- ❑ Provide location, size, and boundaries of the project components.
- ❑ Provide, for this phase, an overview of project facilities, infrastructure, and activities that are proposed to be undertaken accessory to the principal project, including but not limited to:
  - o site preparation (e.g. right-of-way clearing)
  - o earthworks (e.g. borrow pits, quarries, stream crossings, cut and fill activities)
  - o material lay-down (e.g. staging areas, timber landings)
  - o storage and disposal areas
  - o blasting
  - o drilling
  - o accessory timber cutting
  - o stockpiling and salvaging of soils and overburden material
  - o water usage
  - o water treatment
  - o camps and associated facilities

- power generation

- ❑ Provide details on waste handling plans and facilities/structures/sites (include waste types, volumes, handling, and disposal methods) for lubricants, garbage, sewage wastes, waste water, brush and vegetation, overburden, waste rock, cuttings, and tailings, etc., as applicable.
- ❑ Describe the energy requirements for the project and the energy sources and quantities that will be used to meet those requirements. Outline any plans for energy conservation.
- ❑ Provide information on workforce requirements including location, magnitude, schedule, and infrastructure/support (camp/housing facilities on and off-site).
- ❑ Describe on-site transportation systems and communications systems.
- ❑ Outline activities related to the use, transportation, storage, and handling of supplies, especially fuels and hazardous materials to, and on, the site.
- ❑ Describe energy supply systems (including energy conservation and heat recovery measures) for this phase, if applicable.
- ❑ Describe water management systems, including diversion, withdrawal, drainage operations, storm-water management, sediment control, and impoundments. A water management plan should be developed for the project.
- ❑ Discuss all effluents and emissions released including process by-products and waste products, and outline plans for waste control, treatment and management strategies.
- ❑ Reference risk management approaches including accidents, malfunctions and emergency response plans that will be in place during operations and temporary shutdowns.
- ❑ Reference environmental protection, contingency, and monitoring plans for the operations phase. These should include environmental attributes that may be impacted by the ongoing operations of the project such as affected water resources, aquatic resources, wildlife, and physical structures monitoring programs.
- ❑ Describe the types, volumes, handling, storage, and disposal of all toxic substances.

5.4.3.1 *Access and Transportation*

For this phase:

- ❑ Provide information on site access and transportation methods, including
  - Existing and new access overland (condition and location);
  - Water or airborne access;
  - Staging and landing areas; and,
  - Size and type of vehicles, and frequency of use.
- ❑ Indicate whether access is seasonal or permanent, and the frequency of use during each stage of the project.
- ❑ Identify the parties responsible for operation and maintenance of the access.

- ❑ Provide detailed mapping and designs describing any stream crossings.
- ❑ Describe supply transportation requirements to the project area. Indicate the quantity and types of supplies hauled. Outline special handling and loading and emergency plans for hazardous materials.
- ❑ Map access road and airstrip locations and indicate any stream crossings.
- ❑ Describe site access management systems that will be established in each phase of the project.

5.4.3.2 *Fuel, Hazardous Materials, and Explosives Management*

For this phase:

- ❑ Describe the location and characteristics of fuel and explosive storage and associated infrastructure.
- ❑ Describe handling and containment methods for the transportation, handling, storage, use, and disposal of fuel and hazardous materials.
- ❑ Describe any blasting requirements for the project, including explosive types, consumption, and supply.
- ❑ Provide details on any explosives-related infrastructure including transportation, handling, storage, and disposal.

5.4.4 Decommissioning / Abandonment / Reclamation Phase

- ❑ Detail (with map(s) and supporting description) each of the project's major components and activities for this phase of the project (construction, operation, decommissioning).
- ❑ Provide designs for all engineered components of the project
- ❑ Outline any applicable design standards or parameters, along with the results of any investigations to establish site conditions (e.g. seismicity, geotechnical parameters, hydrology, site class, soil moisture, etc.).
- ❑ Provide location, size, and boundaries of the project components.
- ❑ Provide, for this phase, an overview of project facilities, infrastructure, and activities that are proposed to be undertaken accessory to the principal project, including but not limited to:
  - o site preparation
  - o earthworks
  - o material lay-down (e.g. staging areas)
  - o storage and disposal areas
  - o blasting
  - o salvaging and re-use of soils and overburden material
  - o water usage

- water treatment
- camps and associated facilities
- power generation

- ❑ Provide details on waste handling plans and facilities/structures/sites (include waste types, volumes, handling, and disposal methods) for lubricants, garbage, sewage wastes, waste water, brush and vegetation, overburden, waste rock, cuttings, and tailings, etc., as applicable.
- ❑ Describe the energy requirements for the project and the energy sources and quantities that will be used to meet those requirements. Outline any plans for energy conservation.
- ❑ Describe decommissioning/reclamation objectives, including where applicable: design criteria for structures to be left in place, and factors influencing the implementation of decommissioning/reclamation activities.
- ❑ Describe any decommissioning related studies and activities to be carried out, including objectives, methodology, reporting and schedule.
- ❑ Describe to the extent possible the specific activities of the decommissioning/ reclamation phase, including information on location, magnitude, schedule, and workforce requirements.
- ❑ Provide details on the plans for monitoring, assessment, and maintenance during this phase.

5.4.4.1 *Access and Transportation*

For this phase:

- ❑ Provide information on site access and transportation methods, including:
  - Existing and new access overland (condition and location)
  - Water or airborne access;
  - Staging and landing areas; and,
  - Size and type of vehicles, and frequency of use.
- ❑ Indicate whether access is seasonal or permanent and frequency of use during each stage of the project.
- ❑ Identify land tenure and the parties responsible for operation and maintenance of the access.
- ❑ Provide detailed mapping and designs describing any stream crossings.
- ❑ Describe supply transportation requirements to the project area. Indicate the quantity and types of supplies hauled. Outline special handling and loading and emergency plans for hazardous materials.
- ❑ Map access road and airstrip locations and indicate any stream crossings.
- ❑ Describe site access management systems that will be established in each phase of the project.

5.4.4.2 *Fuel, Hazardous Materials, and Explosives Management*

For this phase:

- ❑ Describe the location and characteristics of fuel and explosive storage and associated infrastructure.
- ❑ Describe handling and containment methods for the transportation, handling, storage, use, and disposal of fuel and hazardous materials.
- ❑ Provide details on any explosives-related infrastructure including transportation, handling, storage, and disposal.

6.0 ENVIRONMENTAL AND SOCIO-ECONOMIC EFFECTS ASSESSMENT

6.1 VALUES INFORMATION

The maps described in the subsequent sections may be combined, where appropriate. The intent of this section is to help the assessor identify the spatial and temporal distribution of valued components on the landscape. Maps and other forms of information are useful tools in this regard, as described below.

6.1.1 Environmental Values

- ❑ To the extent possible, provide a map delineating environmental values identified within and adjacent to the project area.
- ❑ Provide a list of sources for the information on the values map(s), including identification of the methodologies used for data collection, and identification of those components for which data is recognized as being incomplete or missing.

