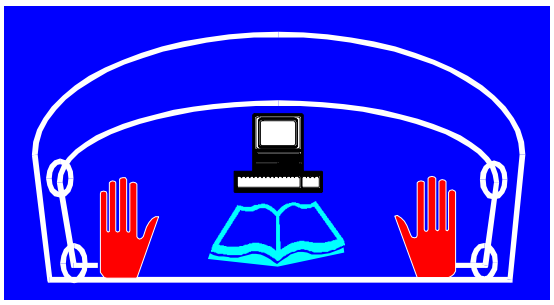


Workshop - Participation Manual - Socio-economic Analysis - Cornwal, Ontario

Date of Report: 1987

Author: Ontario - Minstry Of Tourism

Catalogue Number: 11-55-69

WORKSHOP

Participants MANUAL

SOCIO-ECONOMIC ANALYSIS

CORNWALL
15—18 December
1987

FUNCTIONAL TRAINING WORKSHOPS
Socio-economic Analysis for Project Planning

1.0 OBJECTIVES:

1.1 Project managers and sponsors will be able to:
identify socio-economic issues
understand each form of analysis
request necessary tasks
interpret the results of socio-economic analysis

1.2 Project team participants will be able to:
review actual projects
identify and develop an approach to the analysis required

2.0 TARGET AUDIENCE:

2.1 Project Managers
Park Superintendants & Staff
Regional Socio-economic Analysts

2.2 Language: Either English or French

2.3 Prerequisites:

Participants will provide a project portfolio (PIP documentation and necessary background information) for discussion at the workshop.

Familiarity with the PIPS/CONTRACTS process

Current involvement in project planning and delivery.

3.0 CONTENT:

MODULE 1: The Project Planning System of Government
- Learning Objectives
- Park Service Mandate
- The Policy Expenditure Management System
- Program Policies and Objectives
- Socio-Economic Policy Concerns
- Plans Required for Park Management

MODULE 2: The Project Planning Process
- Learning Objectives
- Project Planning Stages
- Project Concept
- Project Definition

MODULE 3: Visitor Market Analysis
- Learning Objectives
- Overview
- Trend Analysis
- Market Position
- Segmentation
- Demand Analysis
- Factors in Choice of Option
- Corporate Constraints
- Positioning
- Service Targets and Goals
- Marketing Strategy and Mix

MODULE 4: Benefit-Cost Analysis
- Learning Objectives
- Overview of Benefit-Cost Analysis
- Major Steps in a Benefit-Cost Analysis
- Step 1 - Identify Project Options
- Step 2 - Describe Project Options
- Step 3 - Identify Project Constraints
- Step 4 - Identify Project Benefits and Costs
- Step 5 - Measure the Benefits and Costs
- Step 6 - Discount Monetary Benefits and Costs
- Step 7 - Compare Project Options
- Step 8 - Conduct a Sensitivity Analysis

MODULE 5: Socio-Economic Impact Assessment
- Learning Objectives
- Overview of Socio-economic Impact Assessment
- Major Steps in a Socio-Economic Impact Assessment
- Step 1 - Identify the Socio-economic Impacts
- Step 2 - Describe the Boundaries of the Impact Area
- Step 3 - Rate the Socio-economic Impacts
  Example of Completed Checklist
- Step 4 - Recommended Action

MODULE 6: User Projections
- Learning Objectives
- Overview of User Projections
- Describe Peak User Loadings
- Identify Circulation Patterns and Distribution of Use
- Select Media and Determine Media Layout

MODULE 7: Life-cycle Cost Analysis
- Learning Objectives
- Overview of Life-cycle Cost Analysis
- Major Steps in Life-cycle Cost Analysis
- Step 1 - Specify Design and Delivery Options
- Step 2 - Choose the Life-cycle
- Step 3 - Enumerate the Costs
- Step 4 - Calculate the Revenues
- Step 5 - Discount the Costs and Revenues to Present Value
- Step 6 - Identify the Low Cost Option
- Step 7 - Conduct a Sensitivity Analysis

MODULE 8: Regional Socio-economic Impact Studies

- Learning Objectives
- Major Steps in a Regional Socio-economic Impact Study
- The Types of Impacts Identified in A 51A
- Step 1 - Develop a Profile of the Impact Area
- Step 2 – Estimate Social and Economic Impacts of a Project
- Step 3 - Compare the Impact Area With or Without the Project
- Step 4 - Produce the Results of the Study

4.0 FORHAT

Up to eight modules can be presented using overhead visuals. Each participant will be provided with a workbook, containing an outline of the planning system, project planning process, and each method of analysis. During the presentation, participants will be able to ask questions, and take notes on the tasks, how they are performed and the usefulness of socio-economic input for various project planning decisions. After each presentation, the participants will complete an exercise or be given examples where they will be asked to identify and describe the tasks required. They will then be asked to interpret the results of the analysis and to use their conclusions in project decision making.

The workshop can be tailormade to the requirements of the participants. Presentation of one or more of the modules can be incorporated into meetings of other functions and/or combined with demonstration and use of the modeling techniques developed by the Socio-economic Branch.

Participants are encouraged to contribute difficult or complex project-investment decisions so that the primary focus of the workshop can be practical problem solving.

5.0 DURATION

Three to four days

6.0 LOCATION

Park or other regional field locations where in-residence accommodation can be arranged.

7.0 STATUS

Workshops will be arranged at the request of the Region for project managers and park staff.

8.0 DEPARTMENTAL CONTACTS

WORKSHOP CO-ORDINATORS: W. SMITH (819) 997-6308
Luc PERRON (819) 997-6623

PROPOSED SCHEDULE

DECEMBER 15, 1987 (TUESDAY)

9:00 - 10:00 INTRODUCTION
10:00 - 10:15 Coffee Break
10:15 - 12:00 THE PLANNING SYSTEM OF GOVERNMENT

13:00 - 15:00 THE PROJECT PLANNING PROCESS
15:00 - 15:15 Coffee Break
15:15 - 16:30 VISITOR MARKET ANALYSIS - intro -
o Trend analysis
Examples & exercise

DECEMBER 16, 1987 (WEDNESDAY)

8:30 - 10:00 VISITOR MARKET ANALYSIS
o Market analysis
Examples & exercise
10:00 - 10:15 Coffee Break
10:15 - 12:00 VISITOR MARKET ANALYSIS
o Marketing
Tourism market outlook

13:00 - 15:00 VISITOR MARKET ANALYSIS
o Case study & discussion

15:00 - 15:15 Coffee Break
15:15 - 16:30 BENEFIT-COST ANALYSIS - intro -

DECEMBER 17, 1987 (THURSDAY)

8:30 - 10:00 BENEFIT-COST ANALYSIS - review -
o Case study & discussion
10:00 - 10:15 Coffee Break
10:15 - 12:00 SOCIO-ECONOMIC IMPACT ASSESSMENT
o Case study & discussion

13:00 - 15:00 USER PROJECTIONS
o Case study & discussion
15:00 - 15:15 Coffee Break
15:15 - 16:30 USER PROJECTIONS
o Regional examples

DECEMBER 18, 1987 (FRIDAY)

8:30 - 10:00 LIFE-CYCLE COST ANALYSIS
10:00 - 10:15 Coffee Break
10:15 - 12:00 LIFE-CYCLE COST ANALYSIS
o Applications and regional examples

13:00 - 14:15 REGIONAL SOCIO-ECONOMIC STUDIES
14:15 - 15:00 Examples
15:00 - 15:15 Coffee Break
15:15 - 16:00 Group evaluation of workshop

THE PLANNING SYSTEM OF GOVERNMENT

MODULE 1

TABLE OF CONTENTS

MODULE ONE: THE PLANNING SYSTEM - LEARNING OBJECTIVES

INTRODUCTION

This module is part of a series of eight modules which describes the Parks project planning process. These modules are directed at Project Managers and Park staff.

OBJECTIVE

When you have finished this module, you will be able to:

- describe how Parks project planning fits within the overall planning processes of the federal government.

RELATED PAGES MATERIAL

RELATED Module Two: The Parks Planning Process

THE HANDATE OF THE PARK SERVICE AND WHAT IT MEANS FOR YOU

DESCRIPTION

Parliament has given the Park Service this mandate:

"To protect for all time those places which are significant examples of Canada's natural and cultural heritage and to encourage public understanding, appreciation and enjoyment of this heritage in ways which leave it unimpaired for future generations."

COMMENT

Most Canadians would probably agree with the importance of this mandate. At the same time, we live in a changing world with competing demands on our time and resources. It is easy to imagine specific situations in which other priorities may seem more important to some people than the protection of our natural and cultural heritage.

ROLE

As a project team member, you are involved in the planning, design and delivery of Parks projects such as:

- capital works
- major contracts
- service grants

You have an important role to play in making sure that our mandate is successfully carried out.

To play your role well, you need to understand the various government systems which are in place to deal with competing demands for scarce resources. You need to know how to present the facts that show your projects to be well thought out and compatible with existing policies, objectives, priorities and plans.

PREVIEW

The following pages give an overview of the planning framework in government and describe some important policies and objectives of the Park Service which affect you.

Other modules in this series outline several important types of information and analysis you need to support your project plans and how this should be obtained.

COMMENT

By studying this series of modules, you will learn about the ways in which socio-economic analysis and impact assessment can be used to support requests for project funding.

RELATED PAGES

Who Determines How the Parks Services Mandate is to be Carried Out?
p. 1 - 3

RELATED DOCUMENT

Parks Canada Policy

WHO DETERMINES HOW THE PARKS SERVICE'S MANDATE IS TO BE CARRIED OUT?

DESCRIPTION

Park plans, projects and budgets must be developed in accordance with the Policy and Expenditure Management System now in use within the federal government. Within PEMS, various bodies help determine how the Parks Service is expected to fulfill its mandate.

- Cabinet Committees review proposed changes in existing policies and direction. The Cabinet sets spending priorities and levels based on the Minister of Finance's economic forecast and revenue projections. Policy choices must be made within the budgetary constraints set out in the Fiscal Plan.

- Treasury Board has implemented a multi-year planning framework. This framework is used to allocate resources to government departments and to monitor their operations and expenditures.

- Each Department uses this framework to report on its operations and to request additional resources. Within this framework,
  - the CORPORATE STRATEGIC OVERVIEW reviews departmental objectives and strategies to reflect changing government priorities
  - the EVALUATION PLAN summarizes recent program evaluations and the follow-up actions required, and schedules the review of program components
  - the MULTI-YEAR OPERATIONAL PLAN
    - relates activities and projects to program objectives
    - relates the results of activities and projects to resource inputs required for each year in the planning period
    - describes trends in the level of demand for program benefits or services
  - the BUDGET-YEAR OPERATIONAL PLAN sets out work goals and spending targets for the upcoming year

RULE

In all these planning processes, it is essential to:
- consider various ways to achieve the goal
- state the purpose for which funds are required
- weigh all costs, benefits and impacts of proposals

RELATED PAGES

How Parks Service Policies Relate to Overall Government Plans, p. 1 - 4

HOW PARKS SERVICE POLICIES RELATE TO OVERALL GOVERNMENT PLANS

INTRODUCTION

The Parks Service formulates specific policies and objectives related to its mandate within the framework laid down in overall government priorities and plans.

EXAMPLE

In 1973, Cabinet established the Federal Environmental Assessment and Review Process. This process results from a Cabinet decision to assess the possible negative impact on the environment of various proposed actions.

To conform with this overall government policy, the Impact Assessment and Review Policy specifically states:

> "Parks Canada will take into account, in its planning and management, the full range of implications of any proposed actions on public lands under its administration, management and control . . . . Consideration should be given to the full range of possible adverse impacts: biophysical, socio-economic, cultural, archaeological, historical and aesthetic."

RULE

Park managers must be able to show how your projects support the current policies, objectives and priorities of the Parks Service, especially when you are seeking approval for major spending proposals.

RELATED PAGES

Who Determines how the Parks Service's Mandate is to be Carried Out?
p. 1 - 3

RELATED DOCUMENT Impact Assessment and Review Policy

WHAT PARKS POLICIES APPLY TO YOUR PROJECTS?

SUMMARY This table lists some important Parks policies which apply to your projects and outlines the main intent of each.

POLICY	MAIN INTENT
Impact assessment and Review (1.2)	• the potential impacts of our projects will be identified, measured and evaluated • the consequences of any proposed project will be incorporated early in the planning process in any decision to proceed with, modify or reject the project
Research (1.5)	• we will study how best to meet the needs of the public
Facilities and Services (2.4)	• we will make sure that the facilities and services needed for public access, understanding and enjoyment of the parks are provided and maintained according to Parks standards • we will make sure that our facilities and services suit each particular situation, in terms of their type, location, scale, design and means by which such facilities and services are provided
Regional Integration (3.3)	• act in a manner sensitive to local concerns • co-operate with local agencies to resolve impacts in a fashion compatible with its objectives • strive to fulfil its mandate in ways which are beneficial to surrounding regions

FACT Parks Directive 2.2.2 **Socio-Economic** Analysis and Impact Assessment in Project Planning addresses these important policy concerns.

RELATED PAGES How Parks Service Policies Relate to Overall Government Plans, p. 1 - 4

RELATED DOCUMENT Parks Directive 2.2.2 - Socio-Economic Analysis and Impact Assessment in Project Planning

WHAT SPECIFIC PLANS ARE DEVELOPED FOR PARK MANAGEMENT?

SUMMARY TABLE

This table outlines the plans used in park management.

TYPE OF PLAN	WHAT IT CONTAINS
Park Service Long-Term Capital Plan	• the Treasury Board approved strategy for managing the capital program within the proposed reference level • recapitalization of existing facilities is a Parks priority • sets out the project planning and approval process which is the basis of Parks' delegated spending authorities
Park Management and Activity Plans	• approved development and land use concepts • approved management practices
Park Multi-year Operational Plans	• identifies project's approved resources and phasing for the initial five years of the plan

RULE

Plans for major projects are approved in stages in either the Multi-year Operational Plan or by means of a special submission.

STAGE TABLE

This chart shows the general timing and sequence of stages for the approval of a major project.

STAGE	ACTION	STARTS IN...	RESULTS IN...
1.	Identify a problem or need	Planning Year 3	Project Definition Approval
2.	Complete planning, feasibility studies and research	Planning Year 2	Preliminary Approval
3.	Complete any design work	Planning Year 1	Effective Approval
4.	Start the project	Current Fiscal Year	Project Delivery

RELATED PAGES

What are the Stages for a Major Project? p. 2 - 2

THE PROJECT PLANNING PROCESS

MODULE 2

TABLE OF CONTENTS

MODULE TWO: THE PARKS PROJECT PLANNING PROCESS - LEARNING OBJECTIVES

OBJECTIVE

When you have finished this module, you will be able to:

- describe the socio-economic studies required at each stage of project planning.

RELATED PAGES MATERIAL

RELATED Module One: The Planning System

WHAT ARE THE STAGES FOR A MAJOR PROJECT?

DEFINITION

Project refers to the purchase, development or alterations to a facility, service or other asset resulting in changes in capability or performance.

DESCRIPTION

Projects are distinct from on-going operations in that they have a definite start and finish. Projects include:

- property acquisition
- construction of visitor facilities
- major contracts or agreements
- some grants

CLASSIFICATION TABLE

The following socio-economic studies or tasks are required at these stages of project planning.

STUDIES OR TASKS	FOR STAGE
• Visitor Market Analysis • Benefit Cost Analysis • Socio-economic Impact Assessment	PROJECT CONCEPT
• User Projections • Life-cycle Cost Analysis • Regional Socio-economic Impact Studies	PROJECT DEFINITION
• Review and revision of above studies or tasks if necessary	PRELIMINARY DESIGN

PREVIEW

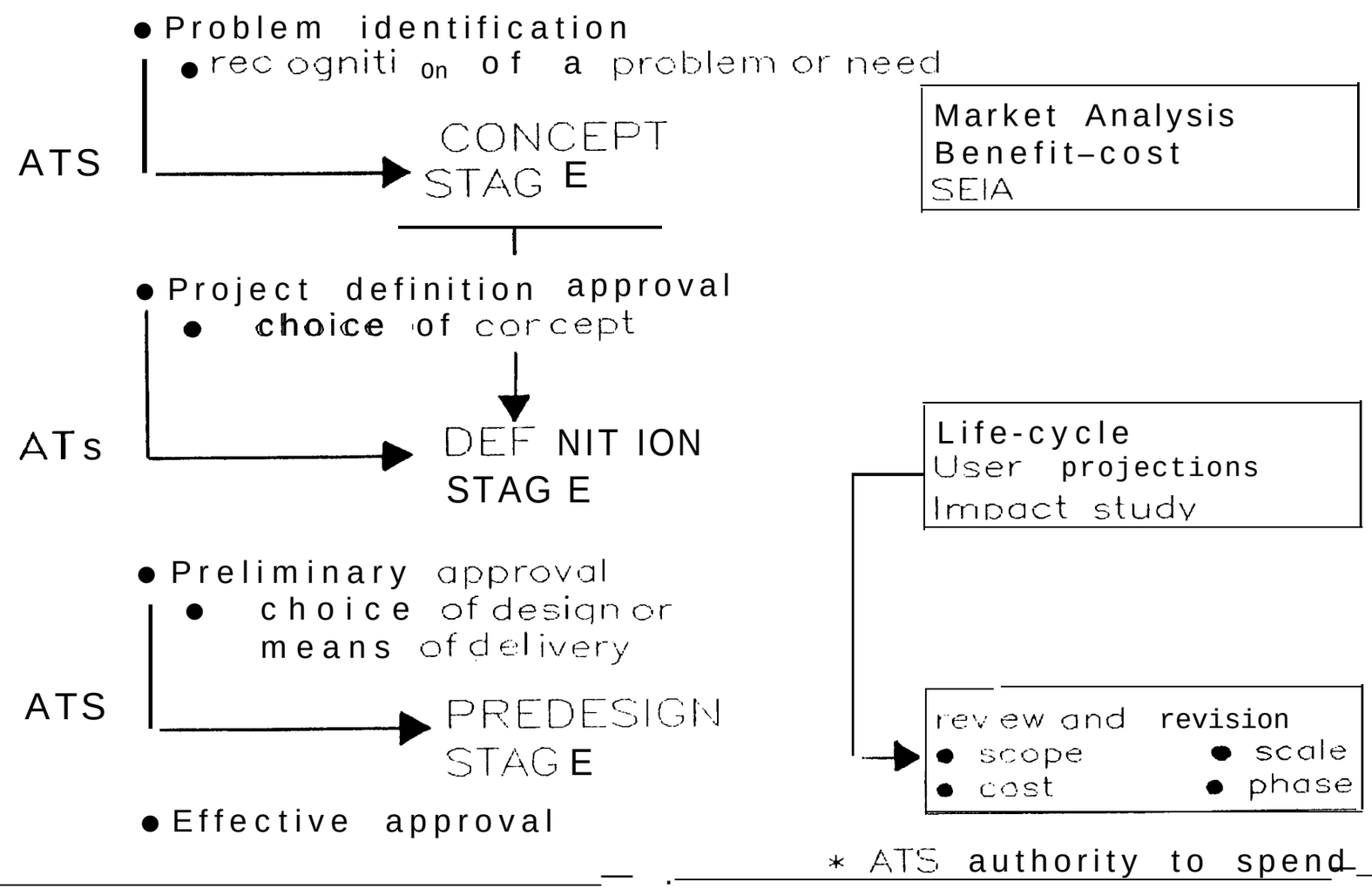
This module describes the studies or tasks required in more detail.

