

NOTES:

1. THE FOLLOWING PROVIDES A LIST OF RECOMMENDED PLANTS FOR SPECIFIC APPLICATIONS WITHIN THE PIGEON LAKE AREA.
2. ALL PLANTINGS TO CONSIDER YEAR-ROUND FORM, TEXTURE, COLOUR, AND MASSING.
3. PLANT VARIETIES (VAR.) TO BE SELECTED IN REFERENCE TO THE PLANT HARDINESS ZONE AND PROPOSED PLANTING LOCATION.
4. PLANT HEIGHT: LOW (0 TO 1.5m) TALL (1.5m+)

NATIVE RIPARIAN PLANTS - PER/GRASSES (CONTINUED)



GRASS-OF-PARNASSUS GOLDEN SAXIFRAGE MARSH MARIGOLD WATER ARUM ARROWHEAD BROAD-LEAVED WATER PLAINTAIN SKUNK CURRENT

NATIVE CONIFEROUS TREES



LOGEPOLE PINE WHITE SPRUCE TAMARACK BLACK SPRUCE BALSAM FIR

GRASSES



WHEATGRASS FOXTAIL SLOUGH GRASS

NATIVE PERENNIALS/GRASSES/FERNS PLANTS



BROME BLUEJOINT TUFTED HAIRGRASS MANNA GRASS SWEET GRASS FOXTAIL BARLEY JUNE GRASS HAIRY WILD RYE REED CANARY GRASS FOWL BLUEGRASS COTTONGRASS CHAMOMILE GOATS BEARD ASTER GOLDENROD



PAINTBRUSH COMMON SUNFLOWER SPOTTED JOE PYE FLEABANE PUSSYTOES YARROW BEDSTRAW SPEEDWELL WILD MINT STRAWBERRY DWARF RASPBERRY DWARF DEWBERRY BUNCHBERRY HYSSOP BLUEBELL



JACOB'S LADDER COLLOMIA STARFLOWER WINTERGREEN WILD SARSPAPARILLA FIREWEED WESTERN CANADA VIOLET EARLY BLUE VIOLET WHITE GERANIUM CLOVER CINQUEFOIL AVENS ARGENTINA BISHOP'S HAT LARKSPUR



COLUMBINE ANEMONE BANEBERRY NORTHERN GREEN ORCHID BLUNT-LEAVED ORCHID LADIES-TRESSES BLUE-EYED GRASS SOLOMON'S SEAL WESTERN WOOD LILY LILY-OF-THE-VALLEY FAIRYBELLS

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PIGEON LAKE WATERSHED ASSOCIATION - LID PROJECT
PLANT REFERENCE SHEET

SEPTEMBER 2021

FIG. L202

NOTES:

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3. PLANT VARIETIES (VAR.) TO BE SELECTED IN REFERENCE TO THE PLANT HARDINESS ZONE AND PROPOSED PLANTING LOCATION.
4. PLANT HEIGHT: LOW (0 TO 1.5m) TALL (1.5m+)

RAIN GARDEN PLANTS



DAYLILY IRIS REED GRASSES JOY PYE WEED TUFTED HAIR GRASS BEEBALM ASTER SHOWY MILKWEED GOLDENROD LIATRIS BLACK-EYED SUSAN PURPLE CONEFLOWER SEDUM RUSSIAN SAGE CREEPING JENNY

NATIVE DECIDUOUS TREES



LIGULARIA FERNS CORALBELLS FOAMFLOWER JACOB'S LADDER PURPLE MEADOW RUE COLUMBINE ASTILBE POPLAR TREMBLING ASPEN (NON-CLUMP) TREMBLING ASPEN (CLUMP) TAMARACK CHOKECHERRY PINCHERRY PAPER BIRCH (SINGLE)

NATIVE TALL SHRUBS



PAPER BIRCH (MULTI-STEM) ALDER SASKATOON RED OSIER DOGWOOD Highbush CRANBERRY

NATIVE LOW SHRUBS



PRAIRIE ROSE PRICKLY ROSE WOLF WILLOW CHOKEBERRY PINCHERRY SHRUBBY CINQUEFOIL SNOWBERRY / BUCKBRUSH RED RASPBERRY LOWBUSH CRANBERRY WILD RED CURRENT

NATIVE RIPARIAN PLANTS - SHRUBS



NORTHERN BLACK CURRENT WILD GOOSEBERRY BRACTED HONEYSUCKLE BLUEBERRY KINNIKINNICK BUFFALOBERRY



DWARF BIRCH BEBBS WILLOW BOG CRANBERRY LABRADOR TEA LEATHERLEAF BOG ROSEMARY FERN BUR-REED SEDGES

NATIVE RIPARIAN PLANTS - PER/GRASSES



RUSHES SLOUGH GRASS REED CANARY GRASS MANNA GRASS COTTONGRASS RAGWORT COLTSFOOT VALERIAN SKULLCAP GENITIAN BUCKBEAN SWAMP CRANBERRY WATER PARSNIP FIREWEED MARSH CINQUEFOIL

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PLANT REFERENCE SHEET**

SEPTEMBER 2021

FIG. L201

NATIVE TOPSOIL

SOIL OBTAINED FROM ON-SITE SOURCES SHALL MEET OR BE AMENDED TO MEET THE SPECIFICATIONS FOR IMPORTED SOIL UNLESS OTHERWISE AUTHORIZED BY THE CONSULTANT. ADMIXTURES ALLOWED WILL INCLUDE LIVE PLANTS, ROOT PIECES SHORTER THAN 300mm AND 12mm DIAMETER, SEEDS, OR UN-DECOMPOSED ORGANIC MATTER (DUFF) AS REQUESTED FOR PURPOSES OF RECLAMATION.