6.1.2 Physical Socio-economic Values

- ❑ To the extent possible, provide a map delineating non-confidential areas of socio-economic value identified in the project area.
- ❑ Provide a list of sources for the information on the values map(s), including identification of the methodologies used for data collection, and identification of those subjects for which data is recognized as being incomplete or missing;
- ❑ Identify non-confidential places with heritage importance.

6.1.3 Non-Physical Socio-economic Values

- ❑ Include any measurements and information available that may provide an indication of community values or interests relevant to the project. This may include, but is not limited to, information related to:
  - o health
  - o education
  - o crime/safety
  - o land and resource use

6.2 VALUED ENVIRONMENTAL AND SOCIO-ECONOMIC COMPONENTS

Based upon an understanding of interests and values determined in section 2.0, and of the activities of the project and its environmental and socio-economic setting, identify the valued environmental and socio-economic components that are relevant to the project and the assessment.

Valued Environmental and Socio-economic Components (VCs) are the elements of the environmental and/or socio-economic systems valued for environmental, scientific, social, aesthetic, or cultural reasons.[5] Selecting project-specific VCs is essential for focusing assessments, and for determining the significance of effects.

The objective behind a VC-based approach is to ensure to the extent possible that, at a minimum, there will be no significant adverse effects on the major values identified on the landscape. If these values are chosen properly, appropriate mitigation of potential effects on these components may also mitigate adverse effects on other ecological or social components of concern, thereby minimizing the likelihood of significant effects from a project.

VCs can typically be grouped under one of the following headings:

1. Focal Species
2. Representation
3. Special Elements
4. Ecological Processes
5. First Nation/ Resident/Community Values or Concerns

[5] VCs (Valued Environmental & Socio-economic Components) are also sometimes referred to as VECCs (Valued Environmental & Cultural Components)

6.2.1 Identification and Consideration of Issues

Although no process for identifying VCs has been formalized, these components are typically identified through consultation with relevant government departments and agencies, stakeholders, local First Nations, and other interested parties. Examples of information sources that may be drawn upon to identify VCs include: baseline research, literature review, species vulnerability reports, and community consultation.

The specific VCs relevant to each project will differ. To help proponents conduct a comprehensive and systematic examination of potential VCs, a list of general headings, along with brief descriptions, is provided below. This list is not necessarily comprehensive, and should be modified as appropriate to the proposed project.

6.2.1.1 *Hydrology and Aquatic Resources*

Hydrology and aquatic resources quality are typically highly valued by stakeholders, especially where water is used by local people, or where fish and wildlife health or populations may be affected. The potential to affect water resources should be thoroughly evaluated by the proponent prior to initiating any activities that may affect these resources. Because of the high level of importance typically afforded to water resources, this component should be given consideration as a potential VC whenever a project is in the vicinity and has the potential to affect water bodies, watercourses, and groundwater.

6.2.1.2 *Vegetation*

Vegetation is valued for many reasons, including but not limited to aesthetics, wildlife habitat, various uses as a renewable resource, and diverse ecological processes. Where valued, the loss of vegetative cover can be a concern in Yukon regions, since recovery is slow due to short growing seasons and low annual production of nutrients. Vegetation, ecological processes and functions, as well as composition should be considered as potential VCs wherever these may be affected.

6.2.1.3 *Wildlife*

Wildlife species are valued as important ecological components, for aesthetic and cultural reasons, and as a food source, among other reasons. The extent to which the proposed project may affect local wildlife, either directly or indirectly, should be thoroughly evaluated by the proponent, due to the high level of value typically associated with these components. Sensitive species and/or habitats especially should be given consideration as VCs.

6.2.1.4 *Heritage Resources (Physical and Cultural)*

Due to the cultural significance, as well as direction from the Act regarding the protection of these resources, the proponent should make efforts to identify any heritage resources that may be affected by the project. Discussions with local First Nations and/or the Yukon Heritage Branch (as applicable) are beneficial in this regard. If heritage resources are known to exist within the project area, they should likely be considered as VCs.

6.2.1.5 *Aesthetics*

Projects can typically affect aesthetics that are valued by people, through the modification (short- or long-term) of existing landscape components that are appreciated for their intrinsic worth. The proponent may identify existing aesthetic features and locations in the project area (e.g. lines of sight from major roads, wilderness viewing areas, wilderness tourism areas), as VCs where appropriate. Criteria for inclusion may include: how closely these areas are spatially related to the project, and the likelihood of the project affecting these resources;

6.2.1.6 *Noise Levels*

While noise itself is not a valued component, noise levels may be. Noise can produce both environmental and socio-economic effects. Where applicable, the proponent should select noise levels as VCs, especially if communities or sensitive wildlife are within the area of influence;

6.2.1.7 *Air Quality*

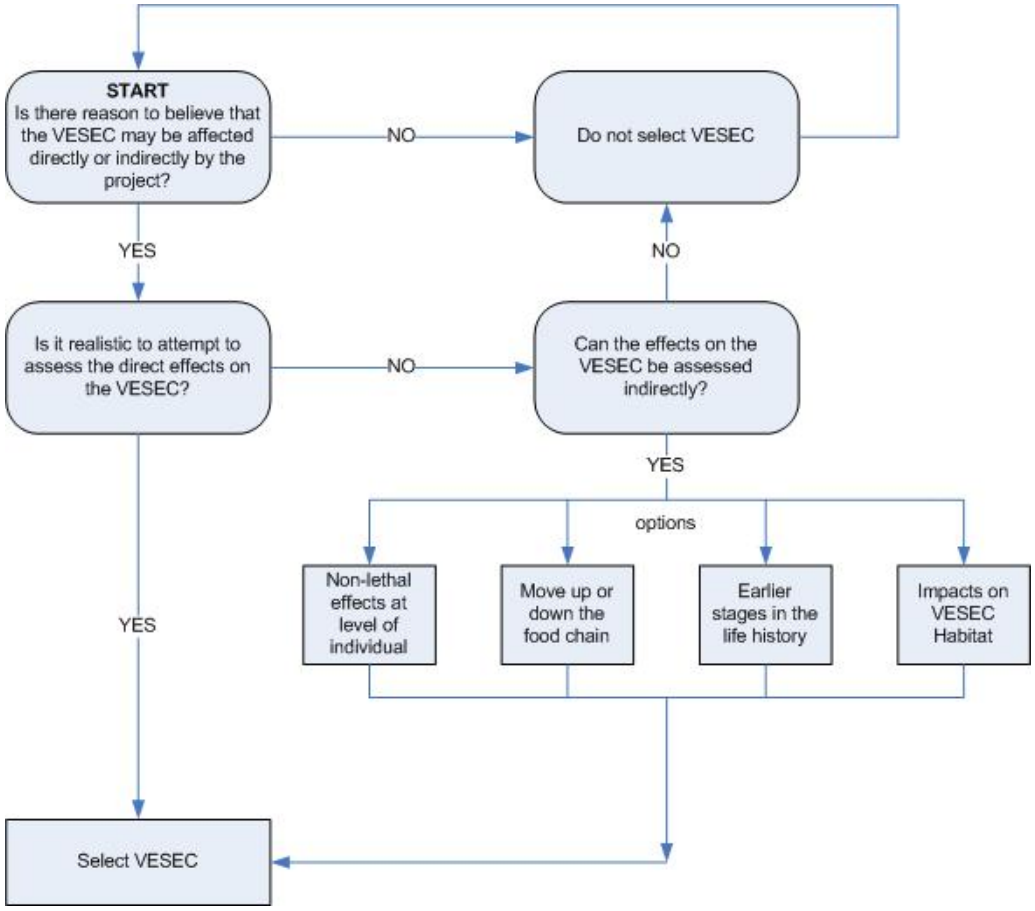
Air quality impacts resulting from the project (e.g. smoke, dust) can pose a significant concern to residents, and may affect wildlife. If there is a likely potential for the project to adversely affect air quality, this component should be given consideration as a VC.

