

ABSTRACT

INTRODUCTION

- The Need for Vegetation Management Plans
- The Objective of Vegetation Management Plans
- Description of the Report
- Objectives of the Report
- Sources of Information for the Report
- Underground as an Alternative to Aerial Transmission of Electricity
- Relationship of Vegetation Management to other Electrical Utility Departments
- Relationship of Vegetation Management to Resource Agencies
- Relationship of Vegetation Management to Other Right-of-Way Users
- Distribution of the Report

DESCRIPTION SECTION

- DESCRIPTION OF THE GENERAL AREA
  - Geographical
  - Topographical
  - Climatological
  - Natural Resources
  - Unique Features
  - Demography
- DESCRIPTION OF THE AREA ADJACENT TO THE RIGHT-OF-WAY
  - General Location of the Right-of-Way
  - Nominal Clearing Width
  - Topographical
  - Climatological
  - Natural Resources Affecting Vegetation Management
    - Vegetation
    - Soils
    - Rivers
    - Creeks
    - Wildlife
  - Unique Features Including Visual Resources
  - Nominal Clearing Width
  - Unique Features Including Visual Resources
  - Demography
    - Cities
    - Towns
    - Unincorporated Town Sites
    - Recreation Lands
    - Institutions
    - Individual Residences
    - Other

- Land Use
  - Now
  - Potential
- Access
  - Main Roads
  - Secondary Roads
  - Other

#### DESCRIPTION OF TRANSMISSION LINE

- Source
- Termination
- Voltage
- Tower Design
- Profile and Minimum Clearances
- Tower Locations
- Critical Design Areas
- Other

#### DESCRIPTION OF THE RIGHT-OF-WAY

- Specific Location
- Specific Width and Clearing boundaries
- Management Sections
  - Size
  - Boundaries
- Topography
  - Elevation
  - Slopes
  - Aspect
- Soils
  - Type
  - Growing Capability
- Water
  - Ocean
  - Bays and Inlets
  - Fresh Water Lakes
  - Other Open Water Bodies
  - Rivers
  - Creeks Permanent
  - Creeks Ephemeral
  - Swamp Areas
  - Water Sheds
  - Drinking Water
  - Other Drainage Concerns

- Adjacent Land Use
  - Now
  - Future
- Right-of-Way Land Use
  - Now
  - Future Planned
- Botanical Inventory
  - Prior to Clearing
  - Post Clearing
- Roads on the Right-of-Way
  - Prior to Clearing
  - Post Clearing Temporary
  - Post Clearing Permanent
- Legal Status
  - Ownership
  - Easements
- Special Vegetation Management Areas
  - Alternate Land Uses
  - Road Crossings
  - Other

#### GENERAL DESCRIPTION OF VEGETATION MANAGEMENT

- Necessity for Vegetation Management on Rights-of-Way
- Definition of Vegetation Management
- Concepts of Vegetation Management
  - Secondary Succession
  - Ecological Stability
  - Conversion and Competitive Leverage
  - Eradication Versus Control
  - Desirable Versus Undesirable Tall Growing Plants
  - Initial Vegetation Management Plans
  - Conversion Phase
  - Maintenance Phase

#### RESPONSIBILITIES

- Mandate of the Utility
- Responsibilities of the Utility
  - Changes of Responsibility as Transmission Line Progresses from Planning to Operation
    - Corporate Responsibilities
    - Divisional Responsibilities
    - Departmental Responsibilities

- Responsibilities of Other Groups Prior to Construction
  - Environment Agency or Agencies
  - Resource Agencies
  - General Public
- Responsibilities of Other Groups Post Construction
  - Environmental Agency (concerned with vegetation management practices)
  - Resources Agencies
  - General Public
  - Individual Land Owners

#### HISTORY TO DATE

- The Planning Process
- Environmental Impact Assessment
- Environment Decisions
- The Public Information Process
- Corridor Selection
  - Input from Vegetation Management Studies
- Route Selection
  - Input From Vegetation Management Group Studies
  - Input From Vegetation Management Consultant Studies if Appropriate
- Status of Concerns Raised by Various Groups
  - Federal
  - Provincial or State
  - Regional District
  - Organizations
  - The General Public
  - Land Owners