RELATED PAGES

What Specific Plans are Developed for Park Management?
p. 1 - 6

FIGURE 2.1

PLANNING STAGES



WHAT HAPPENS AT THE PROJECT CONCEPT STAGE?

INTRODUCTION

The Concept Stage is the first stage in the planning of a Parks project.

DESCRIPTION

The Concept Stage begins when Parks managers decide that a project may be required to respond to a problem or need. This decision may result from an Operational review or the need for the project may have been foreseen in previously approved management plans.

In the Concept Stage, Parks managers must establish whether the project is really needed. This is usually done through several preliminary studies:

- Visitor Market Analysis
  - forecasts the demand for the proposed project
  - helps match visitors' needs and services offered
- Benefit-Cost Analysis
  - looks the extent to which a need will be met
  - helps identify the form of the project which will best meet the need
- Socio-Economic Impact Assessment
  - helps identify and rate the secondary impacts of the project on the local region, whether positive, negative or neutral
  - helps determine whether enough information exists to allow Parks to deal with the negative impacts satisfactorily

The Concept Approval is given when managers:

- agree to the need for the project
- approve the global concept and budget in principle
- approve the workplan and budget required to complete the next stage - Project Definition.

RELATED PAGES

What are the Stages for a Major Project?
p. 2 - 2

RELATED DOCUMENT

Management Directive 2.2.2

RELATED MATERIAL

Module Three: Visitor Market Analysis

Module Four: Benefit Cost Analysis

Module Five: Socio-Economic Impact Assessment

WHAT HAPPENS AT THE PROJECT DEFINITION STAGE?

INTRODUCTION

The Project Definition Stage is the second stage in the planning of a Parks project.

DESCRIPTION

In the Project Definition Stage, Parks managers must determine in detail now the project will be implemented. This is usually done through several detailed studies:

- User Projections
  - estimate peak loadings for design purposes
  - helps plan the scale, capacity, level of service siting and layout
- Life-cycle Cost Analysis
  - looks at several ways to meet the need
  - helps ensure that the least expensive design or means of delivery has been found
- Regional Socio-economic Impact Studies
  - estimates the impact on the region and the public
  - recommends and costs remedial action for negative impacts, where required; for example, the cost of compensating someone whose business would be completely shut down for a year while the project is being built
  - identifies positive spinoffs from undertaking the project

The Preliminary Approval is given when managers:

- agree to the detailed description of the project
- approve the spending of funds for the design work required in the Preliminary Design stage

COMMENT

No further studies are normally required at the Preliminary Design Stage, unless there are major changes in the scope, scale or phasing of the project, in which case, it may be necessary to review and revise the recommendations of previous studies.

RELATED PAGES

What are the Stages for a Major Project? p. 2 - 2

RELATED DOCUMENT

Management Directive 2.2.2

RELATED MATERIAL

Module Six: User Projections

Module Seven: Life-Cycle Cost Analysis

Module Eight: Regional Socio-economic Impact Studies

MODULE 3: Visitor Market Analysis

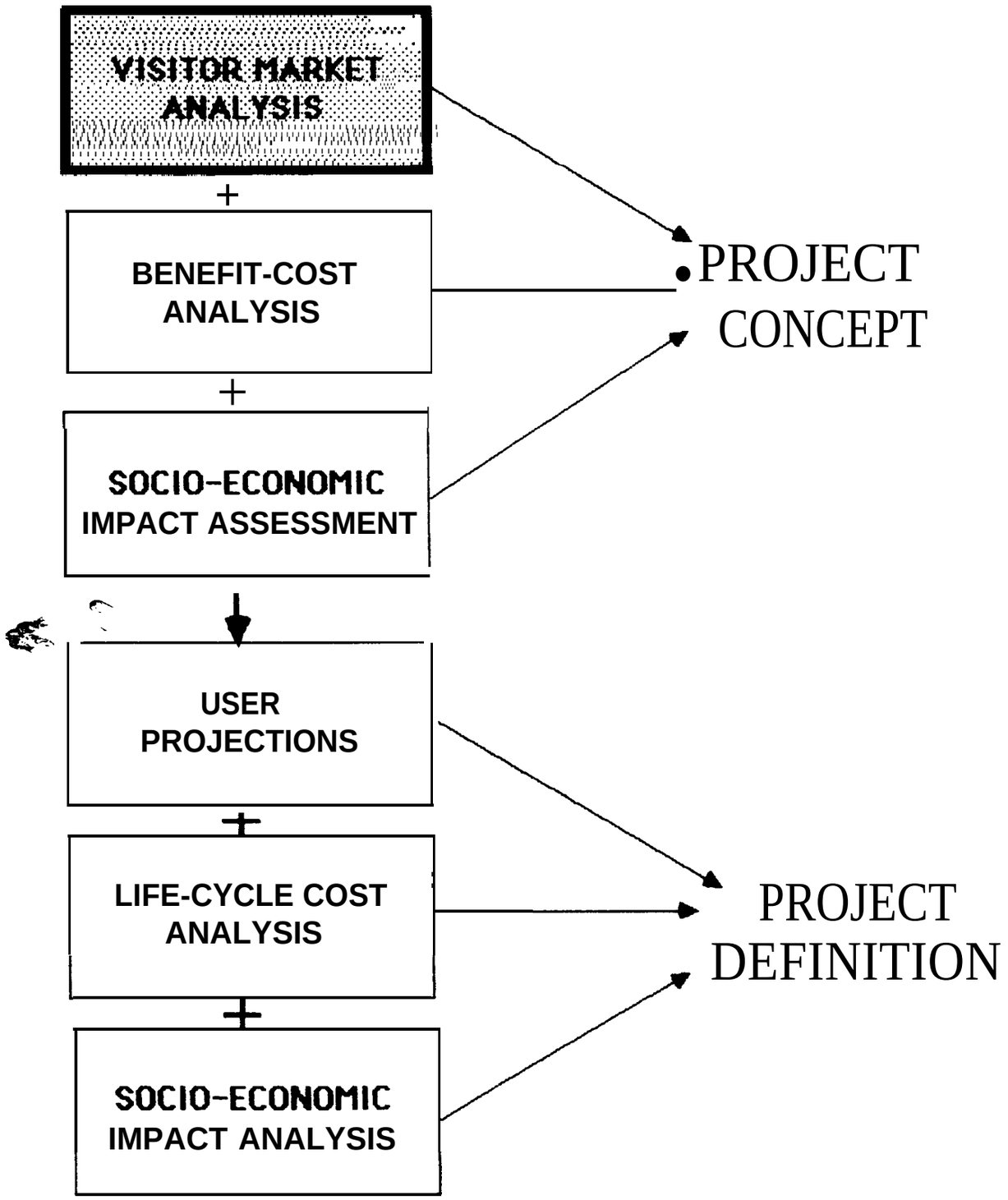


TABLE OF CONTENTS

MODULE THREE: VISITOR MARKET ANALYSIS--LEARNING OBJECTIVES

OBJECTIVE

When you have finished this module, you will be able to:

- describe how visitor markets are analyzed during the Concept stage of project planning, including:
  - Trend Analysis
  - Market Position Analysis
  - Segmentation
  - Demand Analysis
  - Option Analysis
  - Marketing Strategy and Mix

RELATED PAGES

What Happens at the Project Concept Stage? p. 2 - 3

RELATED MATERIAL

Module Six: User Projections

OVERVIEW OF VISITOR MARKET ANALYSIS

REVIEW

In the Concept stage of Parks project planning, you undertake only those studies necessary to support the need for the project. Visitor Market Analysis is the first of a series of important studies that might be conducted at this stage.

PURPOSE

In Visitor Market Analysis, you identify the needs and wants of various park user groups. Later, in your project planning, you use this information to justify the scope, scale or operating capacity of your project, and to guide future marketing efforts.

PREVIEW

This module describes Visitor Market Analysis.

OVERVIEW

To give you an idea of the scope of Visitor Market Analysis, this table lists the questions that are answered in each major step and sub-step.

MAJOR STEPS	QUESTIONS TO BE ANSWERED	SUB-STEPS
Assess Environment	What is likely to happen in the future that would affect the need for this project?	Trend Analysis
Assess Visitor Use	How does this project fit in with the other facilities & services park visitors use?	Market Position Analysis
	Who needs or wants these facilities and services?	Segmentation
	How many visitors will use this project?	Demand Analysis
	How can we respond to capacity problems and still satisfy visitor needs and wants?	Option Analysis
Make Decisions	What constraints limit our choice of response?	Corporate Analysis
	Who should we aim to serve?	Targets
	What should we offer?	Goal Setting
	How should this project serve users?	Positioning
	What strategy will we pursue and actions should we take to reach our targets and goals?	Marketing Strategy

RELATED PAGES

TREND ANALYSIS

DEFINITION

A Trend Analysis looks at the Parks' external social and economic environment to answer the question:
"What is likely to happen in the future that would affect our response to visitors' needs and wants?"

SUMMARY TABLE

This chart describes trends that should be examined.

TYPE	DESCRIPTION

Long Range Secular Trends	• Long-run changes likely to affect capacity allocation decisions within the next 3-5 years
	• Examples:
	  • Technological changes:
	  • smaller passenger vehicle loadings
	  • lightweight clothing and equipment
	  • advance reservation systems
	  • Policy and regulatory trends:
	  • emphasis on "user pay" concept
	  • air transport deregulation
	  • Population trends
	  • slower growth rate
	  • aging population
	  • smaller, multi-earner households
	  • more Canadians will live in cities

Cyclical Economic Trends	• Recurrent changes in production and consumption, usually of 2-3 years duration, affecting our budget, tourism and park use forecasts
	• Examples:
	  • The purchasing power of the Canadian dollar has declined
	  • Visitors have less spare cash. They will take shorter more frequent vacation trips
	  • Consumers have more varied expectations
	  • Planned expansions and closures

Seasonal Trends	• Regular changes in operations which are similar from year to year
	• Examples:
	  • Weather
	  • Weekends, weekdays, holidays
	  • Arrival times of ferries, planes, etc.

Irregular Trends	• Short term effects of unusual events
	• Examples:
	  • Expo
	  • Olympics

RELATED PAGES

Overview of Visitor Market Analysis, p. 3 - 2

MARKET POSITION ANALYSIS

INTRODUCTION When you are finished your Trend Analysis, you are ready to examine the market position of the project.

DEFINITION Market Position Analysis is the process of assessing how the service role of the project compares with that of other facilities and services in the same market area. It is intended to answer the question:
"How does this project fit in with the other facilities and services park visitors use?"

PROCEDURE TABLE This table outlines the steps which should be completed in market position analysis.

STEP	DESCRIPTION
1.	Determine: • the rate of growth in the use of this service or facility over the last few years • how the use of this facility or service compares with the use of other similar facilities in the area
2.	Estimate what percentage of the capacity of the facility or service is currently being used.
3.	Assess the range of actual users relative to the desired range of users.
4.	Compare the unit costs for the level of service being provided at this facility or service with the unit costs for other comparable service offerings.

RELATED PAGES
Overview of Visitor Market Analysis, p. 3 - 2
Trend Analysis, p. 3 - 3
Segmentation, p. 3 - 5
Demand Analysis, p. 3 - 6
Option Analysis, p. 3 - 7

SEGMENTATION

INTRODUCTION — The park visitor market may be divided into user and receiver groups which differ in their level of interest or opportunity to use park facilities or services.

DEFINITION — Segmentation is the process of identifying and describing the groups which would actually or potentially use the project in order to answer the question:
"Who will need or want this service?"

SUMMARY — This table outlines some of the segmentation criteria used.

CRITERIA	VARIABLES	SPECIFIC INFORMATION NEEDED
Park Visitor Characteristics	Geographic	• Origin, distance travelled, and transportation mode used?
	Season	. Peak, shoulder, or off-season?
	Use	• First time or repeat visit?
	Trip	• Is the Park the main destination, a planned stopover or an impulse visit?
	Stay	• Overnight visit or day use?
	Socio-Demographic	• Age, sex, education • Official language • Visitor party size and composition
Attitudes and Opinions	Benefits sought	• Visitor purpose or motives . Visitor preferences, and expectations • Perception of visit • Satisfaction with facilities and services
Behaviour	Activity, usage and circulation patterns	• Recreational participation • Facility/service usage • Visitor duration

USE
- Service targets can be selected which can be reached with a distinct marketing strategy and mix.
- The most appropriate service and/or the most effective media can be chosen.
- More efficient use can be made of resources and duplication of effort can be minimized.

RELATED PAGES
Overview of Visitor Market Analysis, p. 3 - 2
Market Position Analysis, p. 3 - 4

DENAND ANALYSIS

DEFINITION

A Demand Analysis is an attempt to find out:

- "What problems are related to the capacity or level of service we offer?"
- "Are there any gaps in our facilities and services?"

DESCRIPTION

Three components of use of a facility or service are examined:

- The Effective Level of Use refers to the number of people who actually use a facility or service. This can be determined by examining
  - actual occupancy statistics
  - actual participation rates
  - actual pull-off rates
- The Deferred Level of Use refers to the number of people who would have used a facility or service but who were unable to do so because there was no space for them. This is seen in:
  - the number of nights overflow
  - the number of turnaways
  - the frequency of overflow and turnaways
- The Potential Level of Use refers to the number of people who would use a facility or service if it was offered or conditions were practical for them to do so. This can be estimated by examining what prevents people from using a facility or service. Ask yourself:
  - Is this service offered at a convenient time?
  - What is the impact of poor weather conditions?
  - Is the facility or service physically accessible for the users?

SUMNARY TABLE

This table shows the problems related to level of use.

WHEN THE LEVEL OF USE...	THEN WE HAVE A PROBLEM BECAUSE. . .
• exceeds maximum capacity	• we are losing business or • damaging park resources
• exceeds optimum capacity	• our service quality declines
• is below optimum capacity	• our facilities are underused

RELATED PAGES

Overview of Visitor Market Analysis, p. 3 - 2
Option Analysis, p. 3 - 7

OPTION ANALYSIS

DEFINITION

Option Analysis is the process of developing feasible solutions to problems related to capacity or level of service or unmet visitor needs which were identified in the demand analysis.

Option Analysis answers the question:

"How can we respond to these problems and still satisfy Park visitors' needs?"

EXAMPLE ONE

Suppose your demand analysis identified the following problem:

- Park use currently exceeds the maximum capacity. You have frequent large numbers of turnaways and certain areas of the park are being overused

In your Option Analysis, you should now consider ways to increase the capacity or decrease the demand. These solutions might include:

- constructing temporary overflow facilities
- introducing a permit system
- closing certain facilities
- rotating the use of certain facilities

EXAMPLE TWO

Suppose your demand analysis identified a different Problem:

- Park use currently exceeds optimum capacity. You have frequent line-ups and overcrowding.

In your Option Analysis, you should now consider solutions such as:

- adopting a priority system
- putting a reservation system in place

EXAMPLE THREE

Suppose your demand analysis revealed wasted capacity.

In your option analysis, you would consider solutions such as:

- selective pricing for groups such as seniors or families
- promotions involving tour groups or special events
- changes to your delivery of service, perhaps changing the time, place or frequency.

RELATED PAGES

Overview of Visitor Market Analysis, p. 3 - 2
Demand Analysis, p. 3 - 6

CORPORATE ANALYSIS

INTRODUCTION

When you have finished assessing visitor use of facilities and services, you are ready to make decisions. At this point, you begin your Corporate Analysis.

