

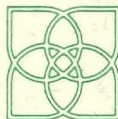
ROADWAYS AND PARKS NATURALIZATION MASTERPLAN

CITY OF EDMONTON PARKS AND RECREATION



PREPARED BY

EDA COLLABORATIVE INC.



EDA

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April 5, 1994

Mr. Dave Rudge
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Edmonton Parks and Recreation
6th floor Revillon Building
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Landscape Architecture
Urban Design
Environmental Planning

Dear Mr. Rudge:

Re: ROADWAYS and PARKS NATURALIZATION MASTER PLAN

EDA Collaborative Inc. is pleased to submit this final report for the Roadways and Parks Naturalization Master Plan. In addition to this report, two Appendices have been produced as integral components of the final package and contain relevant background information. Appendix One, Naturalization Site Evaluation, contains conceptual plans and evaluation charts for sites included in the Master Plan. Appendix Two, Roadway Landscaping Inventory, includes an inventory of existing landscaping along Edmonton Arterials and Collector roadways.

This report is the culmination of several months of work and the close collaboration of people at Edmonton Parks and Recreation and EDA Collaborative. We trust that the final product will prove a useful tool in guiding your naturalization projects over the next five years and beyond, and look forward to seeing long term positive results from the program.

Sincerely,

EDA Collaborative Inc.



Penny Dunford B.L.A., C.S.L.A.
Associate

PD:pd

ACKNOWLEDGEMENTS

We wish to acknowledge the background work done by the Naturalization Task Force and a special "thank you" is extended to **Edmonton Parks and Recreation** staff members who contributed to the development of this Master Plan.

Kim Beauregard
Rick Cloutier
Dave Howell

Mark Nolan
Dave Rudge
Kevin Ryan

All staff at **EDA Collaborative** played a role in the completion of this project, however, we wish to make a special mention of Colin Nimmo, who spent many hours driving the streets of Edmonton, and many hours at a City GBIS computer terminal entering inventory information and preparing site plans for this project.

Penny Dunford
Colin Nimmo
Chad Carter

Ted Muller
Bob Nicholson
June Melenka

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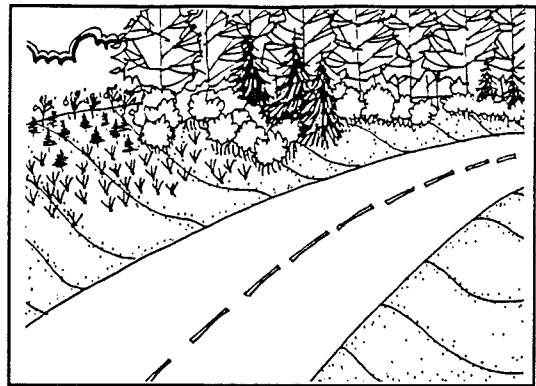
1.0 INTRODUCTION

1.1 WHAT IS NATURALIZATION?

Naturalization is an alternative landscape management technique to conventional high maintenance landscapes. Natural processes of growth and change are less restricted and the landscape is allowed to become native. This does not necessarily mean a wild or an abandoned landscape.



TRADITIONAL LANDSCAPE



NATURALIZATION

There are two types of naturalization - passive and active. **Passive** naturalization is viable where native vegetation exists nearby and native plants are allowed to spread into unmown areas through either seed dispersion or sucker growth. **Active** naturalization involves the planting of trees and shrub seedlings, wildflowers and native grasses in places where nature needs a helping hand. Naturalization can be grouped into three main types - grassland, woodland or wetlands. Naturalization is a long term process which changes constantly. The concept of naturalization is becoming extremely popular due to increasing environmental awareness and current economic constraints which make reduced maintenance very attractive.

1.2 EXPERIMENTAL NATURE of NATURALIZATION

Experimental naturalization has been carried out in Edmonton since as early as 1965. Reforestation and soil stabilization were the main goals of early projects. Good examples of this are along Groat Road and Victoria Park hillside which were planted in the mid 1960's. These sites are successful examples of naturalization. Not all previous "experiments" have been successful.

An earlier departmental study entitled "Resource Manual for Establishment and Management of Naturalized Landscapes in the Edmonton Region", June, 1992 summarizes all the naturalization experiments in the City to date. It also identifies potential long-term economic and environmental benefits, naturalization methods and maintenance requirements. Continual monitoring and refinement of naturalization processes will be required over a period of years.

1.3 NATURALIZATION TASK FORCE

A Naturalization Task Force was struck to study the issue of naturalization in 1992. The role of the Task Force is to develop, implement, monitor and evaluate landscape naturalization activities and initiatives in the City.

The goals of the Task Force include:

- making naturalization a viable landscape alternative
- establishing a funding strategy
- maintaining a resource centre
- integrating naturalization projects into the job function
- communicating effectively on its constraints and benefits.

This Naturalization Master Plan will be one of a number of documents, pamphlets, etc to help attain these goals.

1.4 OBJECTIVES of the MASTER PLAN

The purpose of this study is to guide roadway and park naturalization planning through the period 1994 - 1998.

The objectives of the Master Plan are:

1. To identify the opportunities and costs associated with naturalization.
2. To refine the existing criteria for selecting suitable sites for naturalized landscapes.
3. To update and validate an existing inventory of all arterial and collector roadway landscapes and selected park sites for the application of naturalized landscapes.
4. Evaluation of public lands for potential suitability for naturalization according to site selection criteria.
5. To produce a prioritized plan for naturalization of public lands.

1.5 ORGANIZATION of the MASTER PLAN

This report is organized into eight chapters including:

1. Introduction
2. Naturalization Landscaping Program
3. Naturalization Criteria and Type
4. Potential Sites for Naturalization
5. Prioritization of Sites
6. Implementation
7. Summary
8. The Future.

Chapter 2.0 discusses the Naturalization Landscaping Program within the context of existing standards, policies, and other programs. Chapter 3.0 outlines the criteria used to determine whether a roadway or park site is suitable for naturalization, and describes briefly the different types of naturalization which could be applied. Chapter 4.0, Potential Sites for Naturalization, gives an overview of the sites which were evaluated for naturalization. Information regarding the complete site evaluation process, with evaluation charts and plans for each site, can be found in Appendix 1 entitled, "Naturalization Site Evaluation". This document includes suitability ratings for each roadway as one unit; a more detailed breakdown of sites is included in Chapter 5.0, Prioritization of Sites. Within this chapter, the criteria used for prioritization is reviewed and a chart is included with priority ratings for each site. The Implementation chapter deals with the practical side of the naturalization program, focusing on sponsors, funding and the design and implementation process. A five year plan chart outlines a proposed five year planting program, indicating sites for volunteer groups and City crews. The Summary chapter provides a succinct overview of the entire process, from evaluation to planting. This chapter will give prospective sponsors a holistic appreciation of naturalization. Finally, the Future chapter looks down the road discussing the next steps, and highlighting some of the interesting aspects of this program and the long-term nature of this experiment.

Additional information is available at the Naturalization Resource Centre established at the River Valley Outdoor Centre.

2.0 NATURALIZATION LANDSCAPING PROGRAM

2.1 RESPONSIBILITY for DEVELOPING and MAINTAINING ROADWAY BUFFERS

Edmonton Parks and Recreation has responsibility for managing all parkland and open space in the City of Edmonton. This includes all river valley parks, neighbourhood, district and city level parks and roadway boulevards.

The Public Works and Transportation Departments are also major shareholders in the development and management of these lands, particularly roadway boulevards. The City of Edmonton has a number of programs through which development of boulevard lands is undertaken. These are:

1. Parks and Recreation - Roadway Landscaping program
2. Parks and Recreation - City Entrance Beautification program
3. Parks and Recreation - Corporate Tree Policy
4. Parks and Recreation - Public donations
5. Parks and Recreation - Naturalization program
6. Public Works - Roadways capital construction

Although this Master Plan may assist in the planning for all of the above listed program areas, the primary focus for this study is the naturalization program.

2.2 POLICIES and STANDARDS for ROADWAY DEVELOPMENT and MAINTENANCE

A number of standards for development and maintenance are in place governing boulevards in particular. These are as follows.

Servicing Standards Manual, chapter 8 - This manual details the landscape design specifications for road and utility rights-of-way. This chapter has been revised to include a section on naturalization, as a landscape alternative, part 1, section 060. This applies to naturalization with native plant materials having regard for the surrounding environment, new drainage patterns, soil conditions, and ecological rehabilitation. Generally naturalization would apply to river valley and ravine lands, major utility corridors and road rights-of-way. These standards are adhered to in landscape construction.

Bylaw 7829, Boulevard Bylaw - This bylaw has to do with the development and maintenance of boulevards by abutting residents. It generally does not apply to the areas that are sought for naturalization, but may be applicable if area residents are involved in the care of naturalized areas.

Bylaw 6046, Weed Control Bylaw - A Bylaw regulating the control of noxious weeds, a concern in the early period of the naturalization process.

City Policy 1042, Legislated Maintenance Standards for City-owned property - A City policy outlining what city property is to be maintained to established standards as required by City Bylaws or Provincial Acts and Regulations. This policy establishes that Edmonton Parks and Recreation is responsible for maintaining parkland, school grounds, utility lots, landscaped boulevards and trees and shrubs.

City Policy C456, Corporate Tree Policy - This policy establishes the process for valuation and replacement of trees. It also states that donated trees become the property of the City.

2.3 PROGRAM JUSTIFICATION

The "Resource Manual for Establishment and Management of Naturalized Landscapes in the Edmonton Region" identifies the benefits, problems and solutions associated with naturalization. The primary advantages of naturalization are environmental and economic. Restoring areas disturbed by human activity with native vegetation provides numerous environmental benefits including increased bio-diversity, wildlife habitat, carbon dioxide absorption and soil stabilization. Economic advantages include a reduction in maintenance requirements and associated reduction in the use of fossil fuels and noise and air pollution. The Manual determined that naturalization will be cost-effective.

There are other corporate advantages. Our mandate is to continually search to find alternative and innovative ways of more effective service delivery and cost savings. The naturalization program in the long term can accomplish these objectives.

As a result of increased awareness in the environment, the naturalization program provides a potential focus for groups, corporations and individuals wishing to donate time, energy, materials, or funds to help green the environment. A funding strategy based primarily on donations of this kind is one of the goals of the Naturalization Task Force.

