Sustainability Street Pollinator Garden Proposal

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University of British Columbia

LARC 515

November 30, 2016

Alina Kouneva Wednesday, November 30, 2016

SUSTAINABILITY ST. - PROGRAM

LARC 515 - ASSIGNMENT #4

My intention with this garden is two fold: create a garden that slows people down so that they notice, take a seat, capture a view of beauty; and the other to increase the pollinator habitat potential of this garden's current state. To create this I focused on the four components mixed forest (40% conifer), hedgerow (due to lack of space for old field), meadow, and wetland.

MIXED FOREST:

I am using the common thread of perch to connect the bird habitat with the human experience. As such, I propose to create a mixed forest's edge condition from NW to SE. To do so I propose using the findings of 'Creating Quality Habitats' by Patrick Mooney. I start by adding to the existing tree canopy. Naturally, with the inclusion of Western Hemlock, additional Shore Pine, Hawthorn, Cascara, Serviceberry and more, the food supply for our resident birds in later winter and early spring should be ample for this small site. Currently there is a Maple, an Oak and one Shore Pine. I propose a stratification of canopy both vertically and laterally. To achieve this the trees on the souther and northern edges are taller, signifying entry. As you approach the main intersection of Sustainability St., the central entry to the CIRS building, you feel as though you have entered a clearing in a forest being surrounded by Vine Maple, Willow, and Serviceberry. Similarly as how birds find refuge in a tree canopy network so too will the main path of Sustainability street feel as this new alley of trees shelters you from sun and light rains.

The understory is littered with nectar and berry borders such as Mock Orange, Nootka Rose, and Snowberry. Employing Nassauer's principles in 'Messy Ecosystems, Orderly Frames. The main alley is bordered with evergreen low barriers of Salal, Evergreen Huckleberry, and Creeping Mahonia. A native approach to a formal garden, quite loosely so as no hedging is required here.

As you walk along the alley and look south you will notice opportunities to get a view across the swale and wetland and see Piet Odoulf style analogous cool tone drifts of Verbena, Lupine, Milkweed, Aster and Sea Holly. If you look farther north you will see warm tone analogous drifts of Sneezeweed, Butterflyweed, Blanket Flower and a punch of Queen Anne's Lace.

HEDGEROW:

The hedgerow here, in massing of 2 - 5 meters and roughly 10 - 12m runs[3] not only creates intriguing around the corner but also frames open areas for viewing across 'the perch' to occur. To assure a soft transition from forest to meadow[3] I propose vertical stratification on the south side of the main path to occur in combination of Oceanspray, Witch Hazel and Creeping Mahonia.

In the hedgerow is where you will find an increase of benches by 333%, from 3 to 10, scattered throughout creating opportunity for solidarity as well as socializing. Most bench locations have been nestled into the hedgerow for prospect refuge[4] but some are intentionally left in the open for a more social and interactive opportunity.

Part of the hedgerow is the inclusion of oversized boulders that not only provide additional seating areas but also separate the meadow from woody shrubs thus making maintenance easier for the landscaping team.

WETLAND:

To provide as adequate as possible manmade environment for birds and bees alike, the inclusion of water is quite necessary[3]. I propose to fill in the current swale by 10" and create pockets of swales that are lined allowing for water to collect and bees and birds to drink. In addition, with Patrick Mooney's calculating assistance, I propose a catch basin at the bottom of

the current swale. The west fork should be filled and the east fork expanded to form a natural legume shaped catch basin.

MEADOW:

The meadow truly is a place of beauty. Piet Odoulf plays a big influence here as the space is entirely shaped featured through the display of purpled, yellow, orange and red displays of perennial drifts. The warm toned drifts feature Queen Anne's Lace as it will sit the tallest of the bunch while the cool toned drifts feature Verbena. In the summer, when the butterflies are out and about, these drifts will be a spectacle for any nature photographer or nature lover alike to enjoy.

In addition to planted drifts, inspired by Melody Redekop's amazing research, I have also included drifts of bare soil. This will require some maintenance from the landscapers but minimally only as they are 1 meter in diameter. These are well hidden amidst the tall meadow grasses and should not be visible to the regular passer by, but plenty visible to our bees in need of shelter.

WORKS CITED

[1]Kaplan, Rachel, Stephen Kaplan and Robert L. Ryan. 1998. *With People in Mind: design and management of everyday nature*. Washington DC: Island Press, 1998.