6.2.1.8 *Socio-economic Components*

The Act requires consideration of potential socio-economic effects. In the process of selecting VCs, the proponent should identify socio-economic components potentially affected or changed directly or indirectly by the project, and consider their inclusion as VCs.

Identify the key environmental and socio-economic components that may be affected by the project, and present a selected list of expected VCs for the project, and the rationale for each selection. Focus on the components identified as being most important according to the issues and concerns raised by government, stakeholders, First Nations, and the public, and include a consideration of: perceived intrinsic value, economic importance, traditional use, recreational value, rarity, legal, scientific value, and sensitivity. Figure 4 provides a framework for selecting appropriate VCs and measures.

Figure 3 Framework for Selecting Appropriate VCs



- ❑ Describe the sensitivity of each VC to the project activities that may affect it, and document the methods used to define sensitivity.
- ❑ Describe the extent to which traditional knowledge[6] was used in the determination of VCs.
- ❑ Provide a map delineating VCs and their respective spatial considerations, as practicable.

[6] For further direction on traditional knowledge, refer to the guidelines entitled *Incorporation of Traditional Knowledge into Yukon Environmental and Socio-economic Assessments.*

6.3 POTENTIAL ENVIRONMENTAL AND SOCIO-ECONOMIC EFFECTS

This section provides guidance to a proponent on how to conduct an assessment of the potential effects of a proposed project. Proponents are encouraged to use the guidance and tables provided in the appropriate YESAA guidebooks for additional detailed information (assessment of environmental effects, cumulative effects, socio-economic effects).

6.3.1 Assessment Boundaries

In the consideration of potential environmental and socio-economic effects of a project, a screening needs to be conceptually bounded in both time and space. This is more commonly known as defining the *study areas* and *time frames*, or spatial and temporal boundaries, of the assessment.

The geographic study areas for this screening must encompass the areas of the physical and socio-economic environments that can be reasonably expected to be affected by the project, or which may be relevant to the assessment of cumulative environmental effects. Study areas will encompass all relevant components of the environment, including the people; non-human biota; land; water; air and other aspects of the natural and human environment. Study boundaries will be defined taking into account ecological, technical and social/political considerations.

6.3.1.1 *Spatial Bounding*

For each VC selected, present a proposed spatial boundary and justification;

- ❑ Describe the spatial range of each VC, and identify where and the extent to which the proposed project overlaps physically, socially, and/or economically with the VC.
- ❑ Provide a map of appropriate scale that illustrates the spatial considerations given to the chosen VCs.

6.3.1.2 *Temporal Bounding*

- ❑ Describe any temporal bounds for each VC (e.g. winter/summer habitats).
- ❑ Identify expected temporal overlaps between the proposed project activities, and VCs.

6.3.2 VC Baseline Information

Once the appropriate VCs have been established for the purposes of the assessment, it is the proponent's task to determine the degree to which the proposed project may affect those VCs. To understand the potential effects of a project on a VC, it is first necessary to understand the past, current, and anticipated future conditions (as a consequence of time and external pressures from the project and other activities affecting the VC) within which the VC has, does, or will exist. This may include, but is not limited to, information on:

- o Terrestrial/Aquatic Wildlife VC habitats (critical, calving/spawning, species extents and ranges);
- o Wildlife and fish VC movement and migration corridors;
- o Wildlife VC population information (total numbers, reproductive success, and other ecological relationships that may play a role in the health of the VC population);
- o Socio-economic conditions or factors (e.g. populations, communities, cultures).

Identify all sources of baseline information used to characterize VC condition.

6.3.3 Characterizing Effects

- ❑ Identify interactions between the project and the identified VCs, as well as the extent to which activities associated with the project may affect those VCs. Criteria for determining adverse effects include, but are not limited to:
  - o Loss of rare, endangered, or valued components
  - o Reduction of socio-economic components' integrity
  - o Reductions in species diversity
  - o Loss of critical or productive habitat
  - o Interference with movement patterns
  - o Changes in the physical environment and transformation of natural landscapes
  - o Changes to community infrastructure
  - o Deterioration of environmental quality, i.e. air and water
  - o Toxic effects on human health
  - o Reduction in the capacity of renewable resources to meet the needs of present and future generations
  - o Loss of current use of lands and resources for traditional purposes by aboriginal persons
  - o Negative impacts to heritage sites due to ground disturbance

- Foreclosure of future resource use or production

- ❑ Describe the potential environmental and socio-economic (including physical and cultural heritage) project effects, for all activities and phases, on the identified VCs.
- ❑ Incorporate comments, interests, and concerns raised during ongoing consultation with First Nations, relevant government branches and agencies, and the public.
- ❑ Describe the methods used to predict the potential effects of the project. Methods used should be transparent and scientifically defensible.

6.3.4 Effects of the Environment on the Project

- ❑ Characterize any predicted/potential effects of the environment on the project, such as terrain hazards, landslides, flood events, slope stability, and earthquakes, as applicable to the project.
- ❑ Identify and describe predicted effects of climate change on the project, including changes in hydrology patterns, climatic patterns, and permafrost regimes, for project components/activities that are potentially affected by such changes.
- ❑ Describe any critical site conditions that would affect the timing of operations.
- ❑ Describe the manner through which the above-identified conditions affect this timing.

6.3.5 Effects of Accidents and Malfunctions

- ❑ Identify possible accidents and malfunctions associated with components of the project, for the various project phases and activities.

6.4 MITIGATION MEASURES

Mitigation measures as defined by the Act include measures for the elimination, reduction, or control of adverse environmental or socio-economic effects. Mitigation measures must be part of the project design and are often part of the industry's code of good practice, standards or environmental policies. They should be identified early in the project planning process such that they may be refined throughout the assessment process as adverse environmental and socio-economic effects are clarified, or in response to comments, issues or concerns raised by government reviewers, First Nations, the public and other interested parties. These measures may include restitution for adverse effects, including replacement, restoration, compensation, or other appropriate means.