2.4 INITIAL AREA SELECTED for NATURALIZATION

Since the process of investigating the benefits of naturalization began in 1991, a number of areas of the City have been selected for the naturalization program, based in part on the Criteria For Naturalization Suitability and the in-house draft document "Resource Manual for Establishment and Management of Naturalized Landscapes in the Edmonton Region". Two hundred hectares of major arterial roadway buffers were selected for naturalization, using various methods of planting and maintenance. Some work has been undertaken through the efforts of both departmental staff and various volunteer groups who are donating manpower and material. In 1992 and 1993 approximately 50 hectares of roadway buffers and parks were planted, including the following locations:

- Whitemud Drive (122 Street to North Saskatchewan River)
- Whitemud Drive (156 Street to 178 Street/ 50 Street to 99 Street)
- Yellowhead Trail (66 Street to North Saskatchewan River)
- Capilano Drive (102 Avenue to 106 Avenue)
- 91 Street (12 Avenue to 34 Avenue)
- 66 Street (40 Avenue to Whitemud Drive)
- James McDonald Bridge interchange
- Jackie Parker Recreation Area
- McKinnon and portions of Mill Creek ravines

We aim to actively naturalize all 200 hectares of roadway boulevard during the 5 year implementation period of the Master Plan. Six parks have been targeted as well - Kennedale Ravine, Hermitage and Rundle Park, McKinnon Ravine, Valley Zoo and Mill Woods Golf Course. We hope to see 100,000 small trees and shrubs planted per year, primarily through the donation of materials and labour.

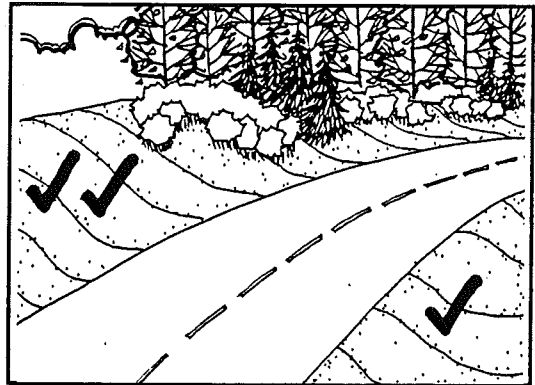
3.0 NATURALIZATION CRITERIA and TYPE

3.1 NATURALIZATION CRITERIA

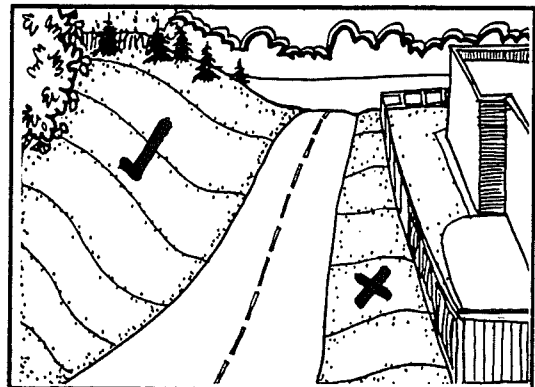
All roadway and park sites considered for naturalization in this study, have been evaluated for suitability based on four main categories with specific criteria as described following:

1. BIOPHYSICAL SUITABILITY

Proximity to Native Vegetation - Existing native vegetation adjacent to the proposed site is very beneficial in the establishment of naturalized areas. Seeds and root suckers from the native stand will help ensure a suitable mixture of species and will provide "free" plants for revegetation.



Size of Area - In order to have a viable, self-sustaining plant community, there must be enough room for proper establishment. As a general rule, the width available should be greater than ten metres with a total area in excess of 300 square metres.

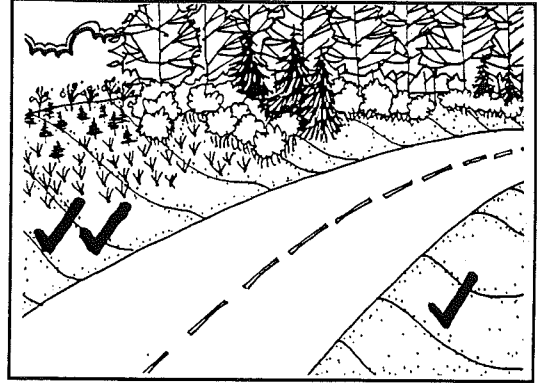


Weed Problem in Area - Because the control of weeds in a naturalized site is likely the biggest challenge to the success of a naturalization project, it is of utmost importance to avoid sites which already have a weed problem. Sites selected for naturalization still require maintenance, and weed control is a significant task.

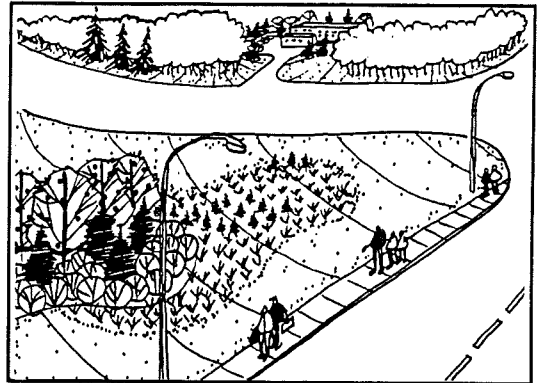


2. AESTHETIC SUITABILITY

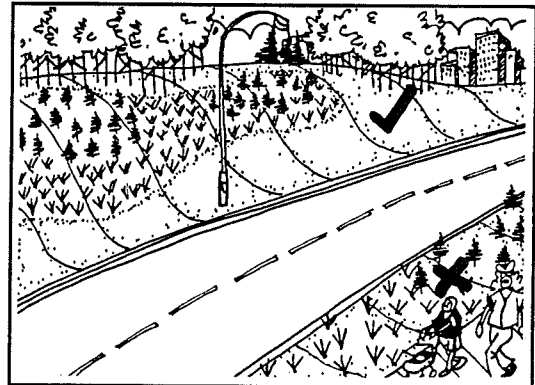
Proximity to Native Vegetation - This criteria is important both from a biophysical perspective and a visual perspective. The ultimate goal of naturalized landscapes is that they appear as though they have always been there. Extending existing natural landscapes is the easiest and most effective means of achieving this goal.



Existing Planted Vegetation - Although less suitable than native vegetation, ornamental tree plantings, if they include a reasonably dense mix of informal tree groupings, will improve the appearance of the newly naturalized site. Care should be taken to respect the original planting design; species compatible with the existing planting should be used and they should be planted in a variety of sizes for a smooth transition from traditional to natural.



Size of Area - In addition to the biophysical reasons for having a relatively large site for planting, the visual aspect is also important. A site which is too small will appear artificial.

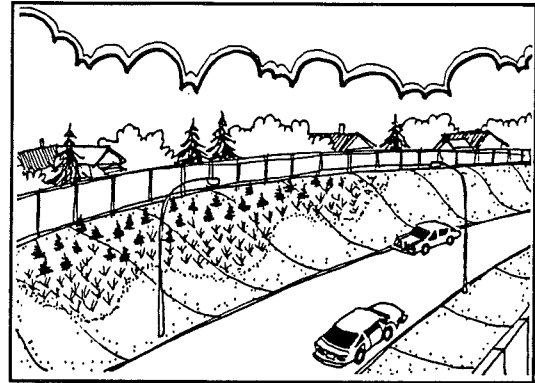


3. LAND USE SUITABILITY

Community Support - The most desirable situation is when a Community Group has initiated a proposal to naturalize a particular site. Most sites, however, will be initiated by the City. It is important that adjacent land owners be consulted for involvement in the final decision. This will help prevent complaints during the establishment period, and avoid the potential of the site becoming a political issue.

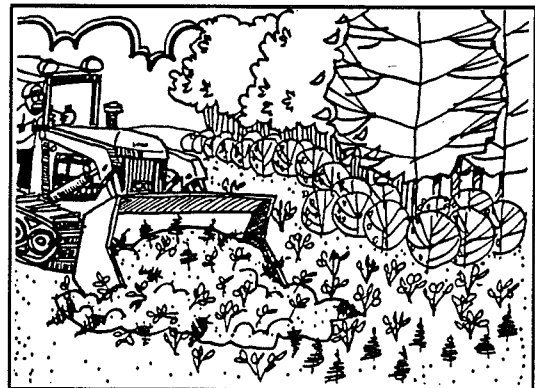


Property Line Definition / Adjacent Land Use - Some land use areas are more suitable for naturalization than others. Commercial areas and residential areas without adequate separation are generally not considered as good potential naturalization sites. If, however, a substantial barrier (ie. berms, noise walls along major roadways) exists to separate the proposed naturalization site from a residential or commercial area, it may be more suitable.



Restrictive Factors - Some areas may be unsuitable for naturalization due to specific uses of the site (ie. the airport due to a concern about the attraction of birds to the area, utility easements where tree planting is not allowed, or existing Community or recreational uses of the site).

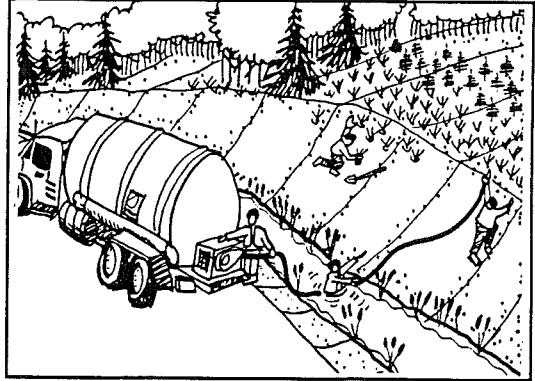
Permanency of Site - A roadway which is scheduled for expansion or re-development in the future should not be considered for a major naturalization planting exercise to avoid wasting resources. Passive naturalization or development of a natural grassland may be suitable.



4. **FINANCIAL / MAINTENANCE / PRACTICAL SUITABILITY**

Amount of Mowing Deleted - The most obvious financial benefit to naturalization is the savings from reduced mowing. Other long term financial benefits are outlined in the Resource Manual.