DEFINITION

Corporate Analysis refers to a review of the policies, priorities, plans and resource constraints to answer the question:

"What constraints limit our response to the problem or needs that have been identified?"

EXAMPLES

In Corporate Analysis, you should examine items such as:

- Program priorities
- Budget constraints and reference levels
- Management, area and service plans

COMMENT

Corporate constraints affect the feasibility of a project. A project is feasible only when it is:

- within our means
- and within our mandate

RELATED PAGES

Overview of Visitor Market Analysis, p. 3 - 2

RELATED DOCUMENT

Module One: The Planning System

SERVICE TARGETS

DEFINITION

A Service Target is a relatively small user or receiver group with similar needs and wants, for which it is feasible to develop a specific facility or service, or to which you want to direct marketing and promotional efforts.

When you select your service targets, you are answering the question:

"What specific user groups are we aiming to serve with this project?"

RULE

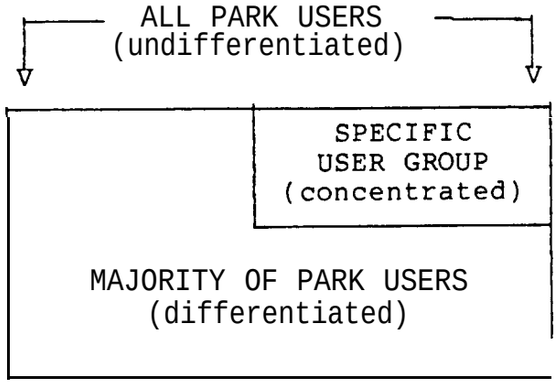
In selecting your service targets, you should use the information about user groups that you identified in the Segmentation analysis.

FACTS

- If your service target includes all park visitors, it is called "undifferentiated" . This may happen when user groups are not easily identifiable, large enough or worth the cost involved.
- If your service target includes the majority of park users, two or more user groups, it is called "differentiated" . This target is more specific than an undifferentiated target.
- If you are aiming to satisfy the needs of a particular group, then your target is called "concentrated" . A "concentrated" target is the most specific of all.

DIAGRAM

This diagram shows the three types of service targets.



RELATED PAGES

Overview of Visitor Market Analysis, p. 3 - 2
Segmentation, p. 3 - 5

SERVICE GOALS

DEFINITION

A Service Goal is a statement of the cost, delivery date and performance required from a project.

When you set service goals, you answer the question: "What should we offer?"

DESCRIPTION

Performance specifications can include factors such as:

- more efficient service delivery
- enhanced user awareness
- increased usage
- fairer pricing

EXAMPLES

Below are four examples of specific measurable goals:

Example One

Implement design modifications allowing the Park to reduce operating expenditures by five percent

Example Two

Increase awareness of service offerings among senior citizens who participate in bus tours by thirty percent

Example Three

Modify the design so that the park can close-out two campground loops to maintain the level of use at sixty percent occupancy in order to control operating costs.

Example Four

Reduce fees to encourage the use of less popular campgrounds

RELATED PAGES

Overview of Visitor Market Analysis, p. 3 - 2

POSITIONING

INTRODUCTION

You are now ready to determine how you can change what we offer so that it more closely matches what visitors need and want.

DEFINITION

Positioning is a conscious effort to identify and vary project attributes which affect the use of a facility or service.

Position refers to the client service role of the project within a visitor market. When you determine the position of a project, you answer the question:
"How should this project serve the user?"

ROLE

A park's primary role is to provide facilities and services to users who are not adequately served elsewhere by other means. This must be done within the mandate of the Parks Service and within the scope of its resources.

FACT

Parks has achieved a readily identifiable image so that visitors have come to expect certain services at a given cost and with a certain degree of consistency.

RULE

In positioning a facility or service, you need to balance the cost and potential visitor use.

COME???

Remember many of the changes which could make our facilities and services more attractive to the public, do not result in increased costs.

RELATED PAGES

Overview of Visitor Market Analysis, p. 3 - 2
Segmentation, p. 3 - 5
Demand Analysis, p. 3 - 6

SELECTING YOUR MARKETING STRATEGY

DEFINITION

The Marketing Strategy consists of the approach followed to encourage visitors to take advantage or increase their use of our facilities and services.

DESCRIPTION

There are two main elements in a marketing strategy:

- Users
- Services

Your marketing strategy can take several forms, depending on which elements you emphasize:

- encouraging more use
- improving existing services
- attracting additional users
- providing new services

SUMMARY TABLE

The following table shows how the elements of the marketing strategy can be combined in different ways.

IF YOU WANT . . .	TO USE...	THIS STRATEGY IS CALLED. . .
Current users	Existing services	Market penetration
Current users	New services	Service development
New users	Existing services	Market development
New users	New services	Service diversification

COMMENT

You may also wish to discourage use to limit resource impacts.

RELATED PAGES

Overview of Visitor Market Analysis, p. 3 - 2
Service Targets, p. 3 - 9
Service Goals, p. 3 - 10

DEVELOPING A MARKETING MIX

DEFINITION

The Marketing Mix is a specific plan to carry out your marketing strategy.

DESCRIPTION

Your marketing mix has four key components:

PRODUCT refers to the capacity and level of service offered. This might include plans to:

- upgrade facilities to meet current standards
- expand capacity
- diversify existing offerings
- develop new facilities

PRICE refers to rate setting. There are various ways to set rates.

- Cost-based rates are intended to recover costs from users so that taxpayers' money can be allocated to other priorities.
- Going rates are intended to maintain the market by matching the rates charged by competitors offering similar services. With this rate structure, it is especially important to control costs.
- Demand-based rates are used to encourage or discourage use of a facility according to the ability and the willingness of the user to pay.

PLACEMENT refers to the time, place and frequency of delivery. It is important to:

- avoid duplication of effort
- identify unserviced areas
- assess other deficiencies

PROMOTION refers to methods for publicizing the facilities and services offered. In promoting your facilities and services, you should:

- identify the publics, audiences and interest groups which you wish to reach through your information, orientation and extension efforts
- recommend special incentives, such as off-season rates, discounts for target groups, special events

RELATED PAGES

Overview of Visitor Market Analysis, p. 3 - 2

MODULE 4: Benefit-Cost Analysis

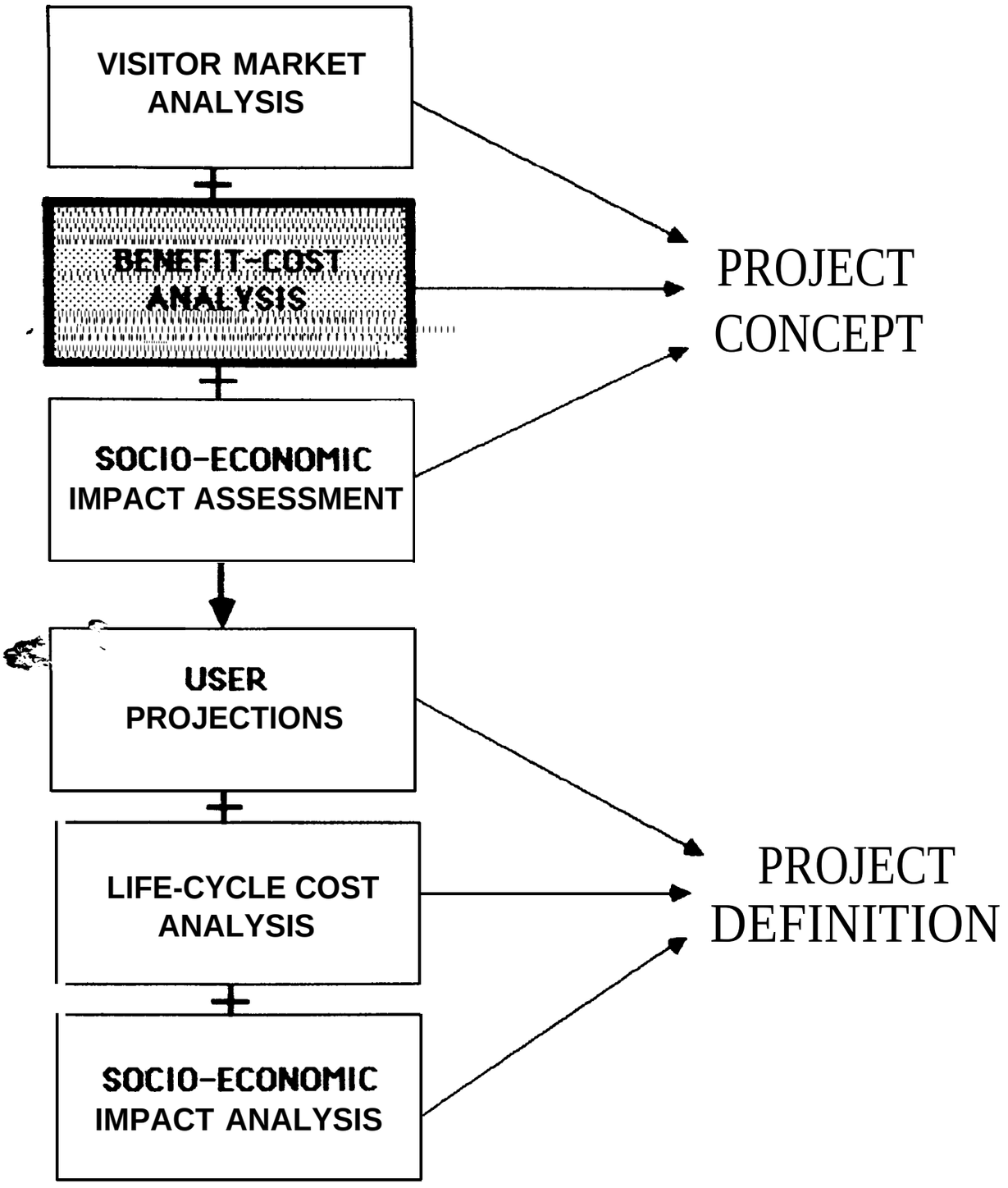


TABLE OF CONTENTS

MODULE FOUR: BENEFIT COST ANALYSIS--LEARNING OBJECTIVES

OBJECTIVES

When you have finished this module, you will be able to:

- describe how Benefit Cost Analysis helps you identify the best response to a Visitor or Park Management need

RELATED PAGES

What happens at the Project Concept Stage?
p. 2 - 3

RELATED MATERIAL

Module Seven: Life-Cycle Cost Analysis

FIGURE 4.1

PROJECT EVALUATION

BENEFIT –COST ANALYSIS	SOCIO– ECONOMIC	FINANCIAL
PERSPECTIVE	**Society**	**Government**
SCOPE (b&c)	**Taxpayer**	**Project sponsor**
	. **lost income,** consumption, & investment	● **budgeted revenues and expenditures**
VALUATION	**Social opportunity costs and time preference**	**Cash flow & disbursements**
	Discount rate	**Bond rate**
	● **highest and** best alternative use of **resources**	● **cost of borrowing &** debt **repayment**

OVERVIEW OF BENEFIT COST ANALYSIS

REVIEW

Visitor Market Analysis enabled you to identify the needs and wants of various park user groups. Benefit Cost Analysis is the next type of study that may be called for when there is more than one way to respond to a Visitor or Park Management need.

INTRODUCTION

Parks Canada undertakes projects in order to serve the public or to improve park management. Because the available resources to achieve these ends are limited, Parks Canada must ensure that any project which is undertaken makes the highest and best use of these resources which belong to Canadian society as a whole. When there is more than one way to satisfy a public or park management need, Benefit Cost Analysis helps Parks Canada to make the best choice for Canadians.

USE

Benefit Cost Analysis is a management decision making tool. It is used in order to:

- decide whether or not a public project should be undertaken
- choose which project option gives Canadian society the highest and best use of resources

DESCRIPTION

Benefit Cost Analysis is used to estimate all the opportunities gained and lost as a result of undertaking a project. This estimation is done from the perspective of Canadian society. Benefit Cost Analysis helps you to answer the question: Are Canadians better off if this project is undertaken?

FACT

In Benefit Cost Analysis you use the true social value of the opportunities which are gained or lost as a result of the project. You try to estimate the value of these opportunities in monetary terms, either directly or indirectly.

RELATED PAGES

Overview of Visitor Market Analysis, p. 3 - 2
Overview of Life-Cycle Cost Analysis, p. 7 - 2

MAJOR STEPS IN A BENEFIT COST ANALYSIS

PROCEDURE TABLE

The following table lists the major steps you should perform during a Benefit Cost Analysis.

STEP	ACTIVITY
1.	Identify the visitor or park management need and the potential responses to that need.
2.	Describe, in measurable terms, the potential responses to that need.
3.	Establish the feasibility criteria (constraints) that you will use to select potential responses for further study.
4.	Identify the benefits and costs to Canadian society of each potential response. What does Canadian society gain or lose if you choose a particular response?
5.	Value the benefits and costs of each response in monetary or non-monetary terms.
6.	Apply an interest (discount) rate to estimate the present value to society of the resources used and returns expected from the project.
7.	Choose the response which is most beneficial to Canadian society.
8.	Check your recommended choice of response. How sensitive is it to major changes in the assumptions or estimated values used in the analysis?

COMMENT

The steps of a Benefit Cost Analysis which you find on this page have been simplified and stated in everyday language. The purpose of this is to allow you to understand the basic process that you should follow.

PREVIEW

The following pages will explain each of the steps of a Benefit Cost Analysis in more detail.

RELATED PAGES

STEP 1: IDENTIFY PROJECT OPTIONS

INTRODUCTION

The first step in carrying out a Benefit Cost Analysis is to identify project options. This involves:

- identifying the problem
- identifying the potential responses to that problem

DEFINITION

A project option is a proposed response to a Park Management or Visitor need. It is not concerned with the design or delivery but the need and best form of a project.

DESCRIPTION

Problem identification involves an analysis of the need. If the purpose of the project is to respond to a visitor need, the problem identification may already have been done during the Market Analysis. If the purpose of the project is to improve Park management, the problem will be identified during Benefit Cost Analysis. Identification of potential responses to the problem involves exploring potential ways in which the identified need can be met. One potential response may be to not undertake the project at all.

EXAMPLE

The following is an example of a problem and potential responses to it. Because the project serves the public, problem identification would likely have been done during the Market Analysis.

PROBLEM:
On weekends during July and August we usually have at least twenty recreational vehicles (rv's) wanting to use the campground and nowhere to put them. This sometimes also occurs after Labour Day.

POTENTIAL RESPONSES:

- continue to turn these visitor parties away or offer them any tent sites that are available
- build a temporary overflow campground with the necessary services
- add more recreational vehicle sites or convert tent sites in the existing campground
- develop a new campground elsewhere in the park

RELATED PAGES

Overview of Visitor Market Analysis, p. 3 - 2
Major Steps In a Benefit Cost Analysis, p. 4 - 3

STEP 2: DESCRIBE PROJECT OPTIONS

INTRODUCTION

The second step in a Benefit Costs Analysis is to describe all project options you have identified in measurable terms.

RULE

Each project option must be described in measurable terms.

DESCRIPTION

When you describe each project option, you should include:

- the project's economic life
- the date it will enter into service, and
- the performance level expected

The economic life of a project is the period of beneficial occupancy or use before its capacity has been reached or the level of service provided is no longer acceptable. When this point has been reached major changes or total replacement will have to be considered. The economic life does not necessarily equal the physical life of a project nor does it include the lead time necessary to plan, design or deliver the project. The service or occupancy date is the date the project will be ready for use. Performance levels include capacity, level of service and revenue targets.

EXAMPLE

The following is a simplified description of three project options responding to the problem of where to put the rv's:

OPTIONS	TEMPORARY OVERFLOW	MODIFY EXISTING	BUILD NEW
ECONOMIC LIFE (e.g. 15 yrs)	short term	medium range	long run
OCCUPANCY DATE (e.g. FY 89)	now	1987-89	1990-2005
LEVEL OF SERVICE (e.g. electrical plug-ins)	n/a	central	site 2 or 3 way hookups
CAPACITY (e.g. usage rates)	peak periods only	limited infrequent demand	growth or change in demand

FACT

Project options do not necessarily have the same economic life nor satisfy the need to the same extent.

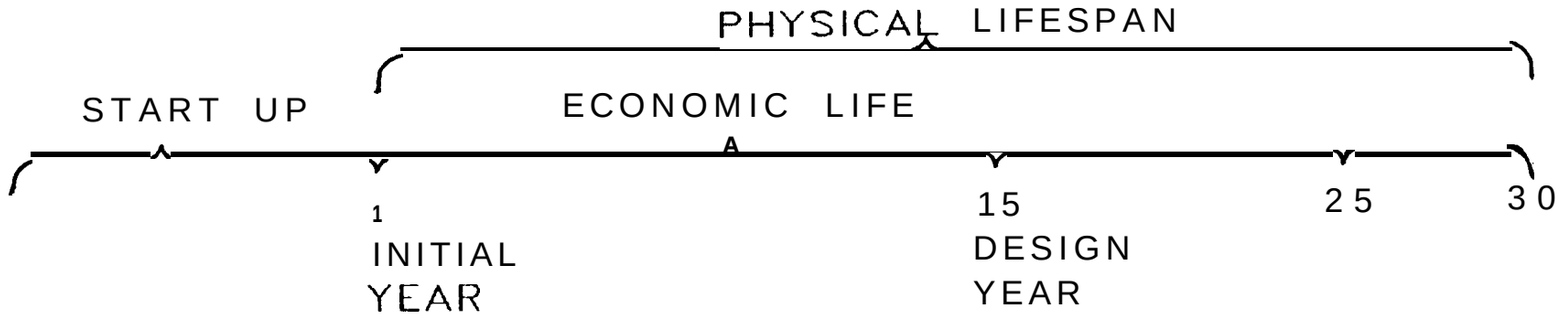
RELATED PAGES

Identify Project Options, p. 4 - 4

FIGURE 4.2

PROJECT ECONOMIC LIFE

PHASE –	DEVELOPMENT – design & construction	OCCUPANCY OR USE – routine repairs & maintenance	RENEWAL – alterations or replacement
COSTS	single + . . .	annual . . . +	periodic



NOTES: Three factors influence the economic life of a project:

1) CAPACITY – when use exceeds the design capacity
2) FUNCTION – when the use is changed
3) DETERIORATION – when the level of service must be rester-ed

At the **end** of a project's economic life, we have to decide whether or not the additional investment required to extend the project's economic life is less costly than replacement.