#### FUTURE PROCEDURES

- Submission of Environmental Impact Assessment
- Preparation of Addendum
- Vegetation Management Plan
- Prelogging
- Clearing
- Restoration
- Vegetation Management During Conversion
  - On the Right-of-Way
  - At the Edge of the Right-of-Way
  - Substations and Other Ancillary Areas
- Vegetation Management During Maintenance
  - On the Right-of-Way
  - At the Edge of the Right-of-Way
  - Substations and Other Ancillary Areas

DISCUSSION SECTION

INTRODUCTION

PRELOGGING

- Factors Influencing
- Method Options
- Implications for Vegetation Management

CLEARING PRACTICE

- Factors Influencing
- Method Options
- Clearing Standards
- Implications for Vegetation Management

RESTORATION

- Factors Influencing
- Method Options
- Restoration Standards
- Implications for Vegetation Management

VEGETATION MANAGEMENT

- Options During Conversion
  - On the Right-of-Way
  - Danger Trees
  - Other Facilities
- Options During Maintenance
  - On the Right-of-Way
  - Danger Trees
  - Other Facilities

POTENTIAL ECONOMIC CONSIDERATIONS

- Economic Costs
- Economic Benefits
- Capital Expenditures
- Operating Expenditures

#### POTENTIAL ENVIRONMENTAL IMPACTS

- Social and Human Health Concerns
- Drinking Water
- Watersheds
- Desirable Vegetation on Right-of-Way
- Desirable Vegetation off Right-of-Way
- Agricultural Crops
- Horticultural Crops
- Surface Water not Potable
- Streams and Rivers
- Ground Water
- Wildlife Habitat
- Visual Resources

#### POTENTIAL FOR MITIGATION OF POSSIBLE ENVIRONMENTAL IMPACTS

- Social and Human Health Concerns
- Drinking Water
- Watersheds
- Desirable Vegetation on Right-of-Way
- Desirable Vegetation off Right-of-Way
- Agricultural Crops
- Horticultural Crops
- Surface Water not Potable
- Streams and Rivers
- Ground Water
- Wildlife Habitat
- Visual Resources

### DECISION AND CONSTRAINT SECTION

#### INTRODUCTION

#### GOVERNMENT GOALS

- Social
- Environmental
- Economic

#### UTILITY GOALS AND OBJECTIVES

- Social
- Environmental
- Economic

#### VEGETATION MANAGEMENT GOALS AND OBJECTIVES

- Program
  - Social
  - Environmental
  - Economic
- Project
  - Social
  - Environmental
  - Economic

#### VEGETATION MANAGEMENT CRITERIA

- Program
  - Social
  - Environmental
  - Economic
- Project
  - Social
  - Environmental
  - Economic

#### LEGISLATION GOVERNING VEGETATION MANAGEMENT

- Federal
  - Direct
  - Impinging
- Provincial or State
  - Direct
  - Impinging
- Regional
- Municipal

#### UTILITY POLICY

- Program
  - General Policy
  - Reliance on Other Agencies

- Project
  - Policy Documents
  - Line Protection Policy
  - Line Clearance Policy
  - Compliance with Legal Requirements
  - Vegetation Management
  - Environmental Protection
  - Public Information
  - Appeals
  - Reliance on Other Agencies

#### UTILITY STANDARDS

- Construction
- Restoration
- Conversion
- Maintenance

#### EXPERIENCE AND APPLIED RESEARCH

- Prelogging Experience
- Clearing Experience
- Restoration Experience
- Conversion Experience
- Maintenance Experience

#### KEY VEGETATION MANAGEMENT INFORMATION FOR THE R.O.W. PRIOR TO CONSTRUCTION

- Social
- Environmental
- Economic
- Theoretical
- Technical

#### KEY VEGETATION MANAGEMENT INFORMATION FOR THE R.O.W. POST CONSTRUCTION

- Social
- Environmental
- Economic
- Theoretical
- Technical



#### ESTABLISHED REQUIREMENTS OF GOVERNMENT AGENCIES

- Federal
  - Environment
  - Fisheries
  - Wildlife
  - Agriculture
- Provincial or State
  - Environment
  - Wildlife
  - Agriculture
  - Lands
  - Water