Accessibility - Although sites which are easily accessible and safe for planting and watering are much easier to naturalize and to ensure success of the plantings, it is the difficult sites which are perhaps most suitable for naturalization. Sites with excessive slopes and poor or dangerous access may be more difficult to plant and maintain through the establishment period, but, they are also very difficult to maintain on an ongoing basis. These sites must be planted with experienced personnel, taking appropriate precautions for safety.



The naturalization Criteria Chart on the following page summarizes all of the information described previously, and indicates high, medium, and low suitability ratings for each of the criteria.

3.2 NATURALIZATION CRITERIA CHART

CRITERIA	HIGH	MEDIUM	LOW
BIOPHYSICAL SUITABILITY			
Proximity to Native Vegetatio	adjacent	N/A	not adjacent
Size of Area	20m wide +	10 - 20 m wide	- 10m wide
Weed Problem in Area	no problem	minor problem	major problem
<i>Factors which will affect method of naturalization and potential success rate include: slope, slope aspect, soils, existing vegetation</i>			
AESTHETIC SUITABILITY			
Proximity to Natural Vegetatio	adjacent	close	far
Existing planted Vegetation	informal / mature	5-10 years	formal / young
Size of Area	1 hectare +	.5 hectare	- 0.3 hectare
<i>Aesthetic factors which may affect the chosen method of naturalization include: Species of existing vegetation in area, location of road (ie. major City entrance)</i>			
LAND USE SUITABILITY			
Community Support	Request / involvement	agreement	opposition
Adjacent Land Use	River Valley / Ravine Natural Park	Park / School / Institute Industrial / Residential with separation	Commercial Residential without separation
Property Line Definition	Natural Vegetation Sound Barrier	Residential Fence	No Definition
Restrictive Factors	no restrictions	some restrictions	serious restrictions
Permanency of site	In perpetuity	10 years +	less than 5 years
<i>Adjacent land uses may affect the chosen naturalization species. (ie. complete visual screening may b desirable in some situations, but adjacent site visibilitiy may be desired in others)</i>			
FINANCIAL / MAINTENANCE / PRACTICAL SUITABILITY			
Amount of Mowing Deleted / Ease of Maintenance	1 hectare + unsafe, difficult mowing	0.3 - 1 hectare	- 0.3 hectare large machine mowing
Accessibility for volunteers	easily accessible / safe	precautions required	not accessible / unsafe
<i>Also related to accessibility is the potential for watering young seedlings. This should be considered when determining the method of naturalization</i>			

NOTES

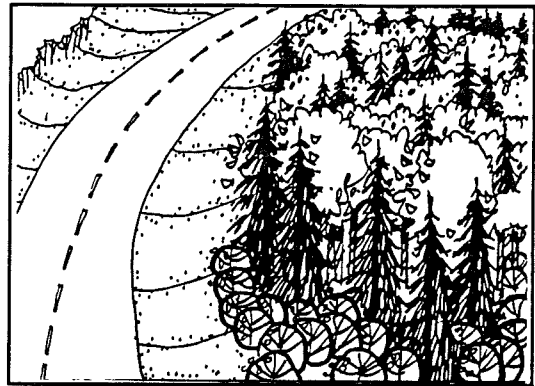
 Any site which receives a low rating in a shaded category is not considered for naturalization at this tim

3.3 NATURALIZATION TYPES

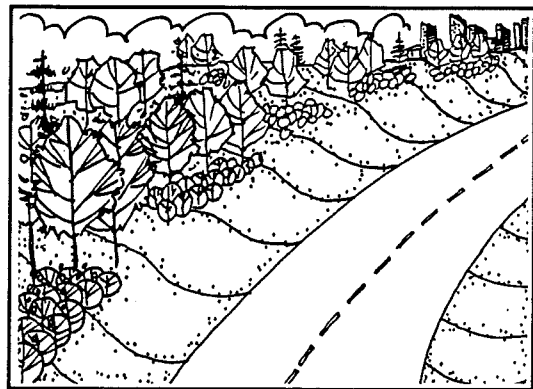
Once the decision has been made to naturalize a site, the method of naturalization must be determined. Several factors must be considered when determining the most suitable method, the most important ones being slope and slope aspect, existing planting on or adjacent to the site, need for screening or for visibility, and site accessibility.

The following brief descriptions give an overview of the five most common landscape types used as models for active naturalization. More detailed information is available in the Resource Manual and a suggested species list for each type is included at the end of this section.

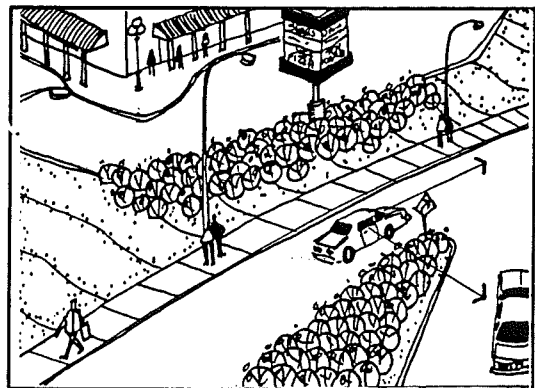
1. **WOODLAND** - The desired end result of woodland naturalization is the creation of a relatively dense vegetation community consisting of a mixed deciduous / coniferous tree strata, a deciduous shrub strata and groundcovers. Grasses would play a small role in this landscape type. This type of naturalization is most suitable for north and east facing slopes and for flat sites with reasonable moisture availability. Dominant species would include white spruce, trembling aspen, and wild rose shrubs.



2. **OPEN WOODLAND** - Open Woodland is comprised of a medium to sparse tree strata consisting primarily of deciduous species, although some evergreen may be desirable for winter effect. Trees included in this type of naturalization are chosen for their tolerance of dry conditions on steep exposed slopes and on dry, exposed sites. Dominant species are Trembling Aspen, Lodgepole Pine, and Wild Rose shrubs.



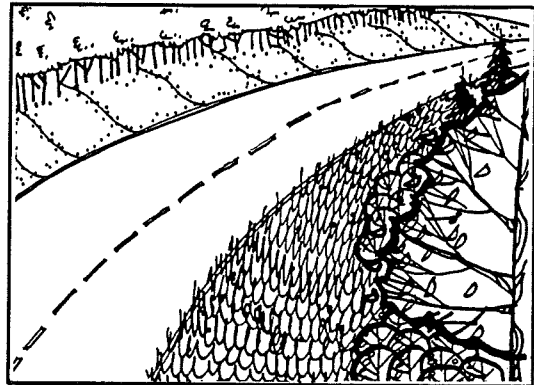
3. **SHRUBS** - Active naturalization with shrubs and without trees, would occur in areas where visibility is a concern or in sites which are too small to create a viable woodland landscape. Shrub naturalization would also be used on extremely dry sites with insufficient moisture to support tree species. Grass species would be of more importance in this type. There are many native Alberta shrubs which are suitable for this type of naturalization as listed in the chart following.



4. **WETLANDS** - Areas of permanent or temporary standing water, such as drainage swales or ponds, could be considered for creation of naturalized wetlands. Passive naturalization may be a very suitable method for these sites, allowing native forbs, grasses and reeds to establish, but planting of riverine tree and shrub species such as Black Poplar and Alder may also be suitable. Wetland naturalization sites have not been identified within any road rights-of-way within this five year plan, however, where low areas or drainage swales are located within a larger site, consideration should be given to the use of wetland species at those sites. They are an important natural ecosystem in our Province and should be considered in park sites and future roadway sites when conditions are appropriate. More information on Wetlands is included in the Resource Manual.

5. **GRASSLANDS** - Grasslands are an important ecosystem which should be considered within the program. A naturalized grassland area is most economical when constructed in conjunction with new site development such as new roadways. In these situations, appropriate seed mixes and ground preparation can be tailored for the specific site. All sites which have been evaluated in this Master Plan have been previously seeded with a variety of seed mixes, none of which were designed specifically for the creation of a natural grassland. To create a native grassland in these locations, it would be necessary to remove existing grass. This is not considered economically viable within the Program at this time, therefore no active grassland naturalization sites have been proposed within this plan. Additional information on grass species and mixes is included in the Resource Manual.

6. **PASSIVE** - Passive naturalization refers to the method of "leaving it to nature". In most roadway situations this simply refers to a non-mowing policy, where weed control is the only maintenance undertaken on the site. Ideally, passive naturalization should occur in sites immediately adjacent to native vegetation stands where native seeds and root encroachment will greatly assist in the process.



3.4 SUGGESTED SPECIES CHART

COMMON NAME	BOTANNICAL NAME	APPROXIMATE % OF MIX	SPECIAL REQUIREMENT
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WOODLAND

WOODLAND TREES

White Spruce	<i>Picea glauca</i>	30%	shelter
Trembling Aspen	<i>Populus tremuloides</i>	20%	
Paper Birch	<i>Betula papyrifera</i>	10%	shelter
Lodgepole Pine	<i>Pinus contorta latifolia</i>	5%	
TOTAL		65%	

WOODLAND SHRUBS

Wild Rose	<i>Rosa woodsii</i> or <i>acicularis</i>	10%	
Saskatoon	<i>Amelanchier alnifolia</i>	5%	
Snowberry	<i>Symphoricarpus albus</i>	5%	
Willows	<i>Salix</i> sp	***	moisture
Dogwood	<i>Cornus stolonifera</i>	***	moisture
Low Bush Cranberry	<i>Viburnum edule</i>	***	moisture
Pin Cherry	<i>Prunus</i>	***	
Choke Cherry	<i>Prunus virginiana</i>	***	
Black Elder	<i>Sambucus melanocarpa</i>	***	moisture
Wild Currant	<i>Ribes triste</i>	***	moisture
TOTAL		35%	

*** remainder of mix to include at least 4 of these species

OPEN WOODLAND

OPEN WOODLAND TREES

Trembling Aspen	<i>Populus tremuloides</i>	25%	shelter
Lodgepole Pine	<i>Pinus contorta latifolia</i>	15%	
Tamarack	<i>Larix laricina</i>	10%	
TOTAL		50%	

OPEN WOODLAND SHRUBS

Wild Rose	<i>Rosa acicularis</i>	15%	
Saskatoon	<i>Amelanchier alnifolia</i>	10%	
Snowberry	<i>Symphoricarpus albus</i>	5%	
Wolf Willow	<i>Elaeagnus commutata</i>	5%	
Pin Cherry	<i>Prunus pennsylvanica</i>	***	
Choke Cherry	<i>Prunus virginiana melanocarpa</i>	***	
Buffaloberry	<i>Shepherdia canadensis</i>	***	
Wild Gooseberry	<i>Ribes hirtellum</i>	***	
TOTAL		50%	

*** remainder of mix to include at least 3 of these species

SHRUBS

Species suitable for Shrub type naturalization include all species indicated in woodland and open woodland shrub list. Percentage of species would depend on location. North or east facing slopes and moist sites should include a mix similar to the Woodland mix, and south or west facing slopes and dry, exposed sites should be planted similar to an Open Woodland mix.