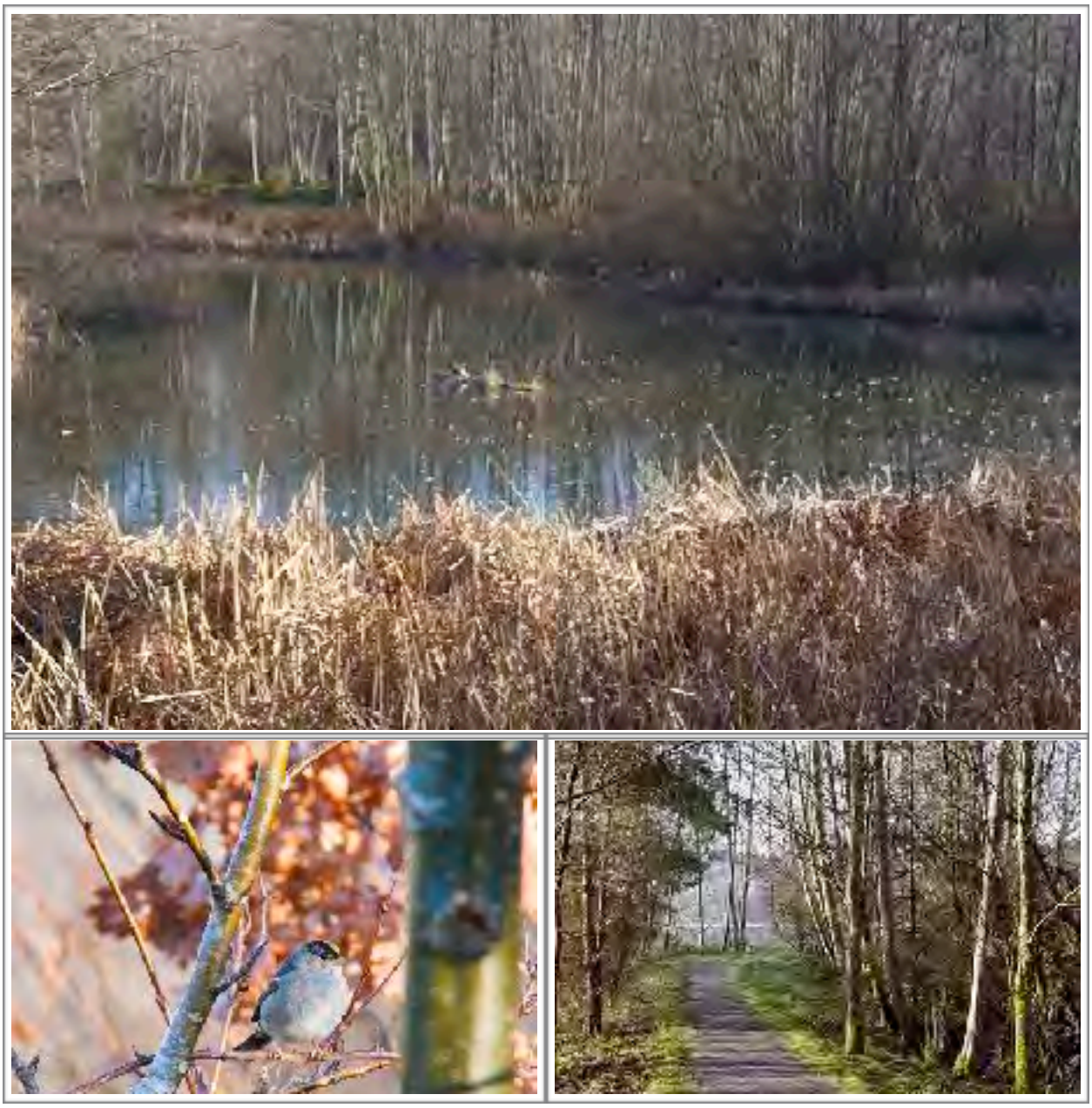
[3]Mooney, Patrick. ‘Creating Quality Habitats’

[4]Robinson Nick 2004. *The Planting Design Handbook.* Chapter 4 *Creating Spaces With Plants.* Pages 44 and 89.

[5]Nassauer, Joan Iverson . “*Messy Ecosystems, Orderly Frames”* 1995

Sustainability St. Precedent:

Maplewood Flats Conservation Area, North Vancouver



Alina R. Kouneva

LARC 515 Planting November 30th, 2016

Although Maplewood Flats and UBC's Sustainability Street don't have much in common, but what little they do share lies in restoration initiatives to increase wildlife habitat as well as accessibility and enjoyability for us humans as well.