IMPORTED TOPSOIL

FERTILE NATURAL LOAM, CAPABLE OF SUSTAINING HEALTHY GROWTH. TOPSOIL SHALL BE LOOSE AND FRIABLE, FREE OF SUBSOIL, CLAY LUMPS, STONES, LIVE PLANTS, ROOTS OR ANY OTHER DELETERIOUS MATERIAL GREATER THAN 20mm DIAMETER. TOPSOIL SHALL BE FREE OF LETTER, FOREIGN MATTER AND TOXIC MATERIALS HARMFUL TO PLANT GROWTH. TOPSOIL CONTAINING CONSTRUCTION DEBRIS, SOD CLUMPS, QUACKGRASS OR OTHER NOXIOUS WEEDS IS NOT ACCEPTABLE. SUPPLY OF TOPSOIL SHALL MEET THE FOLLOWING REQUIREMENTS:

ACIDITY/ALKALINITY SHALL RANGE FROM 6.0 PH TO 7.5 PH.

ELECTRICAL CONDUCTIVITY (E.C.) - LEVEL OF SOLUBLE SALTS SHALL NOT EXCEED 1.5 dS/m.

TEXTURE: "LOAM TOPSOIL" IN ACCORDANCE WITH CANADIAN SYSTEM OF SOIL CLASSIFICATION. TOPSOIL SHOULD FALL WITHIN THE FOLLOWING ALLOWANCE:

SAND - 35% (+/-5%) BY DRY MASS; SILT - 35% (+/-5%) BY DRY MASS; AND CLAY - 30% (+/-5%) BY DRY MASS. ORGANIC MATTER - 5% -10% BY DRY MASS.

SODIUM ABSORPTION - LESS THAN 6.

LOW IMPACT DEVELOPMENT (LID: BIO-SWALE) TOPSOIL:

LOAMY SAND TO SANDY LOAM TEXTURE, TO INSTALLED IN COMBINATION WITH COARSE GRAVEL AND SAND FILER LAYERS (REFER TO DETAILS) SUPPLY OF LID TOPSOIL SHALL MEET THE FOLLOWING REQUIREMENTS:

ACIDITY/ALKALINITY SHALL RANGE FROM 6.0 PH TO 7.5 PH.

ELECTRICAL CONDUCTIVITY (E.C.) - LEVEL OF SOLUBLE SALTS SHALL NOT EXCEED 2.0 dS/m.

TEXTURE: 0-3% COARSE GRAVEL (<19mm TO 40mm); 0-5% GRAVEL (2mm TO 40mm); 50-85% SAND (2mm TO 0.05mm); 10-15% SILT (0.05mm TO 2mm); 3-10% CLAY (<2mm) - CLAY AND SAND COMBINED - MAXIMUM 20%; 5-10% ORGANIC MATTER CONTENT.

SODIUM ABSORPTION - LESS THAN 3.

SATURATION: 20-30%

TOTAL PHOSPHOROUS: 10-30 mg/kg

SATURATED HYDRAULIC CONDUCTIVITY: 25mm/hr (min.)

WETLAND SOILS

ARE TO BE SALVAGED FROM APPROVED WETLAND SITES THAT ARE SLATED FOR REDEVELOPMENT AND HAVE UNDERGONE ASSESSMENT AND REVIEW VIA THE ALBERTA WETLAND POLICY. ALL SALVAGE WETLAND SOILS ARE TO BE PLACED AS SHOWN IN THE DRAWINGS TO A MINIMUM DEPTH OF 150mm. TEMPORARY HYDROLOGY CONTROL MAYBE REQUIRED TO OBTAIN VEGETATION ESTABLISHMENT.

NATIVE SHORT GRASS SEED MIX

(AT - ZONE 5 CENTRAL PARKLAND)

25% SLENDER WHEATGRASS

10% NORTHERN WHEATGRASS

15% FRINGED BROME - 50% ULTRACOAT

15% GREEN NEEDLEGRASS

10% CANADA WILDRYE

10% INDIAN RICEGRASS

10% NUTTALL'S ALKALIGRASS

5% WESTERN WHEATGRASS

SOW NATIVE SEED MIX USING BROADCAST

SPREADER AT A RATE OF 75 kg/ha. DO NOT APPLY

FERTILIZER AT THE TIME OF SEEDING OR FOLLOWING

SEEDING. DRILL SEEDING SHALL BE TO A DEPTH OF

10mm. ADD A NURSERY CROP OF BARLEY OR OTHER

SUITABLE CROP AT 10 kg/ha TO THE MIX.