STEP 3: IDENTIFY PROJECT CONSTRAINTS

DEFINITION Constraints are feasibility criteria which a project option must meet in order to receive further consideration.

INTRODUCTION After identifying your project options and describing them, you should identify any constraints. This is the third step in Benefit Cost Analysis.

USE Any option that does not meet a constraint is eliminated from further consideration.

CLASSIFICATION TABLE The following table lists different types of constraints and provides examples of the kind of conditions or performance levels which a project option must meet.

TYPE OF CONSTRAINT	EXAMPLES
LEGAL, POLICY, & ADMINISTRATIVE	• Expropriations regulations • Parks Act • Respect for native claims • Leasehold regulations
BUDGETARY	• Regional reference levels • Revenue targets • Person-years available
TECHNOLOGICAL	• Engineering feasibility
SOCIAL	• Health or safety standards • Environmental Assessment Review Process • Protection of property

EXAMPLE Parks will not undertake a project which would result in progressive or permanent damage to the natural and cultural resources under its protection.

RELATED PAGES Major Steps In a Benefit Cost Analysis, p. 4 - 3

STEP 4: IDENTIFY PROJECT BENEFITS AND COSTS

INTRODUCTION

After identifying and describing your project options and constraints, you should identify the primary benefits and costs of your remaining options. This is the fourth step in Benefit Cost Analysis.

DEFINITIONS

Benefits and Costs are simply opportunities gained or lost as a result of undertaking the project.

Primary benefits and costs consist of the opportunities gained or lost by the sponsors or users of the project.

Secondary benefits and costs are impacts on third-parties and by-standers, such as local employees, suppliers and residents.

RULE

Potential opportunities in excess of expected use are not valued nor included in a benefit-cost analysis.

Secondary benefits and costs, also referred to as socio-economic impacts, are not included in the analysis.

CLASSIFICATION TABLE

This table lists the Benefits and Costs which are included and excluded from a Benefit Cost Analysis.

	INCLUDED PRIMARY	EXCLUDED SECONDARY
BENEFITS	• recreational days of use • cost and time savings • visitor satisfaction • decreased risk to life and health • reduced pollution	• job and income creation • new business opportunities • extra tourist spending • government investment
COSTS	• selling price • rents foregone • lost production from previous use • wage rates • materials required	• quality of life concerns • changes in property values • traffic diversions or disruptions

RELATED PAGES

Major Steps In a Benefit Cost Analysis, p. 4 - 3

STEP 5: MEASURE THE BENEFITS & COSTS OF YOUR PROJECT

INTRODUCTION

You can measure the benefits and costs of your project options using either monetary or non-monetary values. This is the fifth step in Benefit Cost Analysis.

DEFINITION

MONETARY VALUATION includes prices which regulate consumption or use.

- o Market prices are the prices at which land, materials, goods and services are bought and sold.
- o Shadow prices are the prices that either:
  - o Society pays for the resources used in a project or
  - o a Visitor is willing to pay for use of a facility or service.

NON-MONETARY VALUATION includes any measure or project output such as the services provided or resource changes.

RULES

Where possible, market prices should be used to value the project's benefits and costs.

When there is no market price for the resources used or facilities/services are provided at little or no cost to the user, shadow prices should be considered.

Non-monetary valuation should only be used:

- o when there is no market price for project benefits, or
- o when output is a better indicator or a project's value.

EXAMPLES

This table gives you examples of the ways in which benefits or costs can be valued.

	WHAT IS BEING VALUED?	IN WHAT WAYS CAN YOU VALUE IT?
COSTS	Construction	• $ per site, m^2 or kilometre
	Compensation	• lost opportunities
BENEFITS	User Fees	• revenue
	Efficiency	• time and cost savings
	Services	• nights of accommodation • recreational days provided • enquiries answered • vehicle trips
	Safety	• fewer accidents or injuries
	Resource Quantity/Quality	• sightings • catch rates • pollution counts

STEP 6: DISCOUNT **MONETARY BENEFITS AND COSTS TO PRESENT VALUE**

INTRODUCTION

The sixth step in Benefit Cost Analysis is to express any monetary values used in measuring the benefits and costs of your project options in todays terms. We do this through the application of a discount rate.

DEFINITION

The discount rate is a social interest rate (currently 10%) set by Treasury Board which is used to evaluate investments in government projects.

DESCRIPTION

The use of a discount rate helps evaluate the cost and time value of the funds used in the project from the viewpoint of Canadian society.

Public spending diverts resources from private use through taxation. Therefore, this discount rate must be greater than the interest charged for private consumption and investment. Returns from the funds used in the project must be equal to or greater than the long term return (before taxation and free of inflation) of capital invested in the private sector. Otherwise, national income would be lower.

USE

The discount rate allows you to compare all the costs incurred and benefits received over the lifespan of the project in todays dollars. It helps answer the questions:

- How much money do we need today to pay for all the future costs of the project?
- How much are all the future benefits of the project worth to us today?

The discount rate also allows you implicitly to compare the proposed project with private sector alternatives.

RULE

The monetary costs and benefits included in a Benefit Cost Analysis must be discounted to their present value.

FACT

Only monetary costs and benefits can be discounted.

The discount rate does not include inflation, subsidies or taxes.

The discount rate is not a bank interest rate.

RELATED PAGES

Major Steps In a Benefit Cost Analysis, p. 4 - 3

FIGURE

DISCOUN

EXAMPLE Present value of a
P / F

Year	5%
1	.9524
2	.9070
3	.8638
4	.8227
5	.7835
10	.6139
15	.4810
20	.3769
25	.295.3
50	.0872

At a 10% discount r
costing **$500,000, w**
At a **5% discount ra**
worth $188,450.

FIGURE 4.4

DISCOUNT RATE

EXAMPLE

Present value of uniform series of annual amounts P/A

	Discount Rates		
Year	5%	10%	15%
1	.952	.909	.870
2	1.859	1.736	1.626
3	2.723	2.487	2.283
4	3.546	3.170	2.855
5	4.329	3.791	3.352
10	7.722	6.145	5.019
15	10.380	7.606	5.847
20	12.462	8.514	6.259
25	14.094	9.077	6.4-6'4
50	18.256	9.915	6.661

If the! maintenance of a facility costs $10,000 per year, over the next ten years, maintenance will amount to $61,450 in todays dollars (at a 10% disco unt rate). At 5% discount rate, the maintenance costs will amount to $77,220.

STEP 7: COMPARE PROJECT OPTIONS

INTRODUCTION

After you have measured the costs and benefits of your project options and discounted them to present value, there are a number of investment criteria from which you can choose to compare these options. Comparing your options is the seventh step in Benefit Cost Analysis.

DEFINITION

Net Present Value (NPV) is the difference between discounted benefits and discounted costs.

Unit cost is the price of producing an additional unit of project output.

DESCRIPTION

If you have been able to use monetary valuation, the best way to compare options is to subtract the NPV of benefits minus NPV costs. The option with the most positive net benefits is preferred.

The NPV method is the most accurate because it focuses on absolute return of the investment. It can be used to decide whether or not to undertake the project and to rank alternatives.

When it is not possible to value any of the benefits of a project option in monetary terms, cost effectiveness criteria can be used. Cost effectiveness criteria, the lowest "unit cost", ensures that the services are being supplied in the most efficient way.

The benefits of park projects can be measured in terms of output (such as campernights provided; enquiries answered; accident reduction; pollution abatement; or species viability).

RULES

The project option which has the most positive NPV is the preferred option.

No project option is accepted which has a NPV less than zero.

The most cost-effective solution is the one which has the lowest "unit costs".

FIGURE 4.5

BENEFIT–COST CRITERIA

1) MUTUALLY EXCLUSIVE CHOICES

DISCOUNTED	OPTION (A)	OPTION (B)
Benefits	3,000	5,000
Costs	2,000	12,000
Net (B–C)	1,000	3,000
Ratio (B/C)	1.5	2

NOTES: 1.1 B–C "profit or net worth
B/C "interest_principal"

1 2 Although option B has the greater returns, option A has less risk

FIGUR

CO ST-EFFEC$I'l

1) **MINIMUM COST FOR A**

OPTION	COST
(A)	$11,000
(B)	$22,000
(c)	$33,000

Option (A) has the lo

2) **OPTIMUM OUTPUT FOR TH**

OPTION	COST
(A)	$2,000
(B)	$4,000
(c)	$6,000

Option (B) has the best

3) **MAXIMUM OUTPUT FOR A**

OPTION	COST
(A)	$27,500
(B)	$30,000
(C)	$35,000

Option (C) serves the m

ALTERNATIVE INVESTMENT CRITERIA COMPARED

INTRODUCTION

There are many investment criteria which may be used, however, none of these criteria are an accurate indication of the monetary value of the project as the NPV benefits minus NPV costs.

DESCRIPTION

If you have been able to use monetary valuation, the best way to compare options is to subtract the NPV of benefits minus NPV costs. The option with the most positive net benefits is preferred.

When it is not possible to value any of the benefits of a project option in monetary terms, cost effectiveness criteria can be used. Cost effectiveness criteria, the lowest "unit cost", ensures that the services are being supplied in the most efficient way.

CLASSIFICATION TABLE

INVESTMENT CRITERIA	COMMENTS
Net Present Value (NPV) NPV benefits minus costs is greater than zero	Absolute return on investment Can rank options
Benefit Cost Ratio (BCR) NPV benefits divided by costs is greater than one	Relative return per dollar invested. Indifferent to scale or level of investment required
Internal Rate of Return (IRR) NPV benefits minus costs equals zero Should equal private opportunity costs of capital	Maximum interest rate which could be paid if funds were borrowed Can result in choice of option with lower NPV
Cost Effectiveness Criteria Minimum cost for a given level of output Optimum output for a given level of investment (after which unit costs will increase) Maximum output for a given cost	Most efficient resource allocation Outputs may be difficult to measure More than one measure may be required

RELATED PAGES

STEP 8: CONDUCT A SENSITIVITY ANALYSIS OF YOUR ASSUMPTIONS

INTRODUCTION

Sensitivity analysis allows you to answer the question: Would a change in the assumptions or values I have used lead me to recommend another project option? Performing this sensitivity analysis is the eighth step in Benefit Cost Analysis.

DEFINITION

A sensitivity analysis is the systematic variation of key assumptions and estimated values to determine the effect of potential changes on the results of the Benefit Cost Analysis.

DESCRIPTION

You will first want to compare the most positive, best guess and least favorable possibilities for any assumption or value to ensure that the preferred option remains the same.

Then you will want to compare the relative ranking of the options over time to ensure that the recommended option is still the best one.

EXAMPLE

A recreation service is proposed. A BCA is done and the NPV of the project is $30,000. Three values are selected for sensitivity analysis: 1) discount rate, 2) relative price movements and 3) user demand. A sensitivity analysis is done using the "best and worst" case estimates for each input:

	DISCOUNT RATE 5%	10%	15%	PRICE OF ENERGY 10	20	30	USER DEMAND 3	2	1
NPV $(000)	50,	30,	20,	40,	30,	10,	60,	30,	10.

The analysis shows the degree of sensitivity of the results to changes in the values used in the analysis. In this example, the NPV will remain positive and the recreation service will still meet the acceptance criteria (i.e. that the worst case has an NPV greater than 0).

RELATED PAGES

Major Steps In a Benefit Cost Analysis, p. 4 - 3
Conduct a Sensitivity Analysis, p. 7-10

MODULE 5: Socio-Economic Impact Assessment

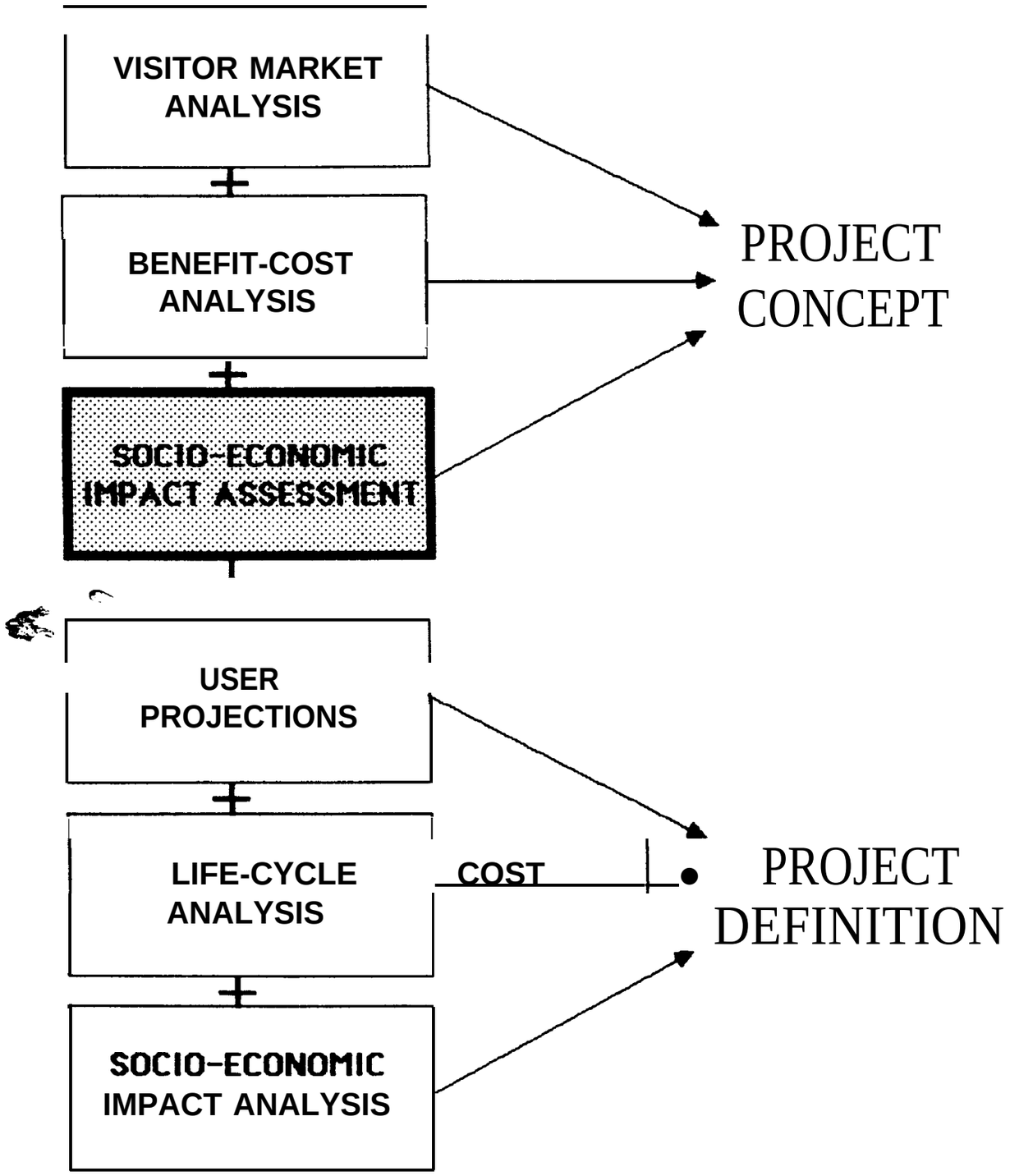


TABLE OF CONTENTS

MODULE FIVE: SOCIO-ECONOMIC IMPACT ASSESSMENT--LEARNING OBJECTIVES

OBJECTIVES

When you have finished this module, you will be able to:

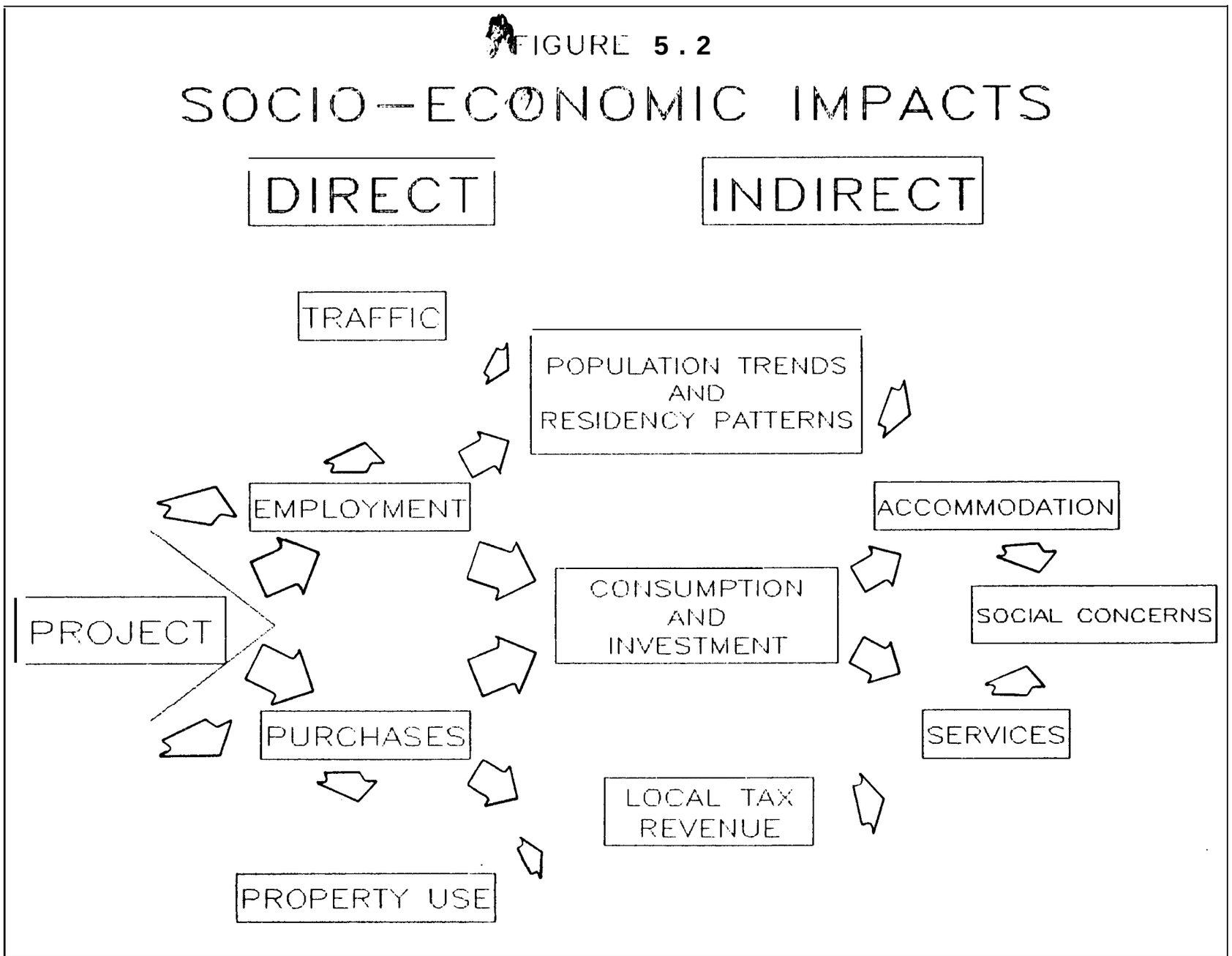
- describe how to identify and rate the secondary socio-economic impacts of projects
- state whether or not you have enough information to deal with them

RELATED PAGES: What happens at the Project Concept Stage? p. 2 - 3

RELATED MATERIAL: Module Eight: Socio-Economic Impact Analysis

FIGURE 5.2

SOCIO-ECONOMIC IMPACTS



STEP 2: DESCRIBE THE BOUNDARIES OF THE IMPACT AREA

INTRODUCTION

The second step in a socio-economic impact assessment is to describe the boundaries of the impact area affected by the project. You need to answer the question:

"Who would be made better off or worse off if this project were undertaken?"

DEFINITION

The boundaries of the project impact area are chosen on the basis of trade offs among

- the geographical area affected
- the physical location of the project
- the time period over which impacts will be studied
- the state of the art - our ability to measure and predict
- administrative considerations - social, economic and political realities

DESCRIPTION

The impact area of your project depends on:

- the characteristics and location of the park
- the size or scale of your project

EXAMPLE

The Trent-Severn Waterway is a long, narrow park in a populated area. A project in this park will have a larger and more diffused impact than at Nahanni, a large, isolated park.

COMMENT

The impact area may cover an area within the park, the park itself or it may include an entire region.

RULE

Your impact area must include those residents, businesses, and communities directly affected by your project.

RELATED PAGES

Major Steps in a Socio-Economic Impact Assessment, p. 5 - 3

STEP 3: RATE THE SOCIO-ECONOMIC IMPACTS

INTRODUCTION

When you have finished the screening phase, you should have a list of socio-economic impacts that potentially affect your project.

The next phase is to rate the possible consequences of each impact you have identified.

DESCRIPTION

When rating socio-economic impacts, you 90 through your checklist twice.

- First, for each potential impact type identified in the screening phase, you determine whether the consequences of this impact are:
  - positive
  - negative
  - neutral
  - unknown at this point
- Then, for each impact with either positive or negative consequences you decide whether it has:
  - major or minor importance.
  - long-term or temporary effects

DEFINITIONS

- Positive Impacts are those positive spinoffs for an individual, organization, community or other group, for example, job and income creation.
- Negative Impacts are those impacts which have an adverse effect on an individual, organization, community or other group, for example, direct competition with a private business.
- Neutral Impacts are those which have no apparent socio-economic effect, such as, a natural resource inventory.
- Unknown Impacts are those whose effect on various groups or individuals is not currently known, such as, the effect of a legal survey.

RULE

Negative impacts are of major importance whenever conditions should be imposed on the approval of the project because:

- the design, delivery or operation of the project will have to be modified at a cost
- there is a demand for compensation because of the project

SOCIO-ECONOMIC IMPACT ASSESSMENT

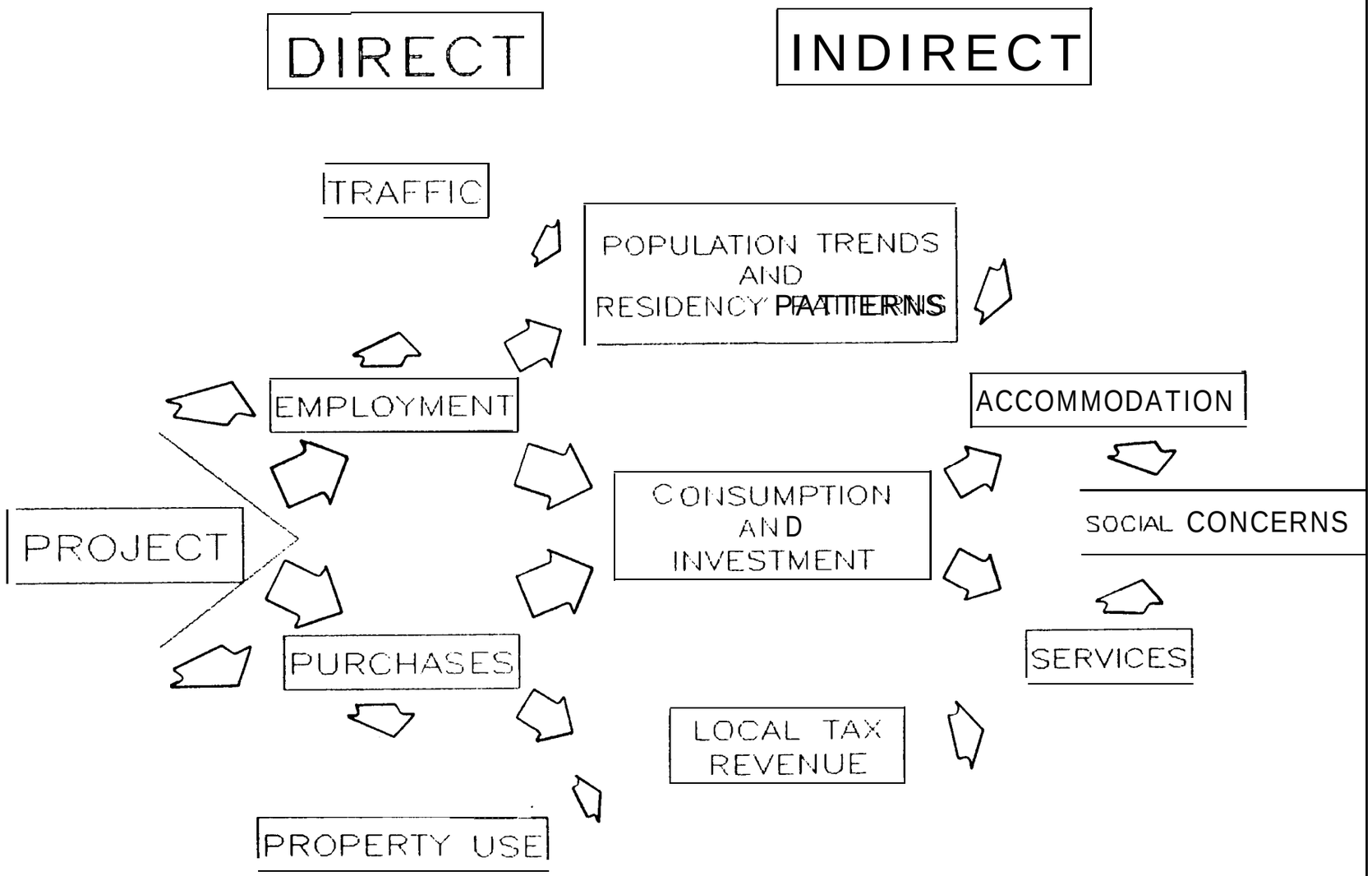
PA 'K Maintain Park. PROJECT. ...Roadwork.... ::::::	MANAGER ...General Works. .... TEC:$ 250,000. PYS: 8
SCREENING PROCESS (✓) Existing data sources ( ) Site reconnaissance (✓) Consultations (✓) Public input ( )	PERSONS CONSULTED ..Owner of Happy Valley..... ....*Motel..... (name/job Title) PUBLIC MEETINGS (place date)
STEP 1. SCREENING: IMPACTS YES [X] UNKNOWN [?] NONE [ ]	**STEP 3. ASSESSMENT:** SIGNIFICANCE POSITIVE (✓) NEGATIVE (-) NEUTRAL ( )

		PROJECT PHASE	
		CONSTRUCTION	OPERATION
NATURAL RESOURCE USE			
• commercial	[ ]	( )	( )
• domestic	[1	( )	( )
• native claims	[1	( )	( )
POPULATION & HOUSING	[1	( )	( )
EMPLOYMENT & INCOME	[1	( )	( )
BUSINESS VOLUME & INVESTMENT			
• construction	[1	( )	( )
• retail trade	[1	( )	( )
TRAFFIC & ACCESS	[1	( )	( )
TOURIST ACCOMMODATION & SERVICES			
• hotel, motel	[X 1	(-)	( )
• Campground	[ ]	( )	( )
• food services	[ ]	( )	( )
COMMUNITY			
• development plans	[1	( )	( )
• demand for public services	[ ]	( )	( )
• local tax base	[1	( )	( )
SOCIAL CONCERNS			
• health, safety & fairness	[ ]	( )	( )
• protection of property & the environment	[1	( )	( )
• quality of life	[ ]	( )	( )

STEP 2. DESCRIPTION: BOUNDARIES OF THE IMPACT AREA . . . Closure of access road to . . .	STEP 4. RECOMMENDATION 4.1 Proceed as planned ( ) 4.2 Modify - design ( )

FIGURE 5.2

SOCIO-ECONOMIC IMPACTS



STEP 2: DESCRIBE THE BOUNDARIES OF THE IMPACT AREA

INTRODUCTION

The second step in a socio-economic impact assessment is to describe the boundaries of the impact area affected by the project. You need to answer the question:

"who would be made better off or worse off if this project were undertaken?"

DEFINITION

The boundaries of the project impact area are chosen on the basis of trade offs among

- the geographical area affected
- the physical location of the project
- the time period over which impacts will be studied
- the state of the art - our ability to measure and predict
- administrative considerations - social, economic and political realities

DESCRIPTION

The impact area of your project depends on:

- the characteristics and location of the park
- the size or scale of your project

EXAMPLE

The Trent-Severn Waterway is a long, narrow park in a populated area. A project in this park will have a larger and more diffused impact than at Nahanni, a large, isolated park.

COMMENT

The impact area may cover an area within the park, the park itself or it may include an entire region.

RULE

Your impact area must include those residents, businesses, and communities directly affected by your project.

RELATED PAGES

Major Steps in a Socio-economic Impact Assessment, p. 5 - 3

STEP 3: RATE THE SOCIO-ECONOMIC IMPACTS

INTRODUCTION

When you have finished the screening phase, you should have a list of socio-economic impacts that potentially affect your project.

The next phase is to rate the possible consequences of each impact you have identified.

DESCRIPTION

When rating socio-economic impacts, you go through your checklist twice.

- First, for each potential impact type identified in the screening phase, you determine whether the consequences of this impact are:
  - positive
  - negative
  - neutral
  - unknown at this point
- Then, for each impact with either positive or negative consequences? you decide whether it has:
  - major or minor importance.
  - long-term or temporary effects

DEFINITIONS

- Positive Impacts are those positive spinoffs for an individual, organization, community or other group, for example, job and income creation.
- Negative Impacts are those impacts which have an adverse effect on an individual, organization, community or other group, for example, direct competition with a private business.
- Neutral Impacts are those which have no apparent socio-economic effect, such as, a natural resource inventory.
- Unknown Impacts are those whose effect on various groups or individuals is not currently known, such as, the effect of a legal survey.

RULE

Negative impacts are of major importance whenever conditions should be imposed on the approval of the project because:

- the design, delivery or operation of the project will have to be modified at a cost
- there is a demand for compensation because of the project
- there is public concern

PREVIEW

The next page gives an example of a completed socio-economic impact assessment checklist.

RELATED PAGES

SOCIO-ECONOMIC IMPACT ASSESSMENT

PARK Mountain Park PROJECT Roadwork	MANAGER General Works TEC:$ 250,000. PYS: 8
SCREENING PROCESS (✓) Existing data sources ( ) Site reconnaissance (✓) Consultations (✓) Public input ( )	PERSONS CONSULTED Owner of Happy Valley Motel (name/job Title) PUBLIC MEETINGS (place date)
STEP 1. SCREENING: IMPACTS YES [X] UNKNOWN [?] NONE [ ]	**STEP 3. ASSESSMENT:** SIGNIFICANCE POSITIVE (✓) NEGATIVE (-) NEUTRAL ( )

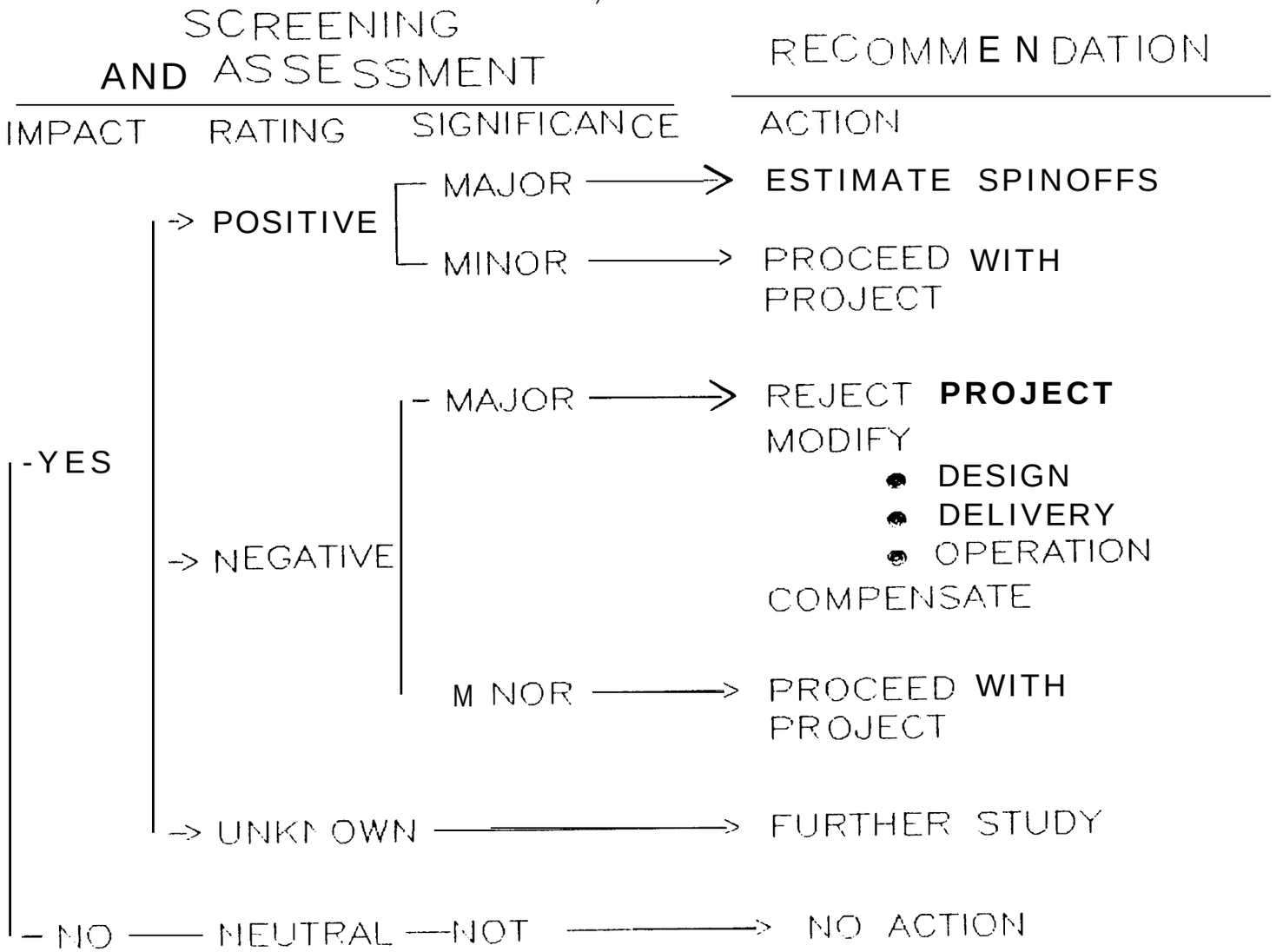
		PROJECT PHASE	
NATURAL RESOURCE USE		CONSTRUCTION	OPERATION
• commercial	[ ]	( )	( )
• domestic	[ ]	( )	( )
native claims	[ ]	( )	( )
POPULATION & HOUSING	[ ]	( )	( )
EMPLOYMENT & INCOME	[ ]	( )	( )
BUSINESS VOLUME & INVESTMENT			
• construction	[ ]	( )	( )
• retail trade	[ ]	( )	( )
TRAFFIC & ACCESS	[ ]	( )	( )
TOURIST ACCOMMODATION & SERVICES			
• hotel, motel	[X]	(-)	( )
• campground	[ ]	( )	( )
• food services	[ ]	( )	( )
COMMUNITY			
• development plans	[ ]	( )	( )
• demand for public services	[ ]	( )	( )
• local tax base	[ ]	( )	( )
SOCIAL CONCERNS			
• health, safety & fairness	[ ]	( )	( )
• protection of property & the environment	[ ]	( )	( )
• quality of life	[ ]	( )	( )

STEP 2. DESCRIPTION: BOUNDARIES OF THE IMPACT AREA Closure of access road 7P the motel during construction season	STEP 4. RECOMMENDATION 4.1 Proceed as planned ( ) 4.2 Modify - design ( ) delivery (✓) operation ( ) 4.3 Further study (✓) 4.4 Reject option ( )

COMMENTS:
Motel operator could feed & accommodate crew during road work. Parks should only pay for last business compensation package will have to be worked out.