Aside from being a 300+ acre site, Maplewood is a tidal flat[1], and a coastal site. Despite the fact that Sustainability street is less than half an acre, it is raised and inset on a cliff, albeit, relatively coastal. What inspiration drawn from Maplewood is the replica of a mixed-forest edge composition. To create this I too focus on the same four components mixed forest (40% conifer), hedgerow (due to lack of space for old field), meadow, and wetland.

And although my proposed wetland will not host any fish, I do hope it's wide and shallow design will invite a variety of finches and sparrows and hopefully some starling.

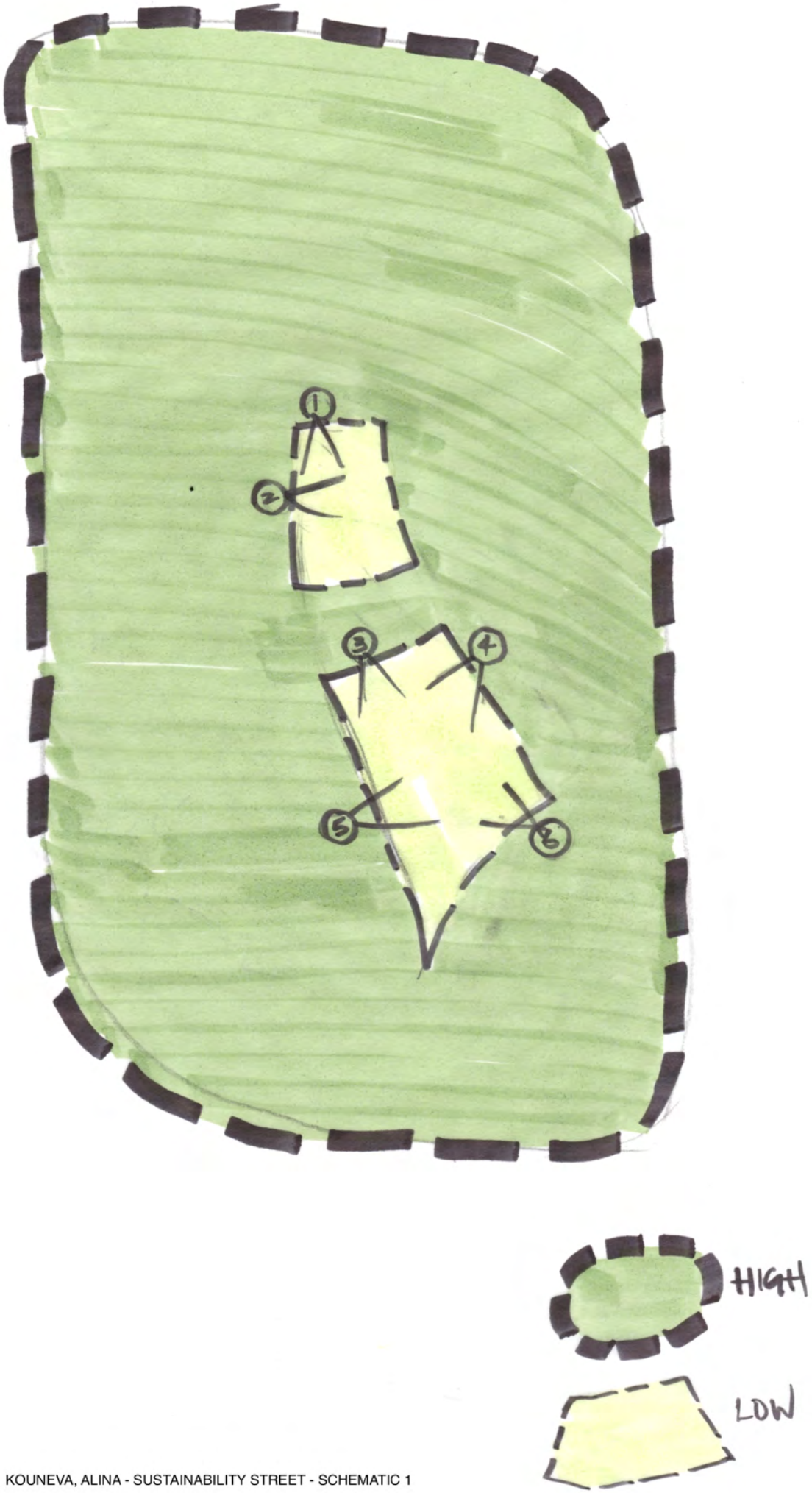
There was a time, over 20 years ago[1], when there were not many birds visiting the Maplewood site, but with the restoration transformation, by our very own Patrick Mooney, the quiet industrial is now a haven for mammal and avian and riparian habitats. That too is my intention here. Working with what the site can offer I have included a few small water capture basins a larger $35m^2$ capture basin while increasing the tree canopy by 500% from 3 trees to 15 trees and large shrub or small trees.