NATIVE TALL GRASS SEED MIX

15% NORTHERN WHEATGRASS

15% WESTERN WHEATGRASS

10% SLENDER WHEATGRASS

30% ROCKY MOUNTAIN FESCUE

10% WESTERN PORCUPINE GRASS

10% PRAIRIE JUNEGRASS

10% GREEN NEEDLEGRASS

SOW NATIVE SEED MIX USING BROADCAST

SPREADER AT A RATE OF 75 kg/ha. DO NOT APPLY

FERTILIZER AT THE TIME OF SEEDING OR FOLLOWING

SEEDING. DRILL SEEDING SHALL BE TO A DEPTH OF

10mm. ADD A NURSERY CROP OF BARLEY OR OTHER

SUITABLE CROP AT 10 kg/ha TO THE MIX.

WET MEADOW GRASS NATIVE SEED MIX

25% FOWL BLUE GRASS

15% TUFTED HAIRGRASS

15% CANADA WILDRYE

10% WESTERN WHEATGRASS

10% RED TOP

10% SLENDER WHEATGRASS

15% DOMINATOR

SOW NATIVE SEED MIX USING BROADCAST

SPREADER AT A RATE OF 75 kg/ha. DO NOT APPLY

FERTILIZER AT THE TIME OF SEEDING OR FOLLOWING

SEEDING. DRILL SEEDING SHALL BE TO A DEPTH OF

10mm.

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DRILL SEED RATE: 17-34 kg/ha
BROADCAST RATE: 34-68 kg/ha
HYDROSEED RATE: 135-180 kg/ha

NATIVE PLANTS SEED MIX - ALCLA

SHEEP FESCUE (FESTUCA OVINA)
FOWL BLUEGRASS (POA PALUSTRIS)
ALPINE BLUEGRASS (POA ALPINA)
JUNE GRASS (KOELERIA MACRANTHA)
WESTERN WHEATGRASS (PASCOPYRUM SMITHII)
CALGARY, AB alclanativeplants.com

BIO-ENGINEERING PLANTS AND TECHNIQUES

LIVE STAKING - INSERTION OF LIVE WOODY STAKE CUTTINGS, TYPICALLY 0.5-1m LENGTH, ON SLOPE OR STREAM BANKS. THE PORTION OF THIS STEM IN THE SOIL WILL GROW ROOTS (REINFORCING SOIL), AND THE EXPOSED PORTION WILL DEVELOP INTO A BUSHY RIPARIAN PLANT.

POLE PLANTING - LARGER AND LONGER THAN LIVE STAKES, THESE CAN PROVIDE BETTER MECHANICAL BANK PROTECTION DURING PLANT ESTABLISHMENT. DENSE ARRAY OF POSTS CAN REDUCE VELOCITIES NEAR THE BANK AND POSTS REINFORCE BANKS AGAINST SLUMPING.

LIVE SILTATION - INSTALLATION OF WILLOW CUTTINGS ALONG A TRENCH, EXCAVATED AT THE WATER'S EDGE. THE CUTTINGS ARE INCLINED TO OVERHANG THE RIVER, WITH SOIL PLACED BACK IN THE TRENCH. THIS METHOD INCREASES THE BANK ROUGHNESS, WHICH ENCOURAGES DEPOSITION AND REDUCES BANK EROSION.

BRANCH LAYERING - LIVE BRUSH LAYERS ARE LAYERS OF LIVE WILLOW CUTTINGS THAT ALTERNATE WITH SUCCESSIVE LIFTS OF SOIL FILL. SEVERAL LAYERS ARE BUILT TO REINFORCE THE SLOPE OR EMBANKMENT.

BRUSH MATTRESS - A THICK BLANKET 6-12" OF LIVE BRUSHY CUTTINGS AND SOIL FILL. THE DENSE LAYER OF BRUSH INCREASES ROUGHNESS, REDUCES VELOCITIES AT THE BANK FACE AND PROTECTS IT FROM SCOUR, WHILE TRAPPING SEDIMENT AND PROVIDING HABITAT.

VEGETATED MECHANICALLY STABILIZED EARTH (VMSE) - CONSISTS OF ALTERNATING LAYERS OF LIVE WILLOW CUTTINGS WITH SOIL WRAPPED IN NATURAL FABRICS, TRMS OR GEOGRIDS. SEVERAL OFFSET LAYERS ARE BUILT UP TO MAKE THE STREAM BANK.

COMMON NATIVE BIO-ENGINEERING PLANTS



BASKET WILLOW

SANDBAR WILLOW

HOARY WILLOW

BEAKED WILLOW

BEBBS WILLOW

MEADOW WILLOW

PUSSY WILLOW

SHINING WILLOW

RED OSIER
DOGWOOD

BALSAM POPLAR

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FIG. L204