FIGURE 5.3

SOCIO-ECONOMIC IMPACT ASSESSMENT



STEP 4: RECOMMEND ACTION BASED ON YOUR SOCIO-ECONOMIC ASSESSMENT

INTRODUCTION When you have finished rating the importance of all positive and negative impacts, you are ready to recommend action based on your socio-economic impact assessment.

DEFINITION Baseline phase or start-up period begins with project planning and ends just before the project is finally approved.

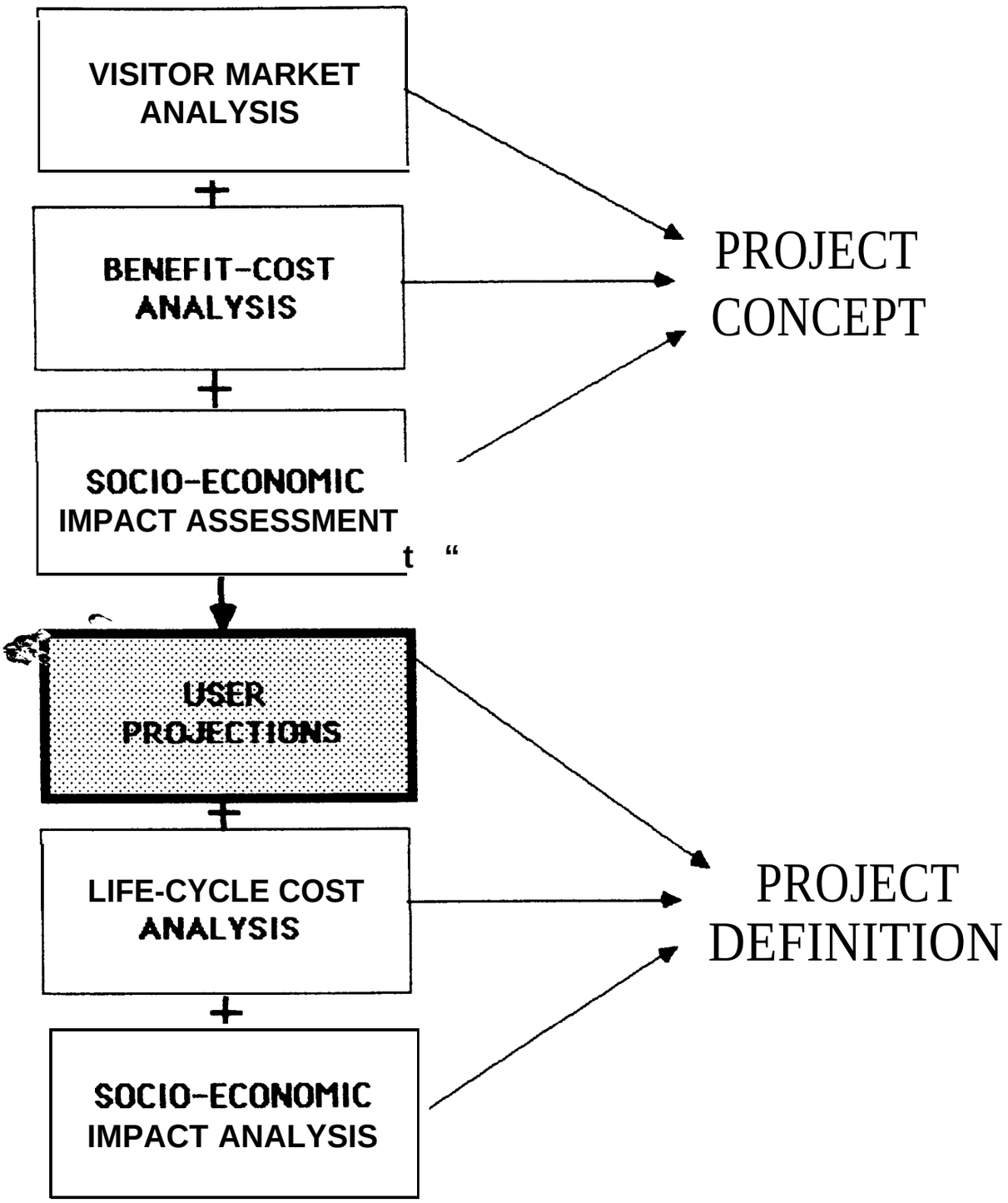
DESCRIPTION Your recommendations should include answers to the following questions:

- When will the impact occur?
  - during the baseline phase of the project?
  - during the construction or delivery phase?
  - during the operation phase?
- Will the impact be short-term or long-run?
- Will the impact occur more than once?
- If the impact occurs more than once, will the effect gradually get larger?

DECISION TABLE This table summarizes the appropriate recommendations for various situations.

IF THE SOCIO-ECONOMIC IMPACTS ARE...	THEN YOU SHOULD RECOMMEND THAT PARKS. . .
all positive or neutral	• proceed with project
mostly positive or neutral with some minor negative effects	• proceed with project • or make minor changes
positive or neutral with major negative effects	• modify the project • or get more information • or reject the project
all negative	• reject the project • or get more information

MODULE 6: User Projections



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MODULE SIX: USER PROJECTIONS--LEARNING OBJECTIVES

OBJECTIVE

When you have finished this module, you will be able to:

- describe how User Projections contribute to the choice of scale or operating capacity in the Project Definition stage of project planning.

RELATED PAGES

What happens at the Project Definition Stage? p. 2 - 4

RELATED MATERIAL

Module Three: Visitor Market Analysis

OVERVIEW OF USER PROJECTIONS

REVIEW

Project Definition is the second stage of Parks project planning. In it, you conduct whatever detailed studies are needed to develop the specifications for the design and delivery of the project. User Projections is an important study conducted at this stage.

PURPOSE

Design specifications are based on the level of use expected during a peak loading period. In User Projections, you estimate user loadings to ensure that the project design meets the need it was intended for.

EXAMPLE

For a Visitor Reception Centre, the level of use during peak loading determines design specifications such as:
- number of square meters of floorspace required
- number of litres of water to be handled

OVERVIEW

To give you an idea of the scope of User Projections, this table lists the questions answered in each step.

STEP	QUESTIONS TO BE ANSWERED
Describe peak period	• What is the maximum number of project users we can expect in a given time period? • How often will the peak occur?
Determine the distribution and flow of users	• Where will these users go while they are using the project? • How long will they stay in each location?
Determine media and media layout	If needed, what media should be used where in this project?

RULE

User Projections must be completed whenever:
- you do not have the information you need to recommend a capacity or level of service
- there has been a major change in the scope or scale of the project during design
- you are building for the future
- your recommendations are based on other than:
  - a normal season and hours of use
  - average levels of use

FACT

Specialists can help you with the statistical analysis needed at various points in User Projections.

RELATED PAGES

DESCRIBE PEAK LOADINGS

DEFINITION

Peak Loading is the expected level of use at the busiest hour of the busiest day of the week of the typical year for which the project is being designed.

EXAMPLE

We are not sure how much use a facility planned for 3-5 years from now will receive over the next 15 years.

PROCEDURE TABLE

This table lists the steps in estimating peak loading.

;TEP	DESCRIPTION
1.	Collect information at the site from mechanical traffic counts, handcounts and observations.
2.	Identify the peak period of use, the number of users and the groups served.
3.	Estimate the arrival or pull-off rate.
4.	Calculate: • average length of stay • average party size
5.	Calculate the turnover rate.

6.	Identify the sources of variation between peak and average periods of use, by examining:
	• differences in the mix of users
	• differences in the extent to which it was possible to use the full range of services on a given occasion
	• the effect of other constraints such as:
	  • physical barriers
	  • time, cost and distance
	  • crowding, line-ups, and congestion
	  • weather and seasonal factors

7.	Modify proposed specifications & adjust estimate
8.	Prepare projection of peak loading for the design year.
9.	• Determine how often potential users will not be served because of the proposed scale, site and capacity of the project. • Determine the percentage of potential users who will be inconvenienced in this way.
10.	Choose the optimal level of service.

RELATED PAGES

Overview of User Projections, p. 6 - 2

IDENTIFY CIRCULATION PATTERNS AND DISTRIBUTION OF USE

INTRODUCTION After you have estimated the peak loadings, you are ready to identify traffic and circulation patterns.

FACT **Use** is never evenly distributed within a facility or site.

PURPOSE By determining circulation patterns and distribution of use, you can:

- make sure that the functional components and operating systems of the facility or service are designed to accommodate the level of use they are likely to get.
- determine the appropriate sequence, placement and complexity of the media to be used
- adjust the design to avoid problems and potential conflicts in use

PROCEDURE This table shows the steps in identifying circulation patterns and distribution of use.
TABLE

STEP	DESCRIPTION
1.	Describe peak loadings for each functional area or operating system, wherever practical.
2.	Develop a flow chart or sequential diagram which shows the circulation patterns on-site and between functional areas within a facility.
3.	For the peak hour, determine the distribution of users on-site and within the facility. Indicate on your flow chart: • the percentages of users in each location • the average length of stay, where necessary
4.	Circle areas of: • potential pedestrian congestion • traffic tie-ups • pedestrian vehicle conflicts

RELATED PAGES

Overview of User Projections, p. 6 - 2
Describe Peak Loadings, p. 6 - 3

SELECT MEDIA AND DETERMINE MEDIA LAYOUT

DEFINITION

Media is a term which refers to the various means we use to communicate with park visitors. Media can include:

- signs
- pamphlets
- exhibits

PURPOSE

Media are usually designed to help the visitor to see, know, do or feel something as a result of their use of a given facility or service.

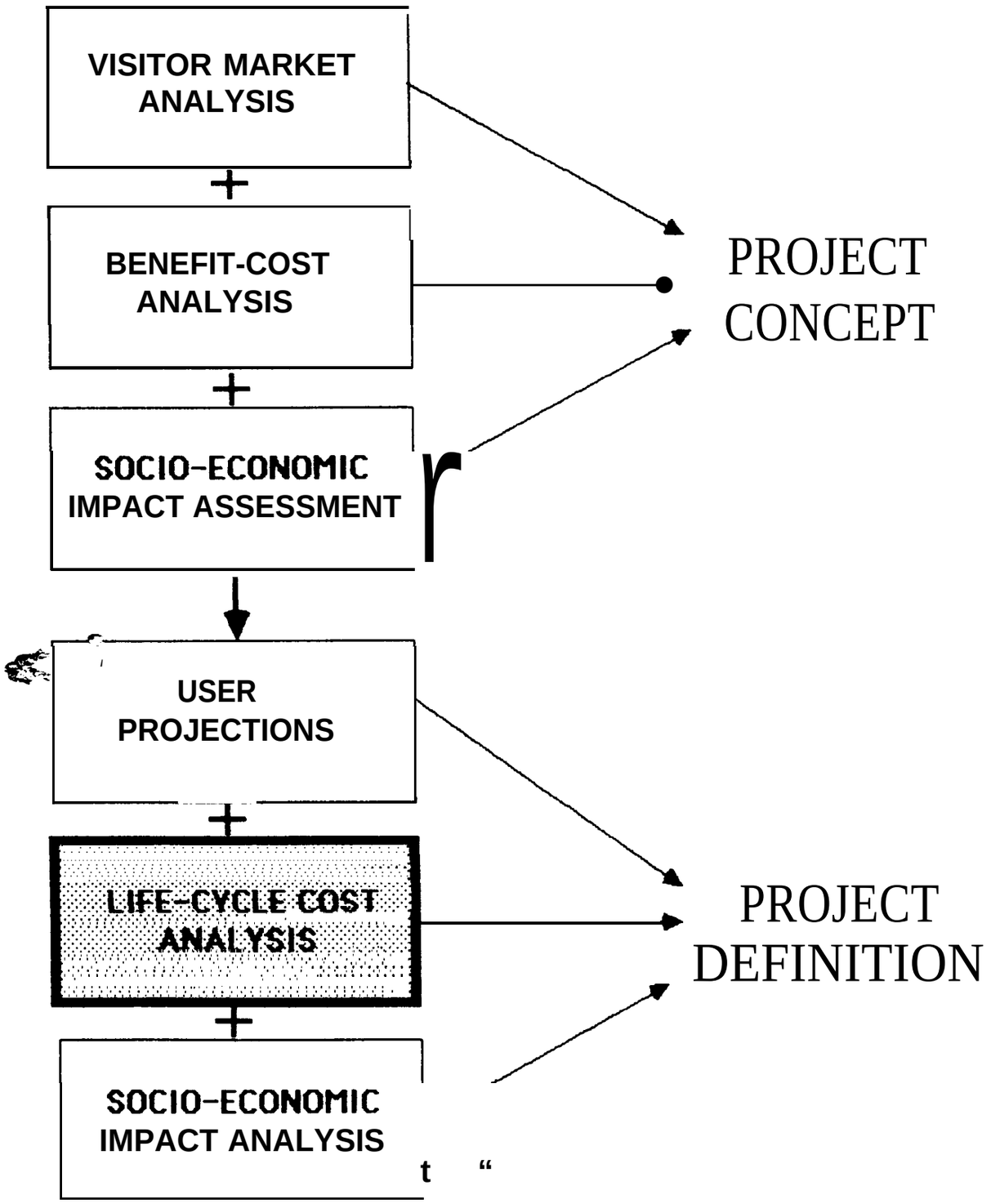
DESCRIPTION

- Media are chosen according to:
  - the characteristics of the target audience
  - what the planner hopes to communicate
  - the complexity of the storyline
- You select media to attract and hold an audience. To do this, you need information about:
  - the percentage of the potential audience you expect to reach
  - their attention span, measured in minutes
  - the level of audience involvement with the media
- In determining the layout for the media, the planner must make sure that the messages assigned to the media and the siting of the media correspond to the sequence in which the visitors arrive at and use the facility or service.

RELATED PAGES

Overview of User Projections, p. 6 - 2
Identify Circulation Patterns and Distribution of Use, p. 6 - 4

MODULE 7: Life-Cycle Cost Analysis



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MODULE SEVEN: LIFE-CYCLE COST ANALYSIS - LEARNING OBJECTIVES

OBJECTIVE

When you have finished this module, you will be able to:

- describe how Life Cycle Cost Analysis helps you to identify the low cost design and delivery option

RELATED PAGES

What happens at the Project Definition Stage? p. 2 - 4

RELATED **DOCUMENT** Module Four: Benefit Cost Analysis

OVERVIEW OF LIFE-CYCLE COST ANALYSIS

INTRODUCTION

When you did a Benefit Cost Analysis during the Concept stage of your project, you decided to undertake the project and chose the project option which best met the Visitor or Park Management need. If you did not do a Benefit Cost Analysis, it was because only one feasible project option existed.

You may now have to determine the most efficient design or means of delivery for your chosen project option. You do this through a study called a Life-cycle Cost Analysis.

USE

Life-cycle costing is used to choose the least expensive way to implement the project.

DESCRIPTION

Life-cycle costing is a comparison of the present value of the costs of various ways of implementing the project. All monetary costs and revenues are included in the analysis, that is to say all capital and operating costs while the project is in use. A discount rate is applied to all future project expenditures and revenues to transform them into present dollar amounts. By subtracting discounted revenues from discounted costs, you are able to estimate the life cycle cost of each way of implementing the project.

RULES

You must use life-cycle costing when there is more than one means of satisfying the same need.

RELATED PAGES

Overview of Benefit Cost Analysis, p. 4 - 2

MAJOR STEPS IN LIFE-CYCLE COST ANALYSIS

PROCEDURE
TABLE

The following table lists the major steps you should perform during a Life-cycle Cost Analysis.