- ❑ If applicable, outline any standard mitigation measures (as defined under the Yukon Environmental and Socio-economic Assessment Act) that will be applied to individual project components and the project as a whole;

Guidance

Standard Mitigation Measures are developed by the Executive Committee or Designated Office under section 37 of the Act. These mitigations are intended for applications respecting classes of projects, or for projects located within a specified geographic area. Contact the Executive Committee for information on existing Standard Mitigation Measures that may be applied to your project.

- ❑ Describe the mitigation measures and best practices proposed to manage environmental or socio-economic effects for all phases of the project;
- ❑ Provide a description of strategies, methodologies, schedules, and plans for the implementation of mitigation measures during the phases of construction, operation, and decommissioning/reclamation;
- ❑ For each mitigation measure, describe the level of anticipated success, (i.e. full, partial, none);
- ❑ Describe health and safety programs for workers and the public;
- ❑ Present and describe any adaptive management plans, environmental management plans, and environmental protection plans/programs.

6.4.1 Managing Accidents and Malfunctions

Provide any proposed emergency response and contingency plans for dealing with accidents and malfunctions including:

- ❑ Fuel and other hazardous material spills
- ❑ Accidents on access and transportation routes
- ❑ Accidents and malfunctions of key project components/constructions
- ❑ General emergency situations such as fire and natural disasters
- ❑ Include a discussion of proposed methods for reducing the likelihood of accidents and malfunctions.

6.4.1.1 *Hazardous Materials Management*

- ❑ Describe plans for transporting, handling, storing, using, and disposing of hazardous materials.

6.4.2 Restitution Measures

Where potentially significant adverse environmental and/or socio-economic effects cannot be completely avoided, restitution measures may be presented:

- ❑ Describe restitution measures that will be used where adverse environmental or socio-economic effects cannot be avoided. Provide a description of commitments, approaches, and specific options for restoration, replacement, or compensation for any potential environmental damage. These could include programs to promote socio-economic benefits, such as those relating to training, workplace orientation, and contracting and procurement.

6.4.3 Residual Effects

Residual effects are effects of the project that remain subsequent to the application of mitigation measures.

- ❑ Describe any anticipated residual effects of the project (i.e. effects anticipated to occur subsequent to the application of mitigation measures). Any assumptions or uncertainty surrounding the implementation of mitigation measures and the prediction of residual effects should be clearly outlined.

6.5 DETERMINATION OF SIGNIFICANCE

Under *YESAA*, proponents are required to conduct an analysis of significance as part of their environmental and socio-economic assessment documentation. The methodology for determining significance should be clearly defined in sufficient detail to enable *YESAA* assessors to understand and review the proponent's analysis and interpretation of the significance of effects. Proponents are encouraged to reference relevant *YESAA* guidelines to establish significance, and to contact assessment staff with respect to standards, thresholds, etc., that should be used as part of their assessment.

- ❑ Provide an analysis of the significance of any adverse residual effects, including the nature of the effect and the specific methods used to assess the significance of each.
- ❑ Describe the methods and rationale used to determine significance, including but not limited to:
  - o Magnitude of the effect
  - o Geographic extent of the effect
  - o Timing, frequency, and duration
  - o Reversibility of effects
  - o Environmental and socio-economic context
  - o Probability of occurrence

- o Thresholds
- o Standard guidelines criteria or objectives

- ❑ Indicate the level of confidence associated with each assessment of significance.

6.6 EFFECTS MONITORING AND ADAPTIVE MANAGEMENT

Monitoring programs are designed and intended to:

- o Test the accuracy of predicted effects and the value of recommended mitigation measures;
- o Determine the effectiveness of mitigation measures and the need for modification to those measures to ensure effect predictions remain valid;
- o Identify unexpected environmental problems;
- o Implement additional mitigation measures as per adaptive management plans.

Monitoring will confirm that commitments are being met. This may take the form of direct measurement and recording of quantitative information, such as amounts and concentrations of discharges, emissions and wastes, for measurement against corporate or statutory standards, consent limits or targets. Monitoring may also require measurement of ambient environmental quality in the vicinity of a site using ecological/biological, physical, and chemical indicators, or include measurement of socio-economic components, variables, or indicators.

A preventive approach to management may involve monitoring of process inputs, for example, or type and stocks of chemical use, resource consumption, equipment and plant performance, etc.

The key aims of monitoring are, first, to ensure that results/conditions are as forecasted during the planning stage, and where they are not, to pinpoint the cause and implement action to remedy the situation. A second objective is to verify the accuracy of predicted risks and effects identified during the assessment. Monitoring may be required to meet compliance with statutory and corporate requirements.

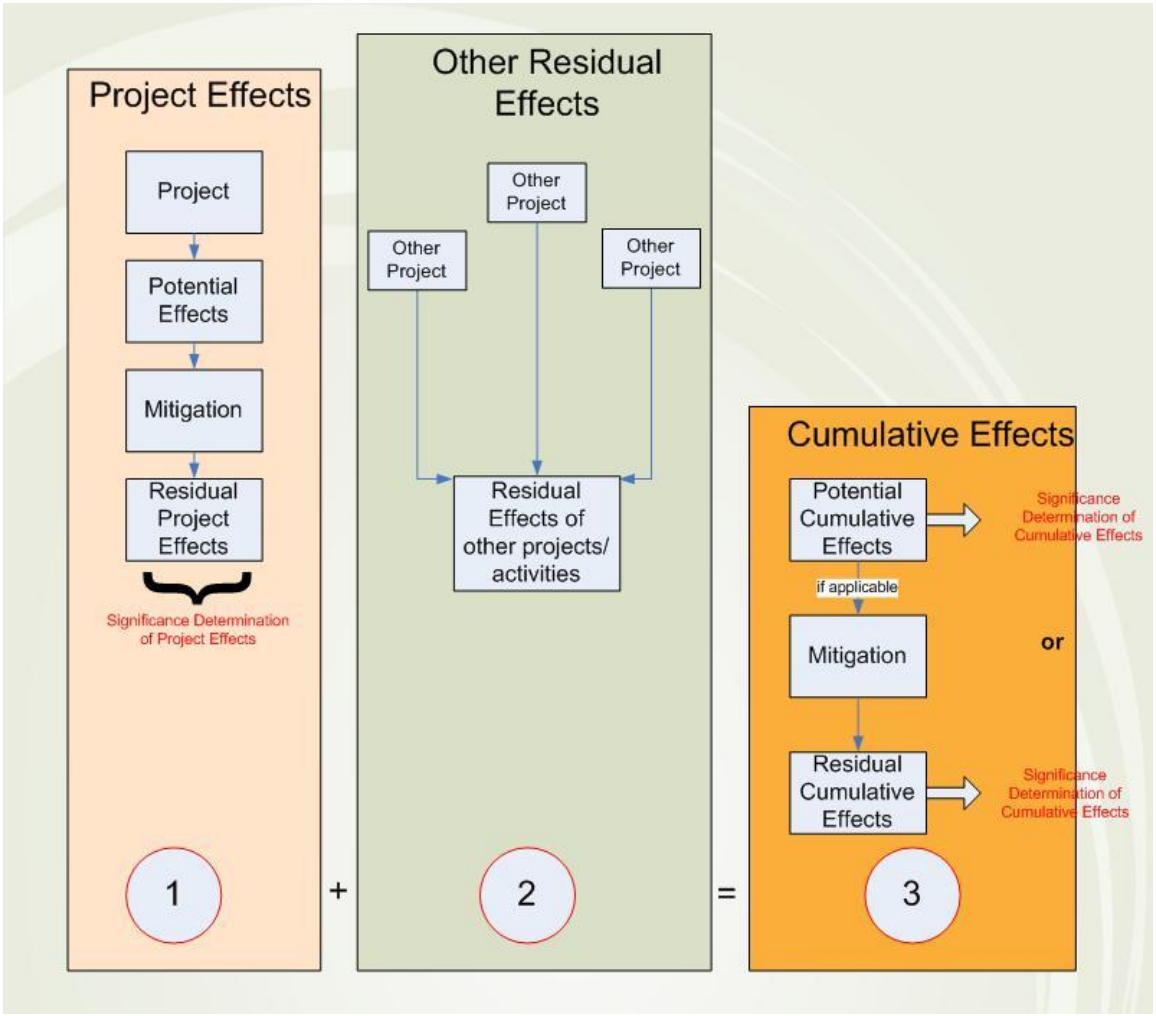
In developing monitoring programs, attention should be given to how traditional knowledge can be applied, and how knowledgeable First Nation and local people can be involved in implementation.