4.0 POTENTIAL SITES for NATURALIZATION

4.1 ROADWAY LANDSCAPING INVENTORY

In order for naturalization planting to proceed on a rational basis, an inventory of all existing roadway landscaping is required to assist with evaluation of potential naturalization sites. This inventory work was completed as the initial component of this Master Plan and is available in a separate document entitled "Roadway Landscaping Inventory".

Future roadway construction projects have not been included within this Naturalization Master Plan. All new areas for roadway buffer construction should be evaluated in accordance with the Suitability Criteria at the time when the Public Works Department circulates new roadway construction proposals.

4.2 UNSUITABLE SITES

All arterial and collector roadways within the City boundary have been reviewed as to their potential for naturalization. Through a preliminary review of the roads using the criteria chart, many have been eliminated as unsuitable and no further review has been undertaken for these sites. As outlined in 3.1 Naturalization Criteria, certain factors will automatically delete the area from consideration for naturalization at this time. These include:

1. **SIZE of AREA** A site which is too small is not viable for naturalization both from a biophysical viewpoint and an aesthetic viewpoint (this eliminates the majority of collector roads in the City)
2. **WEED PROBLEM in AREA** One of the major challenges to naturalization is weed control, therefore, if there is a serious weed problem in the area of the site, it is not recommended for naturalization until the problem is eliminated or controlled.
3. **ADJACENT LAND USE** Some areas are not suitable for naturalization because of the nature of the adjacent land use. Inappropriate adjacent land uses would include commercial or single family residential without suitable buffer zone.
4. **PERMANENCY of SITE** If the roadway (or park site) will be redeveloped in the future, the site is not considered for active naturalization planting at this time.

4.3 ROADWAYS EVALUATED for NATURALIZATION

All roadways which are being considered for naturalization have been evaluated based on the criteria outlined in this chapter. A suitability evaluation chart, along with plans indicating potential planting areas, size of area, and proposed planting type is included for each roadway in an appendix entitled "Naturalization Site Evaluation"

The evaluation charts are intended to provide an overview of roadways in the City showing the locations of the most "suitable " sites for naturalization. Although general prioritization notes for each of the sites are included with the evaluation chart, several other factors must be considered in the determination of the final priority list. These factors are addressed further in the following chapter.

The intent of the roadway plans is to provide information to assist in the final determination of numbers and species of seedlings proposed for any site. Potential planting area designations are shown at a very conceptual level only, and prior to any final determination of naturalization areas, a more detailed review of the site is required. The plans indicate approximate areas to be considered for planting (shown with a standard five meter setback from roadways and property lines). The actual site available, once traffic site lines and other restrictive factors are considered, could be substantially less.

4.4 PARK SITES

Six park sites have been evaluated for potential naturalization areas:

1. Rundle Park
2. Hermitage Park
3. Kennedale Ravine
4. Mill Woods Golf Course
5. McKinnon Ravine
6. Valley Zoo

Specific sites have been identified and reviewed in each park. These sites are indicated on airphoto plans included in the "Naturalization Site Evaluation" appendix with an indication of the size of the potential planting area, and proposed naturalization type. General notes about each site are also included.

The sites shown are at a very conceptual level only, and each site must be reviewed more thoroughly prior to finalizing any naturalization decisions. Residents living adjacent to the park sites should be contacted and park operations personnel should also review the proposed plans.

5.0 PRIORITIZATION of SITES

5.1 PRIORITIZATION CRITERIA

In order to undertake a five year plan for naturalization in the City of Edmonton, it is important to set out clear and defensible criteria for determining the priority of the various sites for naturalization.

Suitability of the location is the primary factor in determining the priority of a site. "Suitability Ratings" were determined for each roadway and each park site using the criteria outlined in chapter 3.0. These ratings were developed for roadways as a whole, not for specific sites along the road. In order to prepare a five year plan, various roadway sites were reviewed in more detail and prioritized based on the following criteria.

1. **SUITABILITY RATING** - This is the rating developed for each roadway (ie. Whitemud Drive, Southeast District) using the criteria described in Chapter 3.0. A suitability rating was also developed for specific sites in the parks included within this study. For more information on the suitability evaluation for each site, refer to "Appendix 1 - Naturalization Site Evaluation".
2. **BENEFIT to CITY** - Factors such as the amount of mowing deleted or aesthetic improvement were reviewed for individual sites. For example, naturalization of the northside buffer of a road could provide a substantial benefit to the City, where the south side or gore areas might be of minimal benefit. In this situation, the north buffer could receive a higher priority rating than the south side.
3. **EXISTING NATURALIZATION.** - Sites where a naturalization program has already been initiated are a high priority to ensure that money and effort already expended are "protected". It is critical to the continuation of the program that initial sites succeed. These sites are identified as high priority sites for infill planting or for addition of more diverse species 2 or 3 years after the initial planting.
4. **LOCATION / ACCESSIBILITY** - Sites which are a logical extension of existing naturalization areas are generally given higher priority than "new" sites. Infill of south facing slopes are a higher priority than north facing slopes due to the observation that south facing naturalization projects have performed less well than north facing slopes and tend to have more serious weed problems. An attempt has also been made to ensure that all districts include some high priority sites and sites were reviewed as to their suitability for volunteer groups. Difficult sites are recommended for planting by experienced crews and safer, more accessible sites are recommended for Community Groups or less experienced volunteers.

The chart on the following three pages summarizes the prioritization of the sites. Each roadway which was evaluated for naturalization potential is included in the chart along with the roadway suitability rating and a priority rating for specific portions of the road. The site priority rating indicates whether the site could be planted by volunteers (a safe and accessible site) or should be planted by experienced personnel (less accessible with safety concerns). For more detailed information on the roadway suitability rating and more detailed comments about specific site restrictions, refer to the separate document, "Naturalization Site Evaluation... Appendix One".

5.2 NATURALIZATION PRIORITIZATION CHART

ROADWAY / PARK SITE	SITE DESCRIPTION	SUIT. RATE	SPECIFIC SITE FACTORS	PRIORITY for GROUP		PRI- ORITY ORDER
				VOL.	CITY	

NORTHWEST DISTRICT

WHITEMUD DR	A. Henday - 178 St n.side	HIGH	Future widening	LOW		12
	A. Henday - 178 St s.side	HIGH		HIGH		2
	178St - 149St n.side	HIGH	naturalization 93		HIGH	3
	178St - 149St s.side	HIGH	naturalization 93		HIGH	4
	178St - 149St road islands	HIGH			LOW	13
	149 St - River	HIGH	no need -mature native veg			
ANTHONY HENDAY	Buffers	HIGH	agricultural	MED		8
	Centre Island	HIGH		MED		9
YELLOWHEAD	199 St - 156 St ..n.side	HIGH		HIGH		6
	199 St - 156 St ..s.side	HIGH		HIGH		7
	149 St intersection	HIGH			LOW	14
	142 St - 121 St s.side	HIGH	no-mow..needs trees		HIGH	1
	142 St - 121 St road islands	HIGH			LOW	15
CAMPBELL RD	St. Albert - St. Albert Tr	HIGH	not enough room in R.O.W.			
137 AVENUE	170 St - St. Albert Tr s.side	HIGH	not much room	MED		10
STONY PLAIN RD	A.Henday - 178 St	MED	small R.O.W., future dev	LOW		11
100 AVE	A.Henday - 170 St..s.side	HIGH	n.facing berm	HIGH		5
167, 153, 95, 87, 69 AVES*		LOW	limited space / residential			
118, 111 AVES*		LOW	limited space / commercial			
107 AVE*		LOW	extensive ornamental			
178, 170, 156, 149, 142 ST.*		LOW	limited space / residential			

NORTHEAST DISTRICT

MANNING FWY	Bndy - 137 Ave	HIGH	new area / entry to City	MED		8
YELLOWHEAD	97 St - 66 St	LOW	no room			
	66 St - River n.side	HIGH	not much room	HIGH		5
	66 St - River s.side	HIGH	naturalization 92	HIGH		3
	66 St - River centre median	HIGH	naturalization 92 (Ukranian)	HIGH		4
CAPILANO FWY	112 Ave to River w.side	HIGH			HIGH	2
	112 Ave to River e.side	HIGH	non-mown slope		HIGH	1
	112 Ave to River road island	HIGH			HIGH	10
97 STREET	176 Ave - 153 Ave w.side	HIGH	existing ornamental	MED		7
	153 Ave - 137 Ave w.side	HIGH	planting on private property	LOW		9
	153 Ave - 137 Ave e.side	HIGH	existing ornamental (spruce)	MED		6
50 STREET*	153 Ave - Manning	LOW	future development		LOW	12
VICTORIA TRAIL*	153 Ave - Yellowhead	LOW	not much room		LOW	11
167, 153 AVES.*		LOW	future dev / residential			
144, 137, 132 AVES.*		LOW	limited space / residential			

* Low priority. Site evaluation plans not prepared for these roads, not included in five year plan