STEP	ACTION
1.	Specify feasible solutions to the problem or needs which you have identified.
2.	Choose the period of analysis (the life cycle) over which you will compare these solutions.
3.	Enumerate all the expenditures occurring during this period of analysis.
4.	Calculate the revenues you expect to receive during this time.
5.	Apply an interest (discount) rate to all future expenditures and revenues to transform them into present dollar amounts.
6.	Choose the low cost solution.
7.	Assess how sensitive your recommended solution is to major changes in the assumptions or values used in the analysis.

COMMENT

The steps of a Life-cycle Cost Analysis which you find on this page have been simplified and stated in everyday language. The purpose of this module is to allow you to understand the basic process that you should follow.

PREVIEW

The following pages will explain each of the steps of a Life-cycle Cost Analysis in more detail.

RELATED PAGES

STEP 1: SPECIFY DESIGN AND DELIVERY OPTIONS

INTRODUCTION The first step in Life-cycle Cost Analysis is to specify in measurable terms, the potential design and delivery options which still meet the constraints (i.e. feasibility criteria) you established in your Benefit Cost Analysis.

DEFINITION Design or delivery options are feasible solutions to the problems or needs which you have identified.

RULE All delivery options must provide the same capacity and level of service.

DESCRIPTION Each option must be comparable in measurable terms so that it is possible, for example:
- to identify the low cost solution
- to determine whether a current investment justifies a future cost saving
- to find out when it will be more economical to replace an asset than to repair it

CLASSIFICATION TABLE This table lists:
- decisions which Life-cycle Cost Analysis will help you make
- a concrete example of that type of decision
- the objectives/criteria by which you will evaluate your delivery options

DECISION	EXAMPLES	OBJECTIVES/ CRITERIA
Choice of design	Building design	Minimize OMRA* costs
Make, buy or lease	Staff Housing	Lowest costs-in-use
Energy Conservation	Choice of heating system	Savings/investment ratio payback period
Repair or repl ace	Patch or pave	Scheduling targets

COMMENT * Future **Operating, Maintenance, Repair and Alteration costs** can be minimized by a life-cycle costing approach to design and delivery. Flexible approaches to procurement and future expansion should also be considered at this stage.

RELATED PAGES
Identify Project Constraints, p. 4 - 6
Major Steps in Life-Cycle Cost Analysis, p. 7 - 3

STEP 2: CHOOSE THE LIFE-CYCLE

INTRODUCTION After specifying your design and delivery options, you must choose a common period of analysis for the comparison of your options. This is the second step in Life-cycle Cost Analysis.

DEFINITION The life-cycle is the economic service or design life used as the reference period for the analysis.

DESCRIPTION In Benefit Cost Analysis projects can have unequal economic lives because the purpose of the analysis is to select the most beneficial form of the project. In Life-cycle Cost Analysis a common economic life must be used as the basis of selecting the least expensive means of implementing the project.

RULE All design or delivery options must be costed over the same life-cycle.

For each option, the period of analysis used must at least equal the economic life of the principal physical component or operating system.

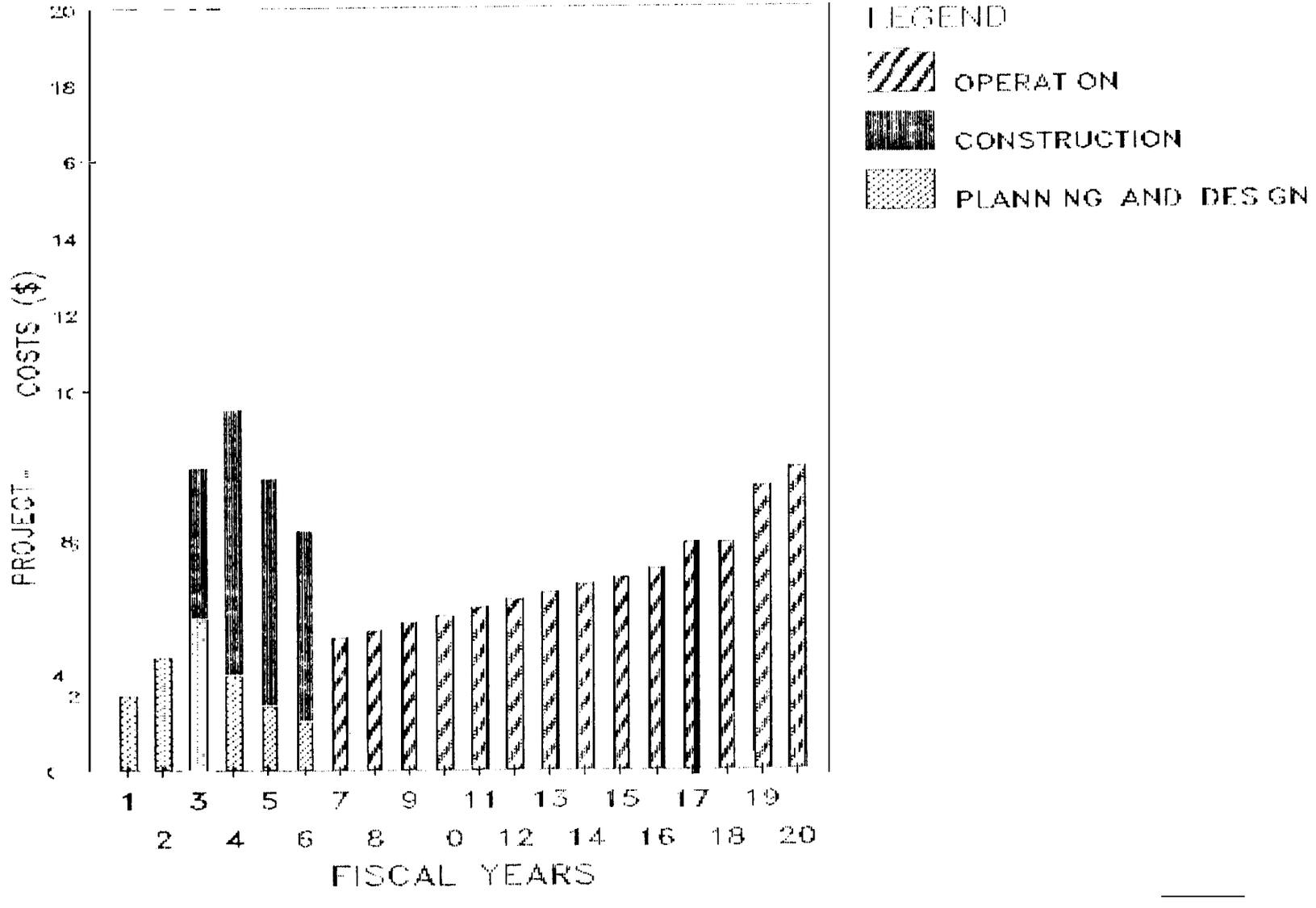
When the economic life of the principal components or systems included in different options varies, the period of analysis used must equal the longest economic life.

EXAMPLE Where the economic life of the principal component or operating system in one option is twenty years and in another is thirty years, the life-cycle or reference period used in the analysis would be thirty years.

RELATED PAGES
Describe Project Options, p. 4 - 5
Major Steps in Life-Cycle Cost Analysis, p. 7 - 3

FIGURE 7.1

PROJECT LIFECYCLE



STEP 3: ENUMERATE THE COSTS

INTRODUCTION

The third step of a Life-cycle Cost Analysis is to enumerate all the costs associated with each delivery option.

DEFINITION

The life-cycle costs of an option include all expenditures made on the project during the period of analysis.

CLASSIFICATION TABLE

The following table lists the types of costs you should include in your analysis.

CATEGORY	TYPES OF COSTS
Non-recurring costs	• Property acquisition • Planning, research & feasibility studies • Design • Construction • Equipment and furnishings • Replacement of major physical components or operating systems • Alterations or improvements
Recurring costs	• Salaries and wages • Preventive maintenance & routine repairs • Heat, power and light • Supplies

RULES

Non-monetary costs are not included.

Sunk costs, project expenditures made before the reference period of the analysis, are not included.

Replacement costs are included. This is the cost of withdrawing physical components or operating systems, during the project life-cycle or period of analysis, as they finish their useful economic life and replacing them with other components or systems which will continue to provide the same level of service.

FACT

An acceptable practical assumption is that the replacement cost equals the original cost. If the original cost did not include demolition and removal, you must add on these costs.

RELATED PAGES

Major Steps in Life-Cycle Cost Analysis, p. 7 - 3

STEP 4: CALCULATE THE REVENUES

INTRODUCTION After enumerating the design and delivery costs, the fourth step of the analysis is to calculate the revenues arising from the project.

DEFINITION A project's residual value is the revenues expected from the sale or disposal of project components or systems which have some remaining useful economic life, if they were sold on the open market, at the end of the period of analysis.

Revenues include not only project entrance fees, permit sales and rents but also adjustments for the project's remaining residual value at the end of the period of analysis.

PROCEDURE TABLE The following table lists the steps you should perform to calculate the revenues from each option. Much of the information necessary to perform these calculations is provided in the Market Analysis and User Projection studies.

STEP	PROCEDURE
1.	Identify the services for which the visitor will be charged.
2.	Set the annual schedule of service charges or rates over the life of the project.
3.	Project the annual user demand over the life of the project.
4.	Estimate the present value of future annual revenues (assumed service charges multiplied by the projected number of users) over the life of the project.
5.	Estimate the residual value of all project assets at the end of the period of analysis and add this to revenue.

RULE All revenue from each option must be included in the analysis. This includes the residual value of components or systems at the end of the period of analysis.

RELATED PAGES
Overview of Visitor Market Analysis, p. 3 - 2
Overview of User Projections, p. 6 - 2
Major Steps in Life-Cycle Cost Analysis, p. 7 - 3

STEP 5: DISCOUNT COSTS AND REVENUES TO PRESENT VALUE

REVIEW

As you may recall, the discount rate was used to value the benefits and costs of public projects. In Life-cycle Cost Analysis, however, only project expenditures and revenues are discounted to their present value.

INTRODUCTION

Because these expenditures and revenues occur at different times over the project's life-cycle, discounting is used to express them in terms of today's dollars. This is the fifth step of Life-cycle Cost Analysis.

DEFINITIONS

The Discount rate is the interest rate used to evaluate public investments.

RULES

All costs incurred and revenues received over the project's life-cycle must be discounted to their present value.

The costs and revenues included in the analysis should not be adjusted for inflation.

FACT

It is very difficult to predict the annual rate of inflation over time and often not worth the extra calculations involved especially when the effect on each option is expected to be similar. There are three exceptions:

- if the goods and services used differ substantially from one option to another
- if the prices of the goods and services used are expected to increase at different rates
- if the distribution of costs or revenues over the period of analysis differ from one option to another.

The discount rate used is a real not a nominal interest rate, that is to say, it does not include inflation.

RELATED PAGES

Discount the Benefits and Costs, p. 4 - 10
Major Steps in Life-Cycle Cost Analysis, p. 7 - 3

STEP 6: IDENTIFY THE LOW COST OPTION

REVIEW

Where the purpose of Benefit Cost Analysis is to identify the project option with the most positive NPV benefits, the purpose of Life-cycle Cost Analysis is to identify the design and delivery option with the minimum NPV costs.

INTRODUCTION

During the sixth step of a Life-cycle Cost Analysis, you will identify the low cost design and delivery option.

RULE

The design and delivery option which has the lowest discounted costs less discounted revenues (adjusted for any potential residual value from the sale or disposal of the project) is the preferred option.

DESCRIPTION

Life-cycle costing gives you a complete picture of not only the capital and operating costs, but also the revenues associated with the project. The life cycle cost of the preferred option is the amount of money which would have to be currently invested at a specific interest rate in order to pay for all the present and future costs associated with the project while it is in use. By using Life-cycle Cost Analysis you also ensure that this option will be the most economical from the standpoint of Canadian taxpayers.

RELATED PAGES

Compare Project Options for Their True Social Value, P* 4 - 11
Major Steps in Life-Cycle Cost Analysis, p. 7 - 3

STEP 7: CONDUCT A SENSITIVITY ANALYSIS

INTRODUCTION

After identifying your low cost delivery option, you perform a sensitivity analysis on key assumptions or values you have used in your analysis. This is the seventh step in Life-cycle Cost Analysis.

DEFINITION

A sensitivity analysis is the systematic variation of key assumptions and estimated values to determine the effect of potential changes on the results of a Life-cycle Cost Analysis.

DESCRIPTION

In simplified terms, what you are doing is comparing the most positive, best guess and least favorable possibilities for any assumption or value. The relative ranking of the options would be compared to ensure that the recommended option is still the best one.

FACT

The Treasury Board recommends using a discount rate of 5% and 15% for a sensitivity analysis. Parks also uses 8% and 12% which is a more realistic range of values.

RULE

If the recommended option changes, the design and delivery of the project involves a major risk. You should review your recommendations.

EXAMPLES

Some of the assumptions and values which you may wish to test in a sensitivity analysis are:

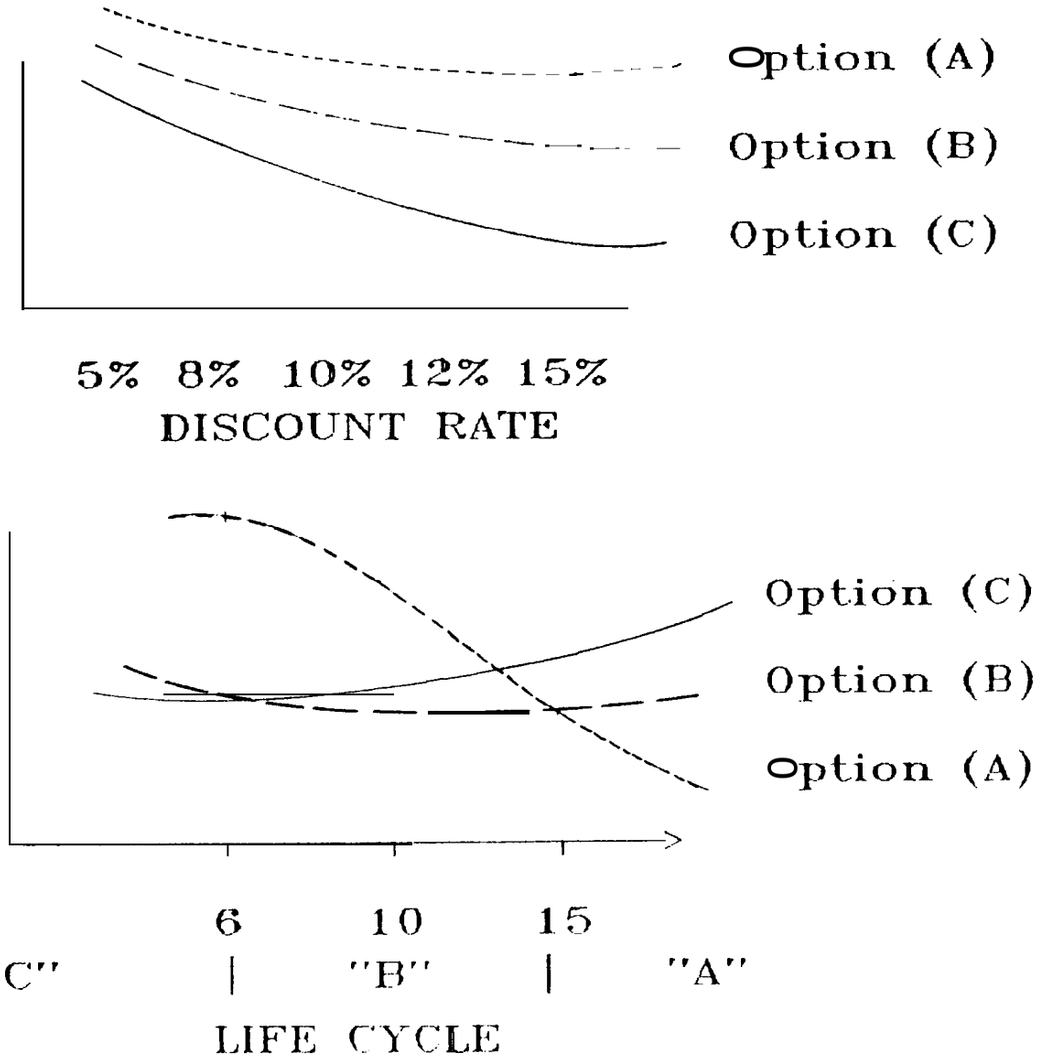
- the economic life or period-in-use
- the frequency of maintenance or amount of usage
- the inflation rate
- life cycle or period of analysis