- ❑ Provide a description of the physical (e.g. roads, stream crossings), chemical (e.g. acid rock drainage), biotic (e.g. vegetative regeneration), and socio-economic (e.g. recreational area use) parameters to be monitored (these can be linked to the selected VCs). Provide a description of the sampling program, and of the monitoring and analytical methods/technologies (including quality assurance/quality control). Indicate any required long-term monitoring requirements.
- ❑ Provide a description of the approach to implementing the monitoring program(s), including roles and responsibilities, community involvement, and mechanisms to compile, interpret, report, and maintain data/information.
- ❑ Include monitoring site descriptions, locations, and the sampling/reporting frequency.
- ❑ Provide a description of the triggers or indicators to be used for implementing any additional remedial measures. Indicate the regulators and mechanisms for implementing these measures..

7.0 CUMULATIVE EFFECTS ASSESSMENT

The proponent is required to provide the results of a preliminary cumulative effects assessment in the project proposal. Cumulative effects are the incremental changes to environmental and socio-economic conditions as a result of the combined influences of the proposed project in conjunction with other relevant projects and/or activities. The magnitude of the combined effect can be equal to the sum of individual effects from each project and activity (additive), or be equal to an effect different than the sum (synergistic). The *Guidelines for the Assessment of Cumulative Effects under YESAA* should be referenced when preparing this section of the project proposal. Figure 5 on the next page illustrates the linkages between the project and the cumulative effects assessment.

Figure 4 Linkages between Project and Cumulative Effects Assessment



- Perform and include a cumulative environmental and socio-economic effects assessment of the project. The assessment should include the following steps:
  - Identify the Valued Environmental and Socio-economic Components to be included in the assessment.
  - Identify and characterize available cumulative effects baseline information.
  - Determine the spatial bounding for the assessment.
  - Identify other projects within the spatial area of assessment, and identify the associated residual effects.
  - Determine the temporal bounding of the assessment.
  - Characterize potential cumulative effects and their mitigation.
  - Rank significance of residual cumulative effects

7.1 VALUED ENVIRONMENTAL AND SOCIO-ECONOMIC COMPONENTS

- ❑ Identify the VCs chosen for the purposes of the cumulative effects assessment.
- ❑ Provide a rationale for the inclusion of each VC.
- ❑ Identify the extent to which local values were used in the identification of VCs.

See section 6.1 for more detail regarding VCs, and their incorporation into the assessment of the proposed project.

Guidance

Generally, the VCs used in the environmental and socio-economic assessment will be the same as those used for the purposes of the cumulative effects assessment. There may however be times when there may be additional VCs considered in the cumulative effects assessment. For more guidance, refer to the Guidelines for the Assessment of Cumulative Effects under the Yukon Environmental and Socio-economic Assessment Act.

7.1.1 VC-specific Baseline Information

- ❑ Identify all sources of baseline information used to characterize VC conditions;

7.1.2 Assessment Boundaries

The consideration of the environmental and socio-economic effects in the screening needs to be conceptually bounded in both time and space. This is more commonly known as defining the *study areas* and *time frames*, or spatial and temporal boundaries, of the screening assessment.

The geographic study areas for this screening must encompass the areas of the environment that can reasonably be expected to be affected by the project, or which may be relevant to the assessment of cumulative environmental effects. Study areas will encompass all relevant components of the environment including the people; non-human biota; land; water; air and other aspects of the natural and human environment.

Study boundaries will be defined taking into account ecological, technical and social/political considerations.

7.1.2.1 *Spatial Bounding*

- ❑ Identify the spatial bounds used for each VC, for the purposes of the cumulative effects assessment.

Guidance

The spatial scope should encompass an area large enough to consider most, if not all regional pressures (past, present, and future) on the selected VC, and can (in most cases should) be unique for each VC. A cumulative effects assessment should consider all influences originating from other projects and activities that affect the VCs identified in section 7.1. To be more precise, the projects and activities considered in the cumulative effects assessment are not required to exist within the defined spatial scope; it is the *effects* of these projects and activities within the defined spatial bounds that the assessment should consider.

7.1.2.2 *Temporal Bounding*

- ❑ Identify the temporal bounds used for each VC, for the purposes of the assessment.

Guidance

With a reasonable understanding of the duration of direct and indirect residual effects, the assessor can begin to define the time period within which cumulative effects will be considered; this is referred to as the temporal scope. The assessment should cover a period long enough to incorporate long-term, direct, and indirect effects of the proposed project that overlap with the residual effects of other projects.

7.2 OTHER PROJECTS AND ACTIVITIES

- ❑ Identify other projects and activities within the spatial and temporal scope of the cumulative effects assessment.

7.2.1 Residual Effects of Other Projects and Activities

- ❑ Describe the residual environmental and socio-economic effects of the other projects and activities identified within the spatial and temporal scope of the cumulative effects assessment.

7.3 POTENTIAL CUMULATIVE EFFECTS

The potential cumulative effects of the project are the combination of residual effects identified in section 6.3.3 with the residual effects of other projects or activities identified in section 7.2.1.