5.2 NATURALIZATION PRIORITIZATION CHART (continued)

ROADWAY / PARK SITE	SITE DESCRIPTION	SUIT. RATE	SPECIFIC SITE FACTORS	PRIORITY for GROUP		PRI- ORITY ORDER
				VOL.	CITY	

SOUTHWEST DISTRICT

TERWILLEGAR DR	Whitemud - 23 Ave w.side	HIGH	wait for grass to mature	HIGH		2
	W.mud - 23 Ave e.side,island	HIGH	wait for grass to mature	HIGH		1
FOX DRIVE	W.mud - Belgravia	HIGH	not much room	LOW		13
BELGRAVIA RD	Fox Dr - o'pass	HIGH	not much room	LOW		12
WHITEMUD DR	River - 122 St w&s.side	HIGH	naturalization 92 / 93	HIGH		4
	River - 122 St e&n.side	HIGH	naturalization 92 / 93	HIGH		3
	111 St Intersection Buffer	MED	ornamental planting		MED	7
	111 St Intersection islands	MED	ornamental planting		MED	8
	111 St - Calgary Trail	MED			MED	9
111 STREET	W.mud Dr - Blackmud Cr w.	HIGH	new area, existing ornamenta	MED		6
	W.mud Dr - Blackmud Cr e.	HIGH	new area, existing ornamenta	MED		5
23 AVENUE*	Saddleback to W.mud Creek	HIGH	future road construction?	LOW		10
UNIVERSITY FARM*	122 St and 51 Ave	HIGH	small benefit	LOW		11
61, 51 AVES, RABBITHILL, RIVERBEND*		LOW	limited space / residential			
34, 23 AVES*		LOW	future road development			
113, 114, 119, 122ST*		LOW	limited space / residential			

SOUTHEAST DISTRICT

SHERWOOD PK FW	50 St to 34 St	HIGH	City Entry	MED		10
	50 St to 34 St road islands	HIGH			LOW	14
CAPILANO FWY	River to 101 Ave w.side	HIGH	naturalization 93		HIGH	6
	River to 101 Ave e.side	HIGH	naturalization 93		HIGH	5
91 STREET	Argyll - W.mud	HIGH	not much room		LOW	13
	Wmud - 23 Ave w.side	HIGH	low maintenance now	MED		11
	Wmud - 34 Ave e.side	HIGH	existing ornamental planting	HIGH		2
	34 Ave - 23 Ave e.side	HIGH	naturalization 93	HIGH		7
WHITEMUD DRIVE	Calgary Tr - 99 St	HIGH	to be done during construction			
	99 St - 75 St n.side	HIGH	naturalization 93	HIGH		3
	99 St - 75 St s.side	HIGH	naturalization 93	HIGH		4
	75 St - 34 St n.side	HIGH		HIGH		9
	75 St - 34 St s.side	HIGH	young grass	HIGH		1
	75 St - 34 St road islands	HIGH			LOW	12
	island at 34 St	HIGH		MED		8
CALGARY TRAIL*		LOW	formal planting theme			
106, 98, 90, 38, 34, 28, 23 AVES*		LOW	limited space / residential			
85, 66, 50 ST*		LOW	limited space / residential			
WHYTE AVE, ARGYLL*		LOW	limited space / commercial			
75, 50 ST*		LOW	future development / commercial			

* Low priority. Site evaluation plans not prepared for these roads, not included in five year plan

5.2 NATURALIZATION PRIORITIZATION CHART (continued)

ROADWAY / PARK SITE	SITE DESCRIPTION	SUIT. RATE	SPECIFIC SITE FACTORS	PRIORITY for GROUP		PRI- ORITY ORDER
				VOL.	CITY	

RUNDLE PARK

SITE 1	golf course buffer..Yellowhea	HIGH	existing ornamental	HIGH		1
SITE 2	east facing slope @ entry	HIGH	existing ornamental	MED		3
SITE 3	River edge by golf course rd	HIGH	some mass planting	HIGH		2
SITE 4	park buffer slope	HIGH	residents adjacent	MED		4
SITE 5	roadway / pool buffer	HIGH	picnic area	LOW		7
SITE 6	park buffer slope	HIGH	residents adjacent	MED		5
SITE 7	park buffer slope	HIGH	residents adjacent	MED		6
SITE 8 and 9	river edge	HIGH	small area, picnicking	LOW		8

HERMITAGE PARK

SITE 1	north end, by natural lake	HIGH	power line R.O.W.	LOW		3
SITE 2	east facing slope, n. of entry	HIGH	native vegetation on slope	MED		1
SITE 3	east of lake	HIGH	some planting, picnic area	LOW		5
SITE 4	east facing slope, s. of entry	HIGH	native vegetation on slope	MED		2
SITE 5	south end of park	HIGH	native vegetation on slope	LOW		4

KENNEDALE RAVINE

SITE 1	n.side, south facing slope	HIGH	some natural shrub growth	HIGH		1
SITE 2	s.side, north facing slope	HIGH	some erosion	HIGH		2
SITE 3	n.side, south facing slope	HIGH	non-travelled areas	LOW		3
SITE 4	s.side, north facing slope	HIGH		LOW		4
SITE 5	s.side, north facing slope	HIGH		LOW		5

McKINNON RAVINE

SITE 1	west end - s. facing slope	HIGH		HIGH		1
SITE 2	west end - n. facing slope	HIGH	small infill areas	MED		4
SITE 3	east of 142 street s.facing	HIGH		HIGH		2
SITE 4	east of 142 street s.facing	HIGH		MED		5
SITE 5	s. facing slope near River	HIGH		HIGH		3
SITE 6	River bank south facing	HIGH		MED		6

VALLEY ZOO

SITE 1	NE edge of site	HIGH	SE facing slope, some trees	HIGH		1
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MILL WOODS GOLF COURSE

SITE 1	west edge of site	HIGH		HIGH		2
SITE 2	north edge of site	HIGH		HIGH		3
SITE 3	north/central slope	HIGH		HIGH		1

6.0 IMPLEMENTATION

6.1 FUNDING STRATEGY

The funding strategy for implementation of the naturalization program is a combination of City funding used as seed money and support from sponsors or partners. As the program evolves from year to year, ideally it will be more self supporting, relying less on departmental current budgets, capital budgets or interdepartmental funding and more on donated labour and donated plant material. Initially, however, Edmonton Parks and Recreation used savings realized from reduced mowing as seed money to start the program. Such funds are anticipated to be available during the five year Master Plan period.

6.2 CITY CONTRIBUTION

Although the City is limited in the support it can give to this program, City funds provide assistance and services in several key areas in support of the program, in the following areas:

1. Negotiate terms and responsibilities with partners or sponsors
2. Assistance with grant applications
3. Planning and design services
4. Preparation of areas to receive planting
5. Loan of some types of equipment
6. Field supervision
7. Limited partnership funding
8. Some maintenance

The City may also be able to direct sponsors to suppliers of plant material of the types which are deemed suitable for the specific location preferred by the sponsor or partner.

6.3 SPONSORSHIP DRIVEN PROGRAM

Ideally the program will operate through sponsors. Those who may be interested in naturalization - community groups, church organizations, the corporate community, service clubs - can get involved through federal and provincial programs, such as the federal Tree Plan Canada program, which provide funding directly to the sponsoring group on a per seedling, or per tree basis. The balance of the funding, labour, and organization time is provided through the efforts of the sponsoring group. Contact the River Valley Outdoor Centre at 496-7275 on how to become a sponsor for the Naturalization Program.

6.4 PARTNERSHIPS

In some instances, the City may be able to assist sponsors if they are not able to complete the naturalization process entirely using their own resources. For example, Edmonton Parks and Recreation may be able to use manpower savings from other operational areas, to be able to plant some donated seedlings and trees. In general, the City wants to receive all donations of either seedlings, trees, labour, or materials such as fertilizers. The City will receive these donations and be responsible to store the materials until such time as they can be used by the City or others.

6.5 EXAMPLES OF COMMUNITY INVOLVEMENT

A number of community groups have participated in the Naturalization Program during the start up period, 1991 to 1993. Examples include the following groups:

Ukrainian Centennial Committee - planted 2000 spruce trees along the Yellowhead Trail during the fall of 1992.

The Mennonite Central Committee - is sponsoring an ambitious naturalization project over a six year period, 1993 to 1998. Their goal is to plant at least 80,000 small trees and shrubs per year preferably in large areas. Their program is viewed as long term with detailed arrangements being made annually between the City and the Mennonite Central Committee.

Riverbend / Brookside Community League - planted 5000 trees and shrubs along Whitemud Drive in the fall of 1993.

School Groups - organized by the Muttart Conservatory, planted 4000 trees around the Muttart Conservatory/James MacDonald Bridge interchange in the spring of 1993 as part of the centenary of Arbour Day.

Community involvement of this type will make the Naturalization Program an unqualified success.

6.6 FIVE YEAR PLAN

It is not possible to determine the amount of seedlings which may be available for naturalization over the next five years. However, in order to prepare a five year plan, the amount of naturalization which was undertaken in 1992 and 1993 can be used as a guide, to set targets for subsequent years. If additional funds or volunteer groups become available, the plan could be completed in a shorter time period. In 1992, 25 000 and in 1993, 142 000 trees and shrubs were planted partly attributable to the very long growing season that year. However, the City only has a certain capacity to manage the program, and substantially more than 100 000 trees, shrubs or seedlings may not be available per year. Therefore, 100 000 will be set as a practical target for each year of the five year plan.

A breakdown of how this could occur each year is given below. This is based on 1 major sponsor and 2 community-based sponsors per year, with the City planting some trees and shrubs as well.

1 major sponsor	80,000
2 community sponsors	6,000
City planted	<u>14,000</u>
TOTAL	100,000

6.7 FIVE YEAR PLAN CHARTS

The following charts indicate a proposed five year strategy for Roadway and Park site naturalization in the City of Edmonton. They are intended as a guideline only, and may be easily adjusted to meet new circumstances such as the availability of additional tree donations or a request by a Community group to naturalize a particular site in their area. Roadway sites are indicated for each of the four districts, park sites are included separately.

Chart Category Explanations

- Size of Area:** The area was calculated through computer generated drawings using a standard five meter setback from all roadways and property lines. In many instances, the required setback will be greater than five meters for visibility, but planting can often occur to the property line. Other restrictive factors such as existing recreational use of the site (ie. tobogganing) may also affect the available area. All sites should be reviewed in more detail prior to the final planting decision.
- Planting Rate:** Standard planting rates are used for various situations as follows:
- 2000/ha This is a low planting rate (one tree per five square metres), and is used only as infill planting in situations where there is existing ornamental planting or the site has been previously naturalized.
- 3000/ha This rate is indicated for very large open areas (such as Terwillegar Drive) with no existing planting. The intent is NOT to space the trees evenly over the entire site at 3000/ha (one tree per 3.3 square metres), but to plant them in smaller, natural grouping at a rate of approximately 10 000/ha (one tree per square metre). Therefore, approximately one third of the entire site would be planted.
- 5000/ha This rate is used for smaller sites without substantial existing planting or for shrub areas. These areas should also include higher density groupings, rather than even spacing throughout the site.
- Number of Plants:** Size of area x planting rate
- Type of Naturalization:** Refer to Section 3.3 Naturalization Types for descriptions. These recommendations should be reviewed on site and adjusted to match existing planting if required.
- Site Priority:** Sites are prioritized for H - high, M - medium, or L-low priority for planting by volunteers or experienced personnel. They are also numbered in order of priority, and a suggested time frame indicated.