RELATED PAGES

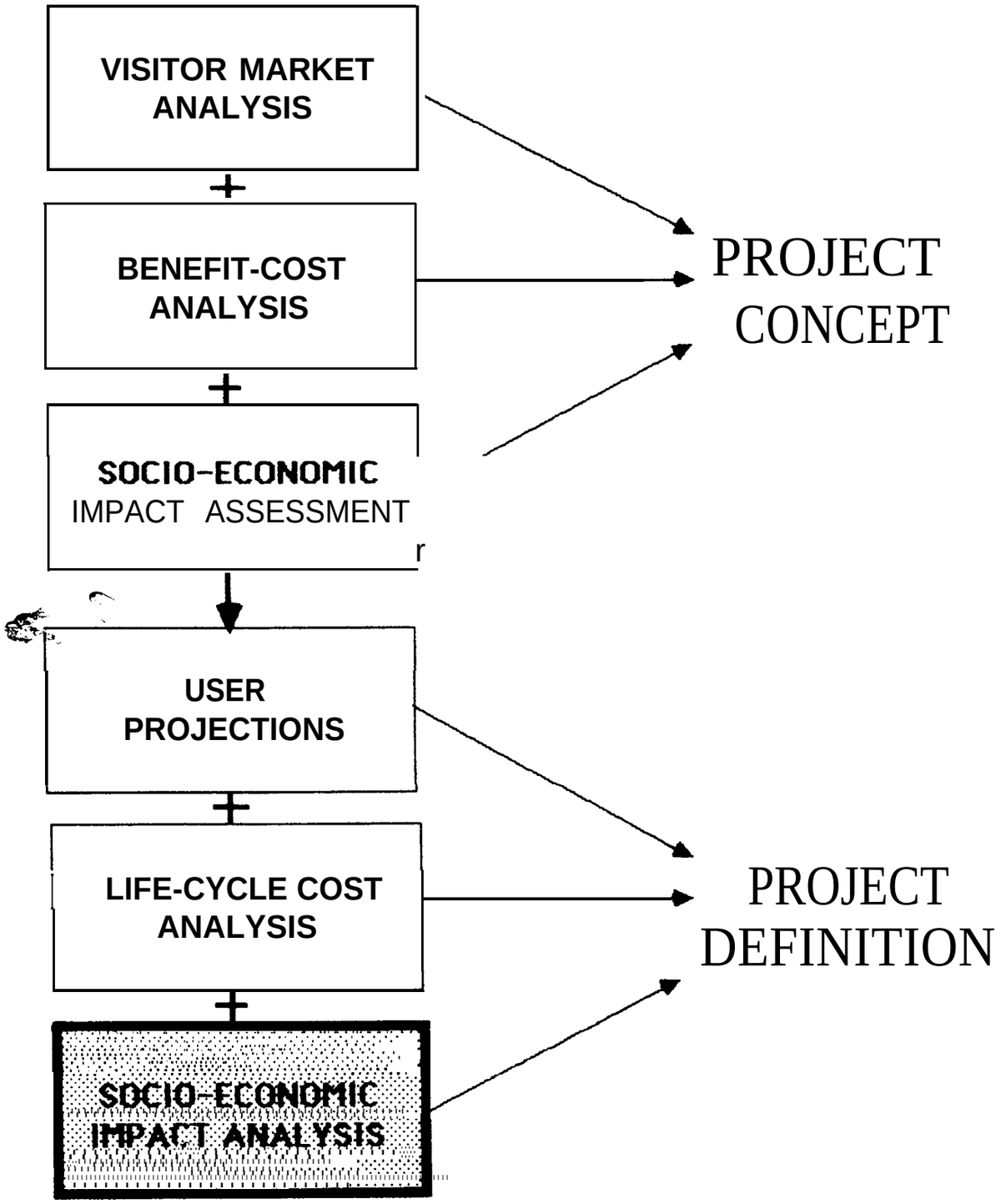
Conduct a Sensitivity Analysis of Your Assumptions, p. 4 - 11
Major Steps in Life-Cycle Cost Analysis, p. 7 - 3

FIGURE 7.2

SENSITIVITY ANALYSIS



MODULE 8: Socio-Economic Impact Analysis



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MODULE EIGHT: REGIONAL SOCIO-ECONOMIC IMPACT STUDIES - LEARNING OBJECTIVES

OBJECTIVES

When you have finished this module, you will be able to:

- describe how to formulate alternative courses of action to deal with socio-economic impacts
- describe how the project contributes to regional socio-economic development

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RELATED PAGES: What happens at the Project Definition Stage? p. 2 - 4

RELATED MATERIAL: Module Five: Socio-Economic Impact Assessment

OVERVIEW OF REGIONAL SOCIO-ECONOMIC IMPACT STUDIES

REVIEW

When the Project Concept was approved, Parks' managers
- accepted the need for the project
- chose the project option which best met the need
- identified impacts requiring further study

During the Project Definition stage, you determine the peak user loading and most efficient design or means of delivery for the project, after careful analysis of various feasible options. The workplan and budget for the remaining studies was also established in the Concept Approval, including:
- User Projections
- Life-Cycle Costing
- Regional **Socio-economic Impact Studies.**

INTRODUCTION

Carrying out a Socio-Economic Impact Analysis is a complex activity which may require the input of professionals from different disciplines.

The purpose of this module is to help you understand the basics of Regional Socio-economic Impact Studies. This will improve your awareness of what to look for in such studies and make your job of setting good Terms of Reference for the study much easier.

DEFINITION

A Regional Socio-economic Impact Study is a detailed analysis which:
- estimates the impact of the project on the region and on the public
- recommends and costs remedial action for negative impacts, such as: the cost of compensating someone whose business would be completely shut down for a year while the project is being built
- identifies positive spinoffs so that decision-makers can be informed

This type of study answers questions such as:
- "Who is impacted by the project?"
- "How much are they impacted?"
- "What can the Parks Service do about it?"

RELATED

Overview of Socio-economic Impact Assessment, p. 5 - 2

MAJOR STEPS IN A REGIONAL SOCIO-ECONOMIC IMPACT STUDY

USE

A Socio-economic impact study is a detailed analysis of major secondary impacts:

- to develop and cost mitigating measures to alleviate significant adverse impacts
- to estimate the important positive social and economic spinoffs from the project
- to find out more about identified but unknown impacts:
  - what they are
  - if they are important
  - if anything needs to be done about them

PROCEDURE

This table lists the major steps performed during a Socio-Economic Impact Study.

STEP	PROCEDURE
1.	Develop a profile of the impact area describing • what the area is like now • what trends are like now Describe the baseline conditions such as, the population, the economy and the community.
2.	Determine what the impact area will be like if the project is implemented, by estimating, in measurable terms, the social & economic impacts you expect the project will have.
3.	Compare the baseline conditions in the profile with the future conditions you expect if the project is implemented. What would the impact area be like without the project compared to what it would be like with the project?
4.	Produce the results of the analysis: • Describe in detail the important positive and important negative impacts of the project for local employers, employees, suppliers and residents. Will these people be better off or worse off as a result of the project? • Recommend actions which will eliminate or lessen any significant negative impacts. • Can the positive impacts be increased to any extent?

EXAMPLE

Local motel owner's business, adversely affected by road construction associated with the project, could be asked to provide lodgings for the road crews, instead of park visitors, and be compensated for lost business.

RELATED PAGES

THE TYPES OF IMPACTS EXAMINED IN A SOCIO-ECONOMIC IMPACT STUDY

INTRODUCTION

A project has both short-term and long-run impacts on the unique combination of households, businesses and communities within the impact area. One impact frequently leads to other successive impacts. An impact *in* one sector may also have impacts in other sectors.

DEFINITION

A multiplier impact is any indirect or induced increase in local employment, consumption, investment and tax revenues resulting from the project.

A distributive impact is any socio-economic gain or loss to the area.

DESCRIPTION

A project has direct, indirect and induced impacts.

Direct impacts include local job creation, purchases of goods and services by Parks and visitors, and additional wages and salaries paid to local employees.

Because of the increased income from employment, employees will buy local goods and services from existing businesses. Part of these additional business sales will be paid out in the form of profit and income to local owners/operators and employees. These are called induced project impacts.

Furthermore, the suppliers of these businesses will also have to step-up production to fill the additional orders placed by businesses to meet increased consumer demand. Employment and income will again rise but to a smaller degree than before. These are called indirect project impacts.

Projects have distributive impacts. These include lost production, income and employment from existing uses of natural resources. There may also be changes in housing and residential patterns due to changes in employment and population trends. Local demand and ability to pay for public services may change as a result of the project. Public concerns may be expressed even before the project is undertaken.

FACT

Parks encourages local public input into the planning and management of projects (Policy 2.2). Public awareness and involvement help you to evaluate local opportunities and to control any unanticipated consequences of undertaking the project.

RELATED PAGES

STEP 1: DEVELOP A PROFILE OF THE IMPACT AREA

INTRODUCTION

Socio-economic impact analysis looks at baseline conditions in the impact area to determine what conditions are new conditions and to compare:

- what conditions would be like in future without the project
- what conditions would be like with the project

The differences between these two profiles, whether positive or negative, are the likely impacts of the project.

To make this comparison, you start by developing a profile of the impact area. This is the first step in Socio-Economic Impact Analysis.

DESCRIPTION

To develop a profile of the impact area, you usually collect information from secondary local, provincial or federal sources. They need to describe current conditions and current trends in the impact area.

EXAMPLES

This list includes examples of some of the questions used to develop the profile:

POPULATION:

- What is the size, composition and distribution of the current population?
- How are the size, composition and distribution expected to change in the future?

ECONOMY:

- What are the current levels of employment?
- What are current wages and salaries?
- What do people spend their money on and where do they spend it?
- How much are visitors currently spending in the impact area?
- How are these economic factors expected to change in the future?

COMMUNITY:

- What is the current housing availability and quality?
- What is the current demand for public facilities and services?
- What are the current tax revenues and expenditures?
- What are the current land values and use?
- How are these community factors expected to change in the future, for example, as a result of current development plans?

RELATED

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STEP 2: ESTIMATE SOCIAL AND ECONOMIC IMPACTS OF A PROJECT

INTRODUCTION

Once you have developed a profile of the impact area, you can see what the area is like now and what the currently expected changes are. In other words, you have a measure of baseline conditions.

You now need to find out what the impact area would be like if the project was implemented. You want to estimate the full social and economic impacts the project will have within the impact area. This is the second step in a Regional Socio-Economic Impact Study.

DESCRIPTION

Estimating socio-economic impacts within the impact area generates information on the timing, distribution and type of consequences which a project will have.

For each identified impact being studied, the analysis should give you answers to all the following questions:

0 Who will be impacted? Who will be better or worse off as a result of the project?
o Is the impact permanent or temporary? If temporary, when will it occur and how long will it last?
o Is the impact direct or indirect? How large, in measurable terms, is it?

EXAMPLE

A project is being considered which will have an impact on business and employment in the area. The following chart shows examples of the information analysts need.

HOUSING	
Measures of Baseline Conditions	0 supply & vacancy rates in impact area o population and household growth rates o household size and composition
Project Impacts	o Direct: loss of housing o Indirect: employment changes
Estimates of Socio-economic Impacts	o four families to be rehoused o temporary housing for twenty construction workers needed o staff housing needed for three permanent and eight seasonal staff

RELATED PAGES

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STEP 3: COMPARE THE IMPACT AREA WITH AND WITHOUT THE PROJECT

INTRODUCTION

On earlier pages, we have seen that:

- Developing a profile of the impact area gives the analysts a measure of baseline conditions.
- Estimating the social and economic impacts within the impact area gives the analysts a measure of future conditions if the project is implemented.

Comparing these baseline and future conditions is the third step in a Regional Socio-Economic Impact Study.

DIAGRAM

The following diagram illustrates, in simplified terms, the kind of comparison which analysts do in a Regional Socio-Economic Impact Study. The example shows what will happen to the amount of housing without the project and compares this to what will happen with the project.

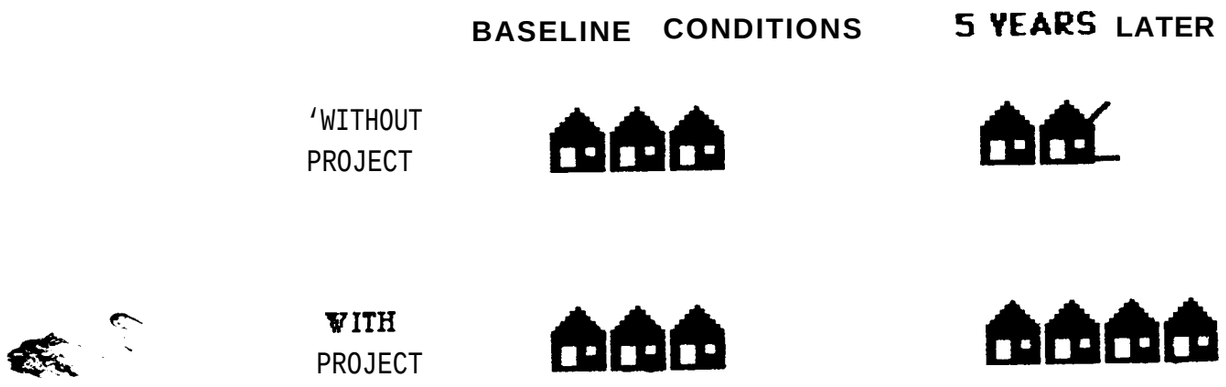

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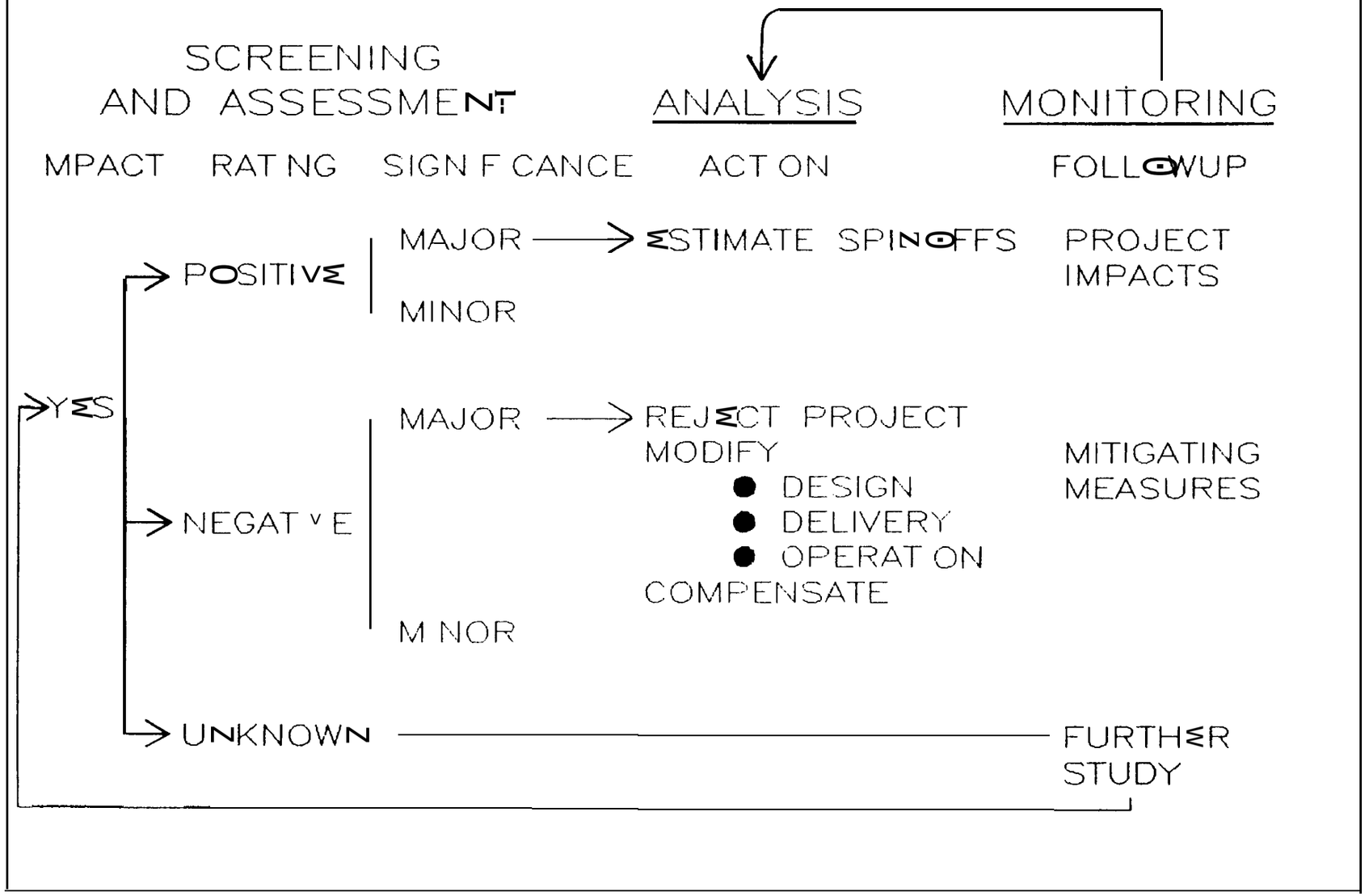
FIGURE 8.1

REGIONAL SOCIO-ECONOMIC IMPACT STUDIES



STEP 4: PRODUCE THE RESULTS OF THE ANALYSIS

INTRODUCTION

After estimating social and economic impacts within the impact area and comparing the results to the baseline conditions, analysts are ready to produce their results and make recommendations. This is the fourth step in a Regional Socio-Economic Impact Study.

If they have studied significant positive impacts, they give their results in detail. They also describe significant negative impacts in detail with appropriate recommendations. The analysts' report should answer the question:

"What actions do they recommend to eliminate or lessen each significant negative impact?"

DESCRIPTION

The evaluation which the analysts produce at the end of a Regional Socio-Economic Impact Study should answer the following broad questions in detail:

- On what persons and areas will the project have the most impact?
- Is the impact major: significantly adverse or positive spinoff?
- Is the impact permanent or temporary? If temporary, how and when will it occur and how long will it last?
- How large or extensive is the impact? What, in measurable terms, is its estimated size?
- If the impact is significantly negative, can we get around it by:
  - design modifications
  - changes in project management
  - another means of delivery
  - changes in operation
  - compensation to those individuals or groups affected
- Which aspects of the project, if any, should be carefully monitored?

EXAMPLE

If the significant adverse impact caused by the project is a housing shortage, the recommended actions might be:

- compensate or subsidize those involved
- buy, lease or build additional housing

RELATED PAGES

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