- ❑ Identify potential cumulative environmental and socio-economic effects that may occur in connection with the project in combination with the effects of other projects or activities within or outside Yukon.

7.4 MITIGATION MEASURES

If applicable:

- ❑ Present mitigation plans or measures to address cumulative effects, and identify the anticipated success associated with each plan or measure.
- ❑ Provide a rationale for the expected success of the mitigation measure, including results of any field studies and research.

7.5 RESIDUAL CUMULATIVE EFFECTS

- ❑ Describe any anticipated residual cumulative effects in a manner similar to the project effects. Any assumptions or uncertainty surrounding the implementation of mitigation measures and the prediction of residual effects should be clearly outlined.

7.6 SIGNIFICANCE

- ❑ Provide an analysis of the significance of any adverse residual environmental or socio-economic effects of the proposed project in combination with the residual effects of other projects, including the nature of the effect and the specific methods used to assess the significance of each.

- Describe the methods and rationale used to determine significance, including but not limited to:
  - Magnitude of the effect
  - Geographic extent of the effect
  - Timing, frequency, and duration
  - Reversibility of effects
  - Environmental and socio-economic context
  - Probability of occurrence
  - Thresholds
  - Standard guidelines criteria or objectives
- Indicate the level of confidence associated with each assessment of significance;
- Provide an assessment of the significance of identified adverse environmental and socio-economic residual effects;
- Provide information on the process (e.g. professional judgment, public consultation, expert advisors), rationale, and criteria for each determination of significance.

8.0 ACKNOWLEDGEMENT AND CERTIFICATION

❑ Include a signed acknowledgement and certification with the proposal, as follows:

The information submitted in this Project Proposal is required for the purpose of conducting a screening under the *Yukon Environmental and Socio-economic Assessment Act.* I acknowledge that, pursuant to section 119 of the *Act*, a copy of this Project Proposal will be placed on a public register and be available to any member of the public to review.

I understand that misrepresenting or omitting information required for the evaluation may cause delays in the screening or render the recommendation invalid.

I certify that the information provided is true and correct to the best of my knowledge and belief.

_____ _____

Proponent's Signature Date

PART 2 Additional Information Requirements for Sector-Specific Executive Committee Projects

The following sections provide additional information requirements for several specific sectoral undertakings. Specific info requirements are in development for other sectoral undertakings and will be added to the guide as they are completed.

FORESTRY PROJECTS

In addition to the information requirements set out in the main body of this document, proponents are requested to include the following information that is relevant to forestry project proposals. The number provided next to the section title outlines the relevant section from Part 1 that this additional information should become part of.

F.1 Environmental Conditions (s. 4.1.1 – 4.1.11)

The purpose of this section is to demonstrate that non-timber forest resource objectives are appropriately balanced with harvesting or post-harvest treatments. These resources include, but are not limited to:

- Wildlife
- Sensitive Areas
- Fisheries
- Watershed Values
- Recreation
- Biological Diversity
- Aesthetics
- Cultural Heritage
- Traditional First Nation pursuits
- Other Resources (e.g. tourism, hunting, trapping)

- ❑ Describe the site conditions, if any, that must exist after a harvest or site treatment in order to accommodate forest resources/values.
- ❑ Describe the site conditions, if any, that must exist after a harvest or site treatment in order to accommodate forest resources identified in another plan (e.g. Forest Management Plan) that applies to the project area.

Forest Protection (s. 4.1.8.1)

- ❑ Provide a description of fire, insect, disease, and blowdown history and effects.
- ❑ Identify any potential effects of the proposed activities on forest pests, fire, and safety hazards.

F.2 Forest Land and Vegetation (s. 4.1.7.2)

- ❑ Describe the current forest landscape patterns and discuss any implications on the proposed project.
- ❑ Identify productive forest land by site class, species composition, area, volume, and annual allowable cut, by unit.
- ❑ Provide growth and yield estimates for affected stands.
- ❑ Classify areas of non-productive forest land and non-forested land.
- ❑ Classify areas proposed for harvesting by Forested Ecosystem and Natural Disturbance Zone types, and provide a description of primary disturbance events, frequency, intensity, average patch size, and mean event interval, as outlined in the *Timber Harvesting and Planning Operating Guidelines* (1998).

F.3 Forest Research (s. 4.1.12)

- ❑ Identify present and past forest research results relevant to the project.
- ❑ Describe methods proven through research to be useful (e.g. harvesting methods, site preparation, and site improvement).
- ❑ Identify permanent sample plot and temporary sample plot information and locations for the affected areas.

F.4 Land and Resource Use (s. 4.2.2)

- ❑ Describe the local use of timber for firewood, camp, and cabin sites.

F.5 Project Description (s. 5.0)

- ❑ Describe the proposed forest road system, including:
  - o Location and description of access roads and seasonal access forestry roads, including stream crossings and types such as bridges, culverts (number and size), with dates of installation and estimated life of the fixtures, and design parameters.
- ❑ Describe the proposed harvesting practices including:
  - o Volumes and areas cut compared to the Annual Allowable Cut
  - o Operating/cutting areas which have been previously accessed and the harvest methods and equipment used
  - o Log storage landings
- ❑ Describe the proposed silvicultural practices including:
  - o Silvicultural prescriptions, including site preparation (e.g. scarification techniques and drainage);\

- Forest renewal including natural and planted regeneration, and anticipated success rates
- Stand tending
- Seed collection

F.6 Area Summaries (s. 4.1.13)

- ❑ Provide information for the proposed area under the prescription, including:
  - Productive area
  - Reserve patches of timber or immature trees
  - Natural non-productive area (rock, swamp, water, brush)
  - Created non-productive area (planned and existing roads, landings, gravel pits)
  - Areas of non-commercial vegetation growth greater than 4 hectares
  - Any other areas not described above

F.7 Mitigation Measures (s. 6.4)

- ❑ Describe the total area to be reforested. This includes areas other than:
  - An area occupied by permanent access structures
  - An area of rock or wetland, or other area that, in its natural state, is incapable of growing a stand of trees that meets the stocking requirements specified by the Yukon Forest Management Branch
  - A contiguous area composed of non-commercial forest cover
  - An area identified as a net-down or reserve area, where the establishment of a free growing stand is not required

- ❑ Describe the extent to which the proposed harvesting and regeneration practices will:
  - Protect the understorey component of forest stands
  - Produce a forest that is sustainable at the proposed harvest rate while providing for other forest values
  - Achieve sustainability in all forest values, including ecosystems, biological diversity, natural disturbance regimes and ecological function in light of the proposed harvesting and regeneration practices, and proposed mitigation and protection measures

HARDROCK (QUARTZ) MINING PROJECTS

In addition to the information requirements set out in the main body of this document, proponents are requested to include the following information that is relevant to hardrock mining project proposals. The number provided next to the section title outlines the relevant section from Part 1 that this additional information should become part of.