6.7 FIVE YEAR PLAN CHART

ROADWAY / PARK SITE	SITE DESCRIPTION	SIZE of AREA	PLANTING RATE	NO. of PLANTS	TYPE of NATURA- LIZATION	PRIORITY for PL. GRP			
						Volunteer City	PRIORITY ORD.	Year	

NORTHWEST DISTRICT

YELLOWHEAD	142 St - 121 St s.side	4.33 ha	2000 /ha	8660	woodland		H	1	1994
WHITEMUD DR	A. Henday - 178 St s.side	4.82 ha	3000 /ha	14460	woodland	H		2	1994
WHITEMUD DR	178St - 149St n.side	7.29 ha	2000 /ha	14580	open w.land		H	3	1995
WHITEMUD DR	178St - 149St s.side	7.56 ha	2000 /ha	15120	woodland		H	4	1996
100 AVE	A.Henday - 170 St..s.side	6.27 ha	5000 /ha	31350	woodland	H		5	1997
YELLOWHEAD	199 St - 156 St ..n.side	11.33 ha	3000 /ha	33990	open w.land	H		6	future
YELLOWHEAD	199 St - 156 St ..s.side	10.54 ha	3000 /ha	31620	woodland	H		7	future
ANTHONY HENDA	Buffers	16.71 ha	3000 /ha	50130	open w.land	M		8	future
ANTHONY HENDA	Centre Island	10.62 ha	3000 /ha	31860	shrubs	M		9	future
137 AVENUE	170 St - St. Albert Tr s.side	3.47 ha	5000 /ha	17350	shrubs	M		10	future
STONY PLAIN RD	A.Henday - 178 St	1.95 ha	5000 /ha	9750	shrubs	L		11	future
WHITEMUD DR	A. Henday - 178 St n.side	4.36 ha	5000 /ha	21800	open w.land	L		12	future
WHITEMUD DR	178St - 149St road islands	2.69 ha	5000 /ha	13450	shrubs		L	13	future
YELLOWHEAD	149 St intersection	0.42 ha	5000 /ha	2100	shrubs		L	14	future
YELLOWHEAD	142 St - 121 St road islands	0.97 ha	5000 /ha	4850	shrubs		L	15	future
TOTALS		93.33 ha		301070 plants					

NORTHEAST DISTRICT

CAPILANO FWY	112 Ave to River e.side	2.53 ha	5000 /ha	12650	open w.land		H	1	1994
CAPILANO FWY	112 Ave to River w.side	1.63 ha	5000 /ha	8150	woodland		H	2	1994
YELLOWHEAD	66 St - River s.side	15.77 ha	2000 /ha	31540	woodland	H		3	1996
YELLOWHEAD	66 St - River centre median	13.93 ha	2000 /ha	27860	open w.land	H		4	1996
YELLOWHEAD	66 St - River n.side	0.78 ha	5000 /ha	3900	open w.land	H		5	1996
97 STREET	153 Ave - 137 Ave e.side	2.20 ha	2000 /ha	4400	woodland	M		6	future
97 STREET	176 Ave - 153 Ave w.side	5.53 ha	2000 /ha	11060	woodland	M		7	future
MANNING FWY	Bndy - 137 Ave	25.92 ha	3000 /ha	77760	open w.land	M		8	future
97 STREET	153 Ave - 137 Ave w.side	0.66 ha	2000 /ha	1320	shrubs	L		9	future
CAPILANO FWY	112 Ave to River road island	0.62 ha	5000 /ha	3100	shrubs		L	10	future
TOTALS		69.57 ha		181740 plants					

SOUTHWEST DISTRICT

TERWILLEGAR D	W.mud - 23 Ave e.side, islan	11.03 ha	3000 /ha	33090	open w.land	H		1	1995
TERWILLEGAR D	Whitemud - 23 Ave w.side	6.34 ha	3000 /ha	19020	woodland	H		2	1995
WHITEMUD DR	River - 122 St e&n.side	18.16 ha	2000 /ha	36320	open w.land	H		3	1997
WHITEMUD DR	River - 122 St w&s.side	18.15 ha	2000 /ha	36300	woodland	H		4	1998
111 STREET	W.mud Dr - Blackmud Cr e	5.28 ha	2000 /ha	10560	open w.land	M		5	future
111 STREET	W.mud Dr - Blackmud Cr w	5.70 ha	2000 /ha	11400	woodland	M		6	future
WHITEMUD DR	111 St Intersection Buffer	5.96 ha	2000 /ha	11920	open w.land		M	7	future
WHITEMUD DR	111 St Intersection islands	0.42 ha	5000 /ha	2100	shrubs		M	8	future
WHITEMUD DR	111 St - Calgary Trail	5.55 ha	5000 /ha	27750	shrubs		M	9	future
TOTALS		76.59 ha		188460 plants					

6.7 FIVE YEAR PLAN CHART (continued)

ROADWAY / PARK SITE	SITE DESCRIPTION	SIZE of AREA	PLANTING RATE	NO. of PLANTS	TYPE of NATURA- LIZATION	PRIORITY for PL. GRP		
						Volunteer	PRIORITY	ORD. Year
						City		

SOUTHEAST DISTRICT

WHITEMUD DRIVE	75 St - 34 St s.side	3.56 ha	5000 /ha	17800	woodland	H		1	1994
91 STREET	Wmud - 34 Ave e.side	6.74 ha	2000 /ha	13480	open w.land	H		2	1996
WHITEMUD DRIVE	99 St - 75 St n.side	10.72 ha	2000 /ha	21440	open w.land		H	3	1997
WHITEMUD DRIVE	99 St - 75 St s.side	11.26 ha	2000 /ha	22520	woodland		H	4	1998
CAPILANO FWY	River to 101 Ave e.side	3.58 ha	2000 /ha	7160	open w.land		H	5	1998
CAPILANO FWY	River to 101 Ave w.side	5.08 ha	2000 /ha	10160	woodland		H	6	1998
91 STREET	34 Ave - 23 Ave e.side	6.61 ha	2000 /ha	13220	open w.land	H		7	future
WHITEMUD DRIVE	island at 34 St	5.63 ha	10000 /ha	56300	shrubs	M		8	future
WHITEMUD DRIVE	75 St - 34 St n.side	0.67 ha	5000 /ha	3350	open w.land	H		9	future
SHERWOOD PK F	50 St to 34 St	4.12 ha	5000 /ha	20600	open w.land	M		10	future
91 STREET	Wmud - 23 Ave w.side	9.61 ha	2000 /ha	19220	open w.land	M		11	future
WHITEMUD DRIVE	75 St - 34 St road islands	2.19 ha	10000 /ha	21900	shrubs		L	12	future
91 STREET	Argyll - W.mud	0.99 ha	10000 /ha	9900	shrubs		L	13	future
SHERWOOD PK F	50 St to 34 St road islands	1.35 ha	1000 /ha	1350	shrubs		L	14	future
TOTALS		72.11 ha		238400 plants					

TOTAL ROADWAY NATURALIZATION	311.6 ha	909670 plants
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RUNDLE PARK

SITE 1	golf course buffer..Y.head	7.40 ha	2000 /ha	14800	woodland	H		1	1994
SITE 3	River edge by golf course rd	4.26 ha	5000 /ha	21300	woodland	H		2	1994
SITE 2	east facing slope @ entry	2.08 ha	2000 /ha	4160	woodland	M		3	1996
SITE 4	park buffer slope	0.67 ha	2000 /ha	1340	open w.land	M		4	1996
SITE 6	park buffer slope	0.85 ha	2000 /ha	1700	open w.land	M		5	1996
SITE 7	park buffer slope	1.71 ha	2000 /ha	3420	open w.land	M		6	1998
SITE 5	roadway / pool buffer	1.03 ha	2000 /ha	2060	open w.land	L		7	future
TOTALS		18 ha		48780 plants					

HERMITAGE PARK

SITE 2	east facing slope, n. of entry	1.26 ha	5000 /ha	6300	woodland	M		1	1997
SITE 4	east facing slope, s. of entry	1.64 ha	5000 /ha	8200	woodland	M		2	1997
SITE 1	north end, by natural lake	1.29 ha	5000 /ha	6450	woodland	L		3	1998
SITE 5	south end of park	1.40 ha	5000 /ha	7000	woodland	L		4	1998
SITE 3	east of lake	2.27 ha	5000 /ha	11350	open w.land	L		5	future
TOTALS		7.86 ha		39300 plants					

KENNEDALE RAVINE

SITE 1	n.side, south facing slope	0.66 ha	5000 /ha	3300	open w.land	H		1	1996
SITE 2	s.side, north facing slope	0.55 ha	5000 /ha	2750	woodland	H		2	1996
SITE 3	n.side, south facing slope	0.50 ha	5000 /ha	2500	open w.land	L		3	1998
SITE 4	s.side, north facing slope	0.12 ha	5000 /ha	600	woodland	L		4	1998
SITE 5	s.side, north facing slope	0.10 ha	5000 /ha	500	woodland	L		5	1998
TOTALS		1.93 ha		9650 plants					

6.7 FIVE YEAR PLAN CHART (continued)

ROADWAY / PARK SITE	SITE DESCRIPTION	SIZE of AREA	PLANTING RATE	NO. of PLANTS	TYPE of NATURA- LIZATION	PRIORITY for PL. GRP			
						Volunteer City	PRIORITY ORD.	GRP Year	