#### COMMITMENTS MADE

- Government Departments
- Corporations
- Private Parties
- Easement Agreements
- Other

#### COMPREHENSIVENESS OF DATA AND DATA COLLECTION

- Scale of Data Base Information
- Date of Data Base Information
- Data to be Obtained
- Data Missing and Unlikely to be Obtained
- Consequences

#### WORKLOAD ANALYSIS AND ANTICIPATED WORKLOAD

- Restoration
- Conversion
- Maintenance
- New Data Collection

#### PRECEDENT AND EXISTING PROCEDURES

- History
- Documentation of Procedures

REVIEW OF ACTUAL CHOICES AND RATIONALE

INTRODUCTION

PRELOGGING

- By Location

CLEARING

- By Location

RESTORATION

- By Location

CONVERSION

- By Location

MAINTENANCE

- By Location

REVIEW OF PROGRAM AND PROJECT IMPLEMENTATION

INTRODUCTION

DISCUSSION OF PROGRAM

- Relationship of Program Requirements to Specific Right-of-Way
- Relationship of Various Project Requirements to Specific Right-of-Way

PROJECT PLANNING

- Priorities and Work Load Analysis
- Recognition and Extent of Problems
- Training
- Reassessment of Legal Status and Agreements
- Reassessment of Commitments
- Scheduling and Timing
  - Availability of Equipment
  - Availability of Staff
  - Availability of Funds

- Information and Communications
- Applications to Regulatory Agencies
- Utility Approval Systems
  - Approved List of Contractors
  - Approved List of Herbicides
  - Approved List of Equipment
  - Approved Methods
- Contract and Specification Preparation Awarded Notifications
- Contract
- Contingency for Appeals to Regulatory Agencies by Interveners
- Assessment of Accident Response Capability

#### LOGISTICS

- Project Pre-Job Conferences
- Information and Communications
  - General Public
  - Specific Land Owners
  - Levels of Government
  - Internal Corporate Information
- Worksite Pre-Job Conferences
  - Worksite Security
    - Stores
    - Equipment
- Marking of Hazards
  - On Right-of-Way
  - Off Right-of-Way
- Job Safety Requirements
- Assessment of Access

#### JOB EXECUTION

- Supervision
- Protective Clothing
- Familiarization with Plant Target Species
  - Buffer Zones
- Storage of Chemicals
- Disposal of Containers
- Breakdown of Equipment
- Integration of Various Techniques
- Site Specific Herbicide Use Constraints
- Other Site Specific Method Constraints

REVIEW OF PROGRAM AND PROJECT POST-OPERATIONAL ASSESSMENT

INTRODUCTION

PROJECT MONITORING

- Ground Survey and Desirable Vegetation Checks
- Buffer Strip Checks
- Water Samples
- Air Photos
- Other Agencies Involvement

RECORDS

- Daily
- Monthly
- As Required by Government Agencies
- Other

RETREATMENT REQUIREMENTS

- Location of Retreatment
- Methods for Retreatment
- Reasons for Retreatment

COMPLAINT HANDLING

- Government Agencies
- Corporations
- Organizations
- Private Parties

HISTORIC PROFILES

- Static Base Data
- Changing Base Data
- Critical Base Data
- Treatment Data

REVIEW OF GOALS AND OBJECTIVES

- Social
- Environmental
- Economic

REVIEW OF NEW SOCIAL CIRCUMSTANCES

- Land Use
- Water Use

REVIEW OF NEW ENVIRONMENTAL CIRCUMSTANCES

- Land
- Water
- Fauna
- Flora

REVIEW OF OUTAGE STATISTICS

UPDATE OF MANAGEMENT PLANS

- Incorporation of New Information on Right-of-Way
  - Land Use
  - Water Use
  - Other
- Incorporation of New Information Off Right-of-Way
  - Land Use
  - Water Use
  - Other
- Incorporation of Revised or New Responsibilities
- Incorporation of Revised or New Constraints
- Incorporation of Revised or New Objectives
- Incorporation of Revised or New Vegetation Management Techniques



Appendix Q Suggested Rights of Way Management Plan Contents at Time of Location Studies on New Rights-of-way.

Note: Detailed information would be added as the stages of development from environmental impact statement through to initial maintenance use completed over time.