H.1 Proponent Information (s. 1.2)

- ❑ Include any corporate policy on environmental responsibility or sustainable development if available.

Guidance

For an outline of an environmental policy framework, refer to the Mining Association of Canada: Environmental Policy (www.mining.ca).

H.2 Surficial Geology/Soils (s. 4.1.3)

- ❑ Describe the regional geology in relationship to the project using a 1:250,000 scale or larger map.
- ❑ Describe and map the property geology (1:10,000 scale). Indicate drill hole locations and type (DDH or RC). Outline any exploration developments.
- ❑ Describe the major rock types present, indicating petrology, mineralogy, and structure.
- ❑ Present and describe all geochemical results of all litholigies in the project area. Data and results from acid-base accounting, kinetic testing, slaking, freeze thaw, and metal leaching tests should be presented and discussed. The acid-neutralizing capability of the different rock types should also be provided.
- ❑ Outline future reserves or property exploration potential.

H.3 Hydrology (s. 4.1.10.1)

- ❑ Mean, minimum, and maximum runoff for a specified return period.

H.4 Hydrogeology (s. 4.1.10.3)

- ❑ Characterize the groundwater regime of the area including quantity, aquifer discharge and recharge zones, depth to groundwater, and local and regional groundwater flow patterns.

H.5 Water Quality (s. 4.1.10.2)

- ❑ Interpret water quality data for seasonal variability and range of key project water quality variables. Provide baseline values for substances that will be modified by the project (during construction, operation, and decommissioning).
- ❑ Include an assessment of groundwater quality that may be affected by the proposed project, if applicable.

H.6 Benthic Invertebrates/ Periphyton (s. 4.1.11.2)

- ❑ Provide a summary inventory of benthic invertebrates and periphyton baseline data for affected drainages including, where applicable, sample site descriptions, species abundance, spatial distribution, taxonomy, biomass, and chlorophyll contents.

H.7 Stream Sediments (s. 4.1.11.3)

- ❑ Provide information describing the geological and chemical characteristics of streambed sediments (grain size and dissolved metals analysis).

Guidance

For water resources information, contact the Government of Yukon, Dept. of Environment, Environmental Programs, at 867-667-5683.

H.8 Land Tenure (s. 4.2.2.1)

- ❑ Provide a description and map of mineral claims or lease boundaries.

H.9 Alternatives Means of Carrying out the Project (s. 5.3.2)

- ❑ Site selection alternatives considered for dump locations should be identified and the reasons for their rejection provided.
- ❑ Alternative sites considered and investigated for tailings facilities should be discussed, and the reasons for their rejection provided.

H.10 Major Project Components (s. 5.4.2, 5.4.3, 5.4.4)

As appropriate to the phase being described:

- ❑ Identify the main project components, including the mine, the mill or other processing facilities (e.g. heap leach pad), waste rock dumps, tailings impoundments, ore and concentrate storage areas, waste handling facilities and disposal areas, fuel and chemical storage, mine and camp facilities, power lines, pipelines, pumphouses, and affected drainage courses. Indicate locations on a map of suitable scale.
- ❑ Describe associated infrastructure necessary for the project including site access/haul roads, airstrips, ports, energy generation, and/or transmission infrastructure, camp and/or housing facilities.
- ❑ Outline the project's raw material, energy, and water requirements and sources.
- ❑ For open pits, provide detailed information on the slope of pit walls, bench heights, de-watering methods and timing, and final volumes of ore and waste rock removal from the pits.
- ❑ For underground developments, provide plans and cross-sections detailing the location, geology, ore body, and geotechnical properties of the proposed underground workings. Describe the proposed mining methods, sequencing, size of openings and underground support requirements.
- ❑ For heap leach pads, provide pad location, selection criteria, pad and impoundment designs, liner and event pond designs, construction methods, leakage detection systems, seepage collection, and processing details.

H.11 Access and Transportation (s. 5.4.3.1)

- ❑ Indicate ore/concentrate transportation routes and destinations.

H.12 Fuel, Hazardous Materials, and Explosives Storage Sites (s. 5.4.2.2, 5.4.3.2, 5.4.4.2)

As appropriate to the phase being discussed:

- ❑ Outline blasting requirements, explosive type(s), consumption and supply.
- ❑ Describe the explosives-related infrastructure, including: explosives and detonator magazines, explosive factory and/or manufacturing facilities, fuel storage, ANFO storage, maintenance/wash areas, and process trucks and their parking areas.
- ❑ Provide a detailed site plan of explosives-related infrastructures showing layout and distances to the nearest body of water, public traffic routes (roads, railways, navigable watercourses) and inhabited buildings (on- and off-site).

H.13 Construction phase (s. 5.4.2)

- ❑ Describe the mine development plans, including schedules, phasing or pit/underground development, and rate of ore extraction. Discuss equipment types and handling practices. Outline blasting requirements, explosive type(s), consumption and supply. Design details of the open pit and/or underground mine development and settling ponds are required.
- ❑ Describe construction quality control/assurance features for constructed engineered works (e.g. tailings impoundments, heap leach pads, waste rock dumps, sediment control dams).

H.14 Operation/Modification Phase (s. 5.4.3)

- ❑ Describe mining operations (e.g. design of pit or underground mine, blasting and drilling activities, ore handling, mine dewatering, management of waste rock) and any important characteristics of the ore reserves (e.g. metal grades and representative minor element composition of the deposit).
- ❑ Describe milling operations including unit processes, reagent use and handling, effluent treatment, concentrate handling, and tailings management. Describe the production process(es) to be used and indicate production capacity. Describe products produced.
- ❑ Provide a mine annual water balance cycle including sources and quantities of all process water and an estimate of its chemical composition at different stages of the mining process. Describe with supporting test-work the discharge/tailings effluent and proposals for segregation, treatment, and/or recycling.
- ❑ Outline any concurrent reclamation activities and provide a plan for temporary shut down of operations.

H.15 Ore Processing (s. 5.4.3.3)

- ❑ Describe the process of extracting metals or minerals from the ore. Facilities and equipment should be identified and a description of the beneficiation and extraction process provided. A process diagram or flow sheet should be included for any related processes. Measures or technologies to control waste emissions or effluents should be described and flow sheets presented. All supporting metallurgical test work and waste characterizations should be included and discussed.
- ❑ A description of the ore process facilities (milling, heap leaching) should be provided, including metallurgical testing, chemical inputs, products and wastes. If heap leaching is proposed, a description of both the leaching and post-leaching processing should be provided, including chemical inputs, products, and wastes.

H.16 Waste Rock Disposal (s. 5.4.3.4)

- ❑ Describe the various waste rock lithologies, quantities, and disposal facilities. Waste rock geochemical testwork and characterization in support of acid rock drainage and metal leaching properties should be presented.