McKINNON RAVINE

SITE 1	west end - s. facing slope	0.65 ha	5000 /ha	3225	open w.land	H		1	1994
SITE 3	east of 142 street s.facing	0.29 ha	5000 /ha	1450	open w.land	H		2	1994
SITE 5	s. facing slope near River	0.98 ha	5000 /ha	4900	open w.land	H		3	1994
SITE 2	west end - n. facing slope	0.16 ha	5000 /ha	775	woodland	M		4	1998
SITE 4	east of 142 street s.facing	0.24 ha	5000 /ha	1200	woodland	M		5	1998
SITE 6	River bank south facing	0.37 ha	5000 /ha	1850	open w.land	M		6	1998
TOTALS		2.68 ha		13400 plants					

VALLEY ZOO

SITE 1	NE edge of site	2.28 ha	2000 /ha	4560	open w.land	H		1	1995
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MILL WOODS GOLF COURSE

SITE 1	west edge of site	3.71 ha	5000 /ha	18550	woodland	H		2	1995
SITE 2	north edge of site	0.60 ha	5000 /ha	3000	woodland	H		3	1995
SITE 3	north/central slope	5.74 ha	3000 /ha	17220	woodland	H		1	1995
TOTALS		10.05 ha		38770 plants					

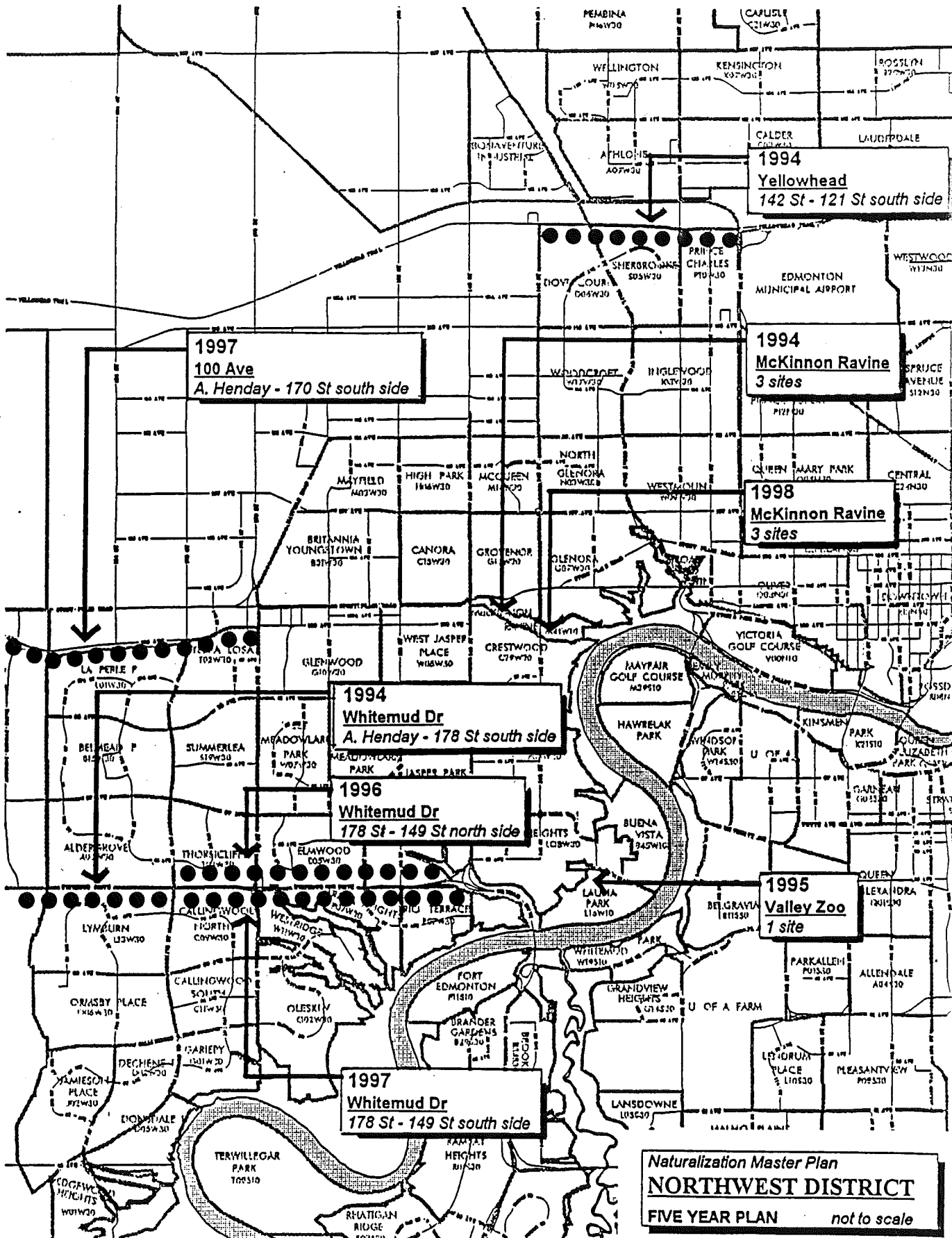
TOTAL PARK SITES		42.8 ha		154460 plants					
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TOTAL AREA for NATURALIZATION		354.4 ha		1064130 plants					
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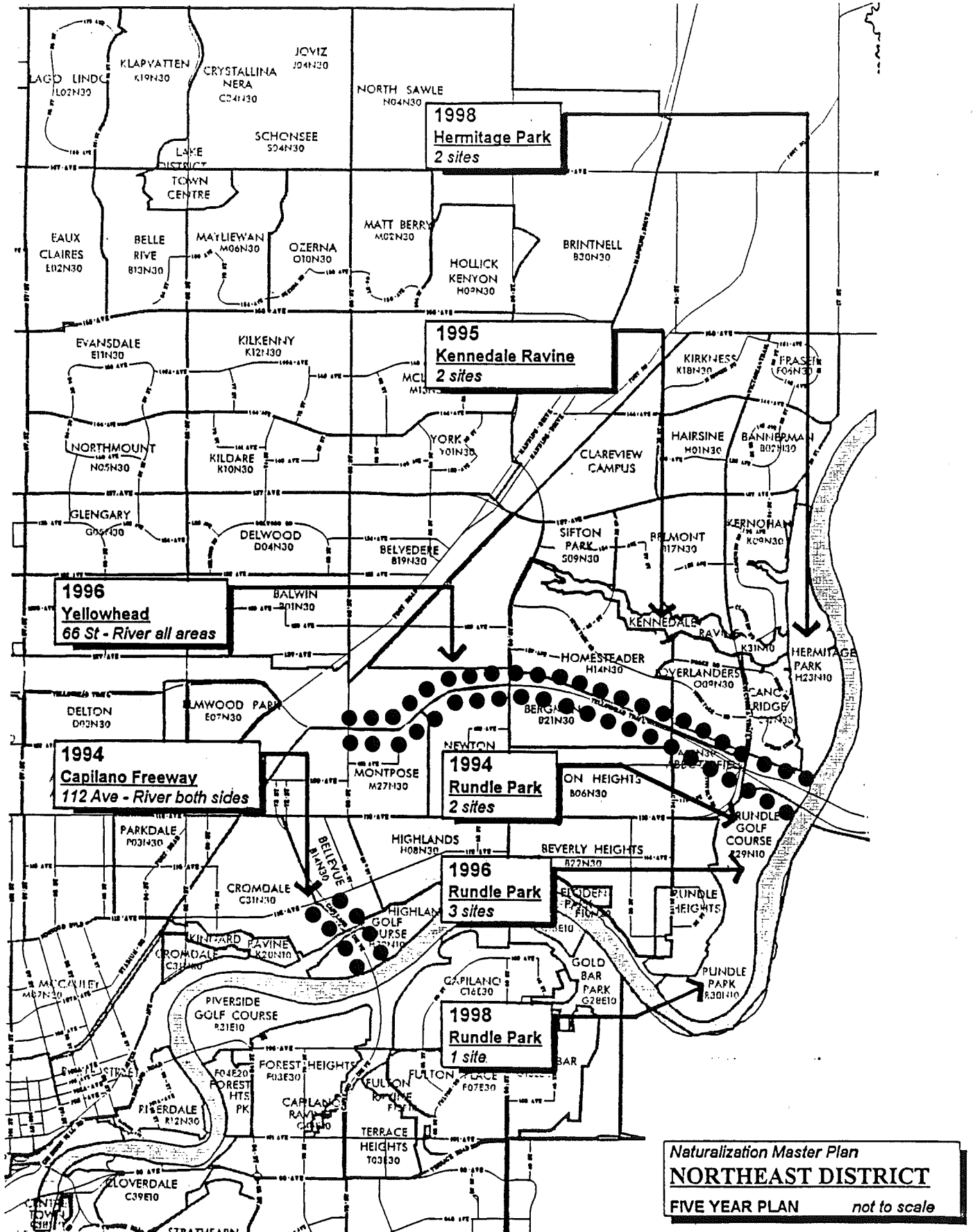
6.8 FIVE YEAR PLAN MAPS

The following four district maps indicate the proposed naturalization sites for each of the five years.