- ❑ Describe the waste rock disposal methods, containment measures and dump locations for each type of rock waste.
- ❑ Present waste rock dump engineering designs and include details on the dump staging, scheduling, design criteria (stability issues) and slopes. The effects of groundwater and permafrost on the dump foundations should be discussed and supporting data provided regarding the stability of the foundations.
- ❑ Identify and highlight any potential environmental concerns and discuss techniques or methods to address potential issues as part of the disposal plan.

H.17 Tailings Disposal (s. 5.4.3.5)

- ❑ Provide engineered drawings and designs for any tailings impoundments.
- ❑ Provide details (including specifications) of dam design including design criteria and downstream risk assessment.
- ❑ Describe the dam foundations and provide information on geotechnical conditions, permafrost, slopes, seepage control, and piezometric surface.
- ❑ Describe the materials and characteristics for the tailings dam. Describe and locate spillways and diversions.
- ❑ Provide a detailed water balance for the tailings pond and anticipated contaminant releases from the tailings impoundment. The water balance should provide worst case scenarios in regard to wet and dry climatic conditions.
- ❑ Discuss facility staging and future dam additions and designs.
- ❑ Outline contingency plans in the event of failure/breach of the tailings impoundment.
- ❑ Provide details on seepage control measures or design features which are intended to improve effluent water quality.

H.18 Decommissioning/ Abandonment/ Reclamation Phase (s. 5.4.4)

- ❑ Describe proposed practices for the management of solid wastes, liquid effluents, gaseous emissions, and water use.
- ❑ Identify proposed risk management approaches, including emergency response measures for this phase.
- ❑ Identify any options for the post-mining use and condition of the site and its infrastructure
- ❑ Present and describe financial security requirements for closure. Decommissioning plans at a conceptual level should be costed for an estimation of mine reclamation bonding requirements. The proponent should submit a security proposal to address the liability at the site.

H.19 Managing Accidents and Malfunctions (s. 6.4.1)

- ❑ Provide emergency and contingency plans for dealing with accidents and malfunctions including:
  - o Accidents and malfunctions of key project components, such as tailings containment areas, dykes, and diversions.
  - o Failure/breach of impoundments.
  - o Failures during the mining process.

LINEAR PROJECTS

In addition to the information requirements set out in the main body of this document, proponents are strongly encouraged to include the following information that is relevant to project proposals for linear developments. The number provided next to the section title outlines the relevant section from Part 1, of which this additional information should become part.

L.1 Executive Summary (s. 1.1)

- ❑ Briefly present key project components including route, size, activities, schedule, and timing constraints.

L.2 Project Location and Route/Site Selection (s. 3.1)

- ❑ Provide details on the proposed project route, using maps of appropriate scale. Indicate project boundaries, existing infrastructure, land tenure, legal land description, land uses (existing and adjacent), nearest residences and communities, environmental constraints, location of ancillary facilities (borrow sources, camps, compressor stations, etc.), alternative routes, and any other important features. Summarize the project area in relation to drainage basins and ecoregions.
- ❑ Provide a series of environmental alignment sheets, including overview maps and index maps for the alignment sheets. These sheets should continuously map the project route and components and the current biophysical and socio-economic setting at an appropriate scale that accurately depicts the potentially impacted areas. The alignment sheets should be standardized (topographic contours, scale, north arrow) and submitted at similar scales. Details on environmental alignment sheets can be found in the *Environmental Impact Statement for the Mackenzie Gas Project, August 2004, Volume 8: Environmental Alignment Sheets* (http://mackenziegasproject.com).
- ❑ For specific project components (compressor stations, stream crossings, sub-stations, etc.) provide maps of appropriate scale identifying the project boundaries, existing infrastructure, land tenure, land uses (existing and adjacent), environmental constraints, location of ancillary facilities, and any other important features.

➲ For oil and gas projects:

- ❑ If immediate tie-in is proposed, flowlines and permanent access routes must be shown on maps and development and mitigation plans outlined.
- ❑ Where immediate tie-in is not anticipated, the proposal should contain, at a minimum, conceptual routing of flowlines and permanent access routes, based on the proponent's best a available information or projections at the time.

- ❑ Proposals should clearly differentiate between flowlines and permanent access routes which are conceptual and those which are intended to be part of the development work to be reviewed.

L.3 Accessory Activities (s. 5.1.2)

- ❑ Provide details on all borrow pit and quarry sites including access, quantities to be extracted, and management plans describing the proposed operations (e.g. water management). The location of these sites should be indicated on maps at an appropriate scale (1:50,000). Estimates of quantities to be extracted should be provided along with details on access.

L.4 Alternative Means of Carrying Out the Project (s. 5.3.2)

- ❑ Include a comparative evaluation of alternative routes, indicating the methodologies used for alternative selection. Selection constraints should include technical and engineering features, cost, environmental, socio-economic, and cultural/heritage considerations.

L.5 Major Project Components (s. 5.4.2, 5.4.3, 5.4.4)

- ❑ Provide a map with all major project components, structures, and facilities clearly labeled.
- ❑ Describe in sufficient detail the major project components associated with the linear development and its corridor, including, as applicable, the length and width of the right-of-way, selected route, compressor stations, valve sites, stream crossings, and any other facilities that may be required. The location, size, and boundaries of the project components should be provided.
- ❑ The description should be supported by plans, diagrams, and preliminary designs for engineered components of the project.

L.6 Construction Phase (s. 5.4.2)

- ❑ In the description of major project components and associated infrastructure, include activities such as: right of way clearing, surface preparation, borrow pits, quarries, stream crossings, cut and fill activities, material lay down and disposal storage areas, blasting, drilling, construction and rehabilitation, including removal of temporary services.

L.7 Air Quality (s. 6.2.1.7)

- ❑ Provide information on primary sources of atmospheric emissions from oil and gas operations arising from:

  o Flaring, venting, and purging gases.

- Combustion processes such as diesel engines and gas turbines.
- Fugitive gases from loading operations and tankage, and losses from process equipment.

L.8 Characterize Effects (s. 6.3.3)

- ❑ Describe the sources of environmental impacts that could result from the project and proposed methods of avoiding or minimizing those impacts. Considerations should include impacts of:
  - New access
  - Blading or other access upgrades
  - Stripping lease, flowline/pipeline route, etc.
  - Effects on slopes (cut and fill)
  - Stream crossings
  - Impacts on wetlands, riparian areas
  - Tree/brush removal

- ❑ Identify whether such sources of impact are anticipated to be an issue. Provide supporting rationale.

DISCLAIMER

This Guide is not a legal authority and is not intended to provide legal advice or direction. The Guide provides information only, and should not be used as a substitute for the Yukon Environmental & Socio-economic Assessment Act or its associated *Regulations and Rules*. In the event of a discrepancy, the Act, Regulations, and Rules prevail. Portions of the Act have been paraphrased in the Guide, and should not be relied upon for legal purposes. The procedures described in this Guide may be deviated from, based on specific project circumstances. The Yukon Environmental & Socio-economic Assessment Board and Designated Offices disclaim liability in respect of anything done in reliance, in whole or in part, on the contents of this Guide.