6.8 FIVE YEAR PLAN MAPS...NORTHWEST DISTRICT

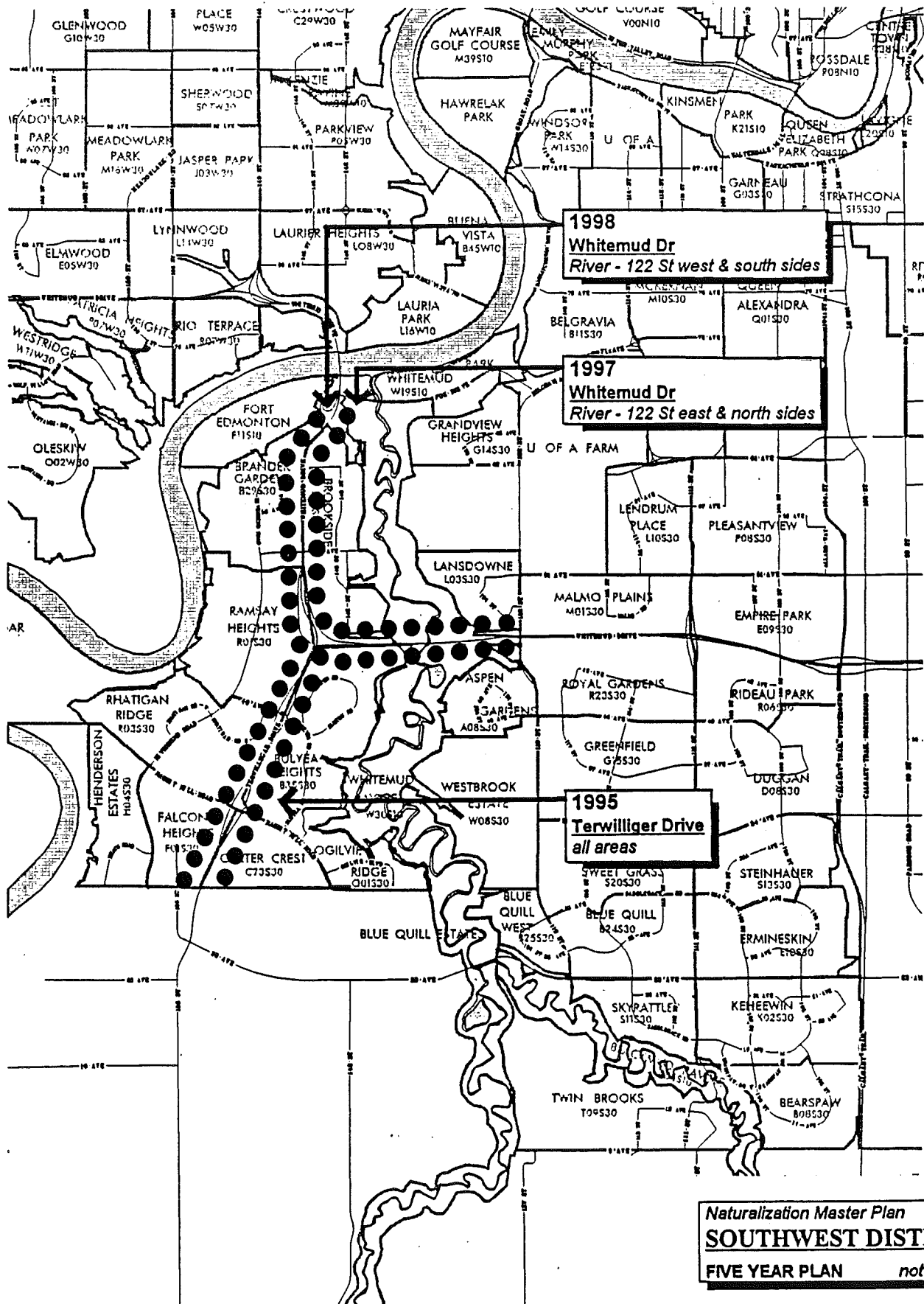


6.8 FIVE YEAR PLAN MAPS ...NORTHEAST DISTRICT

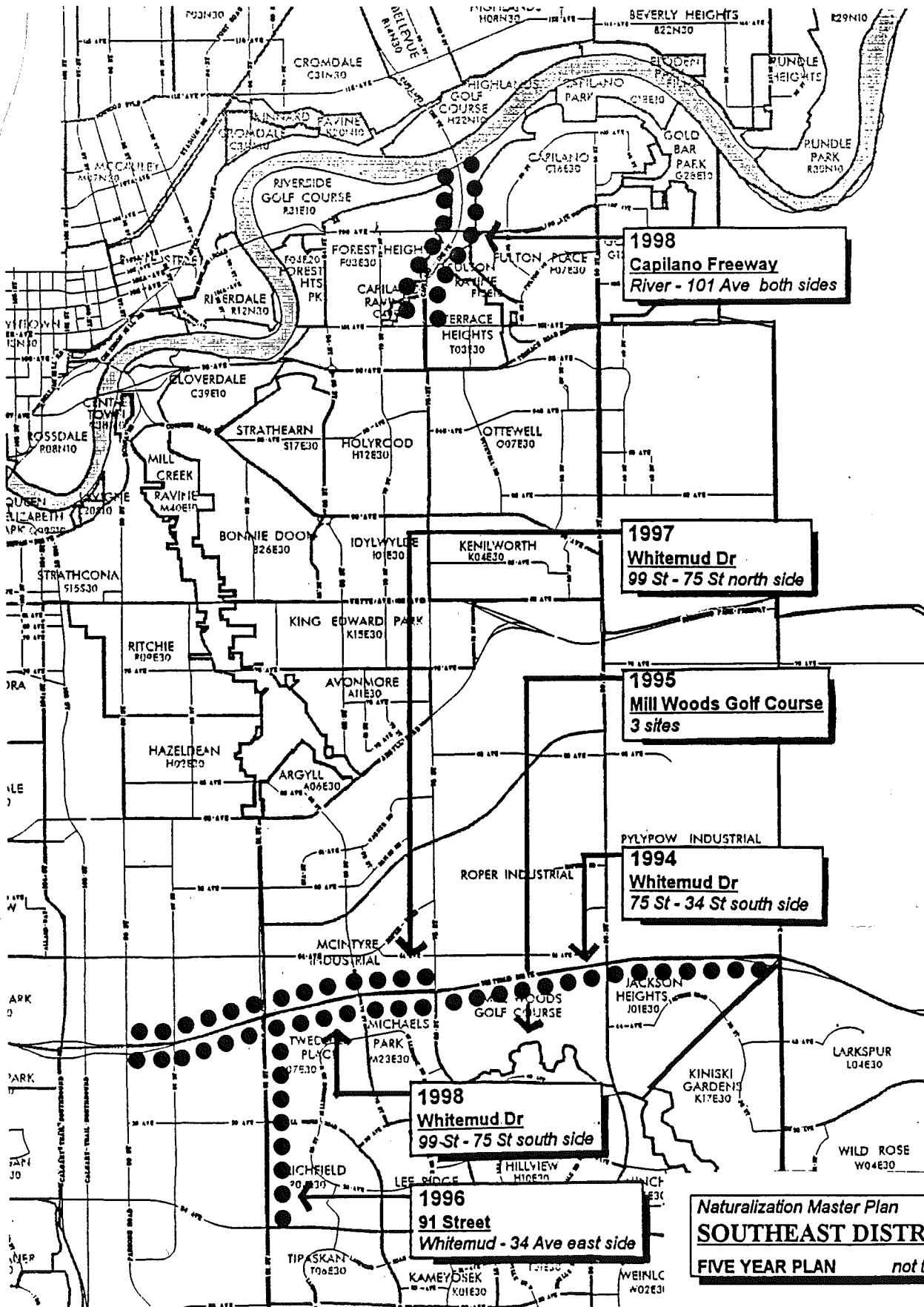


Naturalization Master Plan
NORTHEAST DISTRICT
 FIVE YEAR PLAN *not to scale*

6.8 FIVE YEAR PLAN MAPS ...SOUTHWEST DISTRICT



6.8 FIVE YEAR PLAN MAPS ...SOUTHEAST DISTRICT



7.0 SUMMARY

In this report we have seen that Edmonton Parks and Recreation established a Naturalization Task Force to encourage naturalization as a viable alternative to traditionally mown landscapes. A primary focus for naturalization is roadway buffers which Edmonton Parks and Recreation has responsibility to maintain in accordance with current policies and standards. The benefits of naturalization, both environmental and economic, will be seen if naturalization is carried out over a number of years, as full benefits are not realized until plants have matured.

In order to determine which areas can be naturalized, all roadways were evaluated for their suitability based on four categories: Biophysical, Aesthetic, Land use and Practical suitability. For these suitable areas different naturalization types are possible, either woodland, shrubs, grasses or wetlands. Applying naturalization criteria, most collector roadways were found unsuitable because of their small size. The majority of roadway naturalization can occur along arterial roadways. Selected portions of six park sites (Rundle, Hermitage, Kennedale Ravine, Mill Woods Golf Course, McKinnon Ravine and Valley Zoo) were also evaluated for their naturalization potential and found to be suitable.

Fifty-two roadway and 27 park naturalization sites were evaluated against clear criteria to determine the priority of site planting. The criteria were suitability, benefit to the City, existing naturalization, and accessibility. Each site suitable for naturalization is individually itemized and prioritized in the charts in chapter 6 of this Master Plan.

To implement naturalization in these selected areas community sponsors and partners will be needed. There is limited City funding available for naturalization though the City supports naturalization through assistance to sponsors, providing planning and designing, preparation of areas for naturalization, and the loan of some equipment and field supervision. The priorities outlined in the Five Year Plan are arranged to show site development priorities for each year of the plan divided by Community and City implementation, since some areas may be difficult for volunteers to work in. The target amount of planting over the five years of the Master Plan is 100,000 plants per year for a total of 500,000 for the Master Plan period, 1994 to 1998. Additional site areas, however, are included in the five year plan to facilitate an acceleration of the Program if additional resources become available.

YEAR	NO. of PLANTS for PLANTING by VOLUNTEER GROUPS*			PLANTS for CITY CREWS*	TOTAL
	Large Groups		Small Groups		
1994	32260 R*	36100 P*	9575 P	29460 R	107395
1995	52110 R	38770 P	4560 P	14580 R	110020
1996	76780 R		13250 P	15120 R	105150
1997	67670 R		14500 P	21440 R	103610
1998	36300 R		24295 P	39840 R	100435
TOTALS	265120	74870	66180	120440	526610

NOTES*

R = Roadway Site

P = Park Site

Volunteer Group = inexperienced personnel (requiring safer sites)

City Crews = City personnel or experienced groups (sites which are more difficult or less safe)

8.0 THE FUTURE

This Master Plan focused primarily on developed roadways as Edmonton Parks and Recreation has an ongoing responsibility for maintenance of roadway buffers. During the five year period a portion of these selected areas will be naturalized with a diversity of plant species, either initially or through infill planting in the later years of the five year program. With the majority of established roadway buffers naturalized, the City will turn its program focus towards other areas of the City, especially the river valley system and major City parks. Potential sites for naturalization have been identified and prioritized for several years beyond 1998. After this time, an evaluation of additional sites will be required for continuation of the program.

In the meantime the City will continue to monitor naturalization. It will experiment with new techniques and with different species, especially in areas with poor biophysical suitability. We will learn from the mistakes we make along the way. There is an increasing network of people throughout the Province who have taken a keen interest in this idea. We will be able to share what we have learned and also benefit from their experiences implementing naturalization as an alternative technique to traditional landscapes.