Just like Maplewood where birds are not the only inhabitants, I too an focusing on the massive increase of bee and butterfly habitat as well. I aim to achieve this through the inclusion of an array of blooming trees, shrubs and perennials rich of nectar and nutrients for bees, caterpillars and butterflies of all varieties.

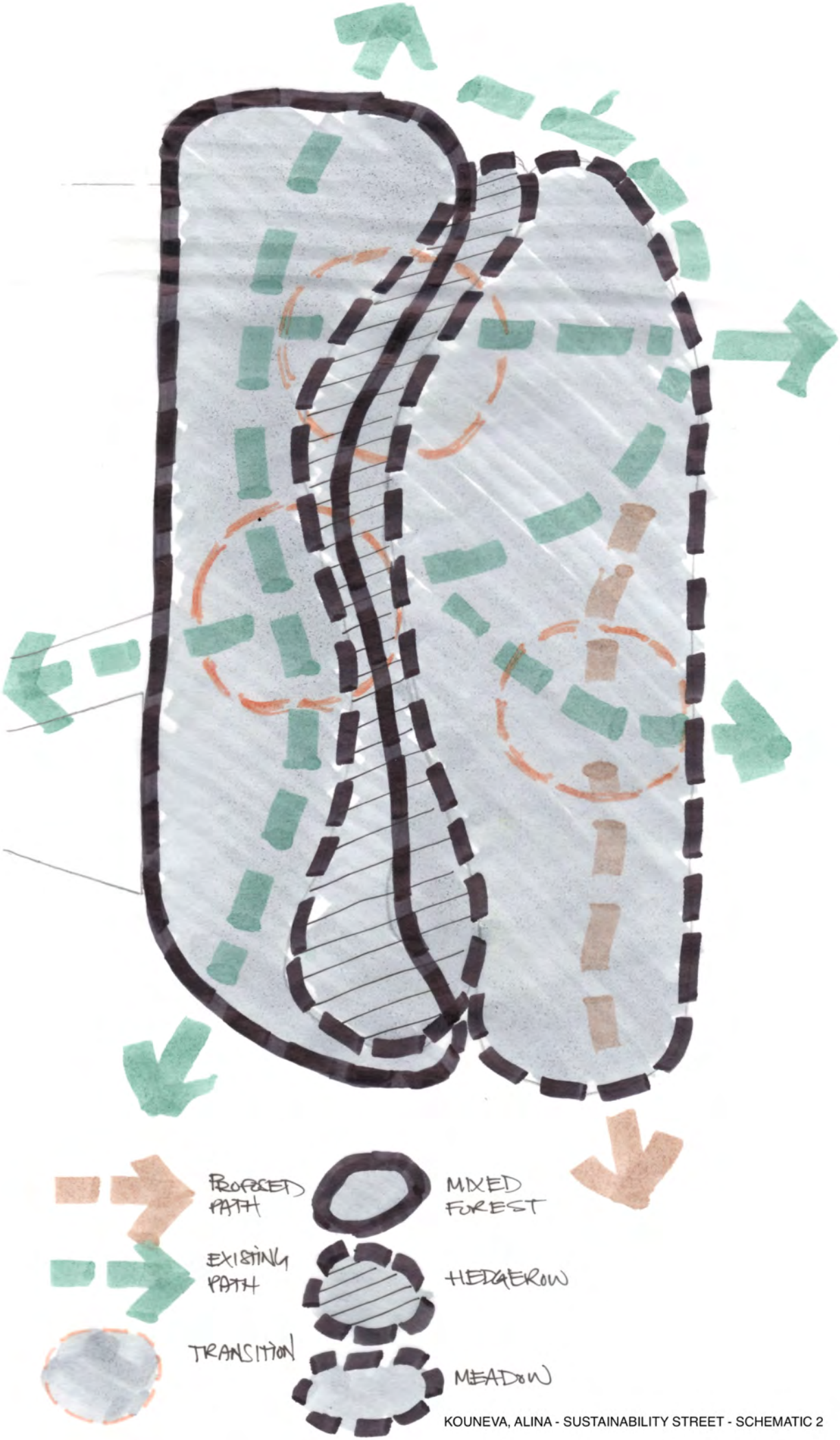
But perhaps the most exciting Maplewood influence on my approach to Sustainability street is the inclusion of viewpoints[1]. Just like we are creating perches for birds to rest and view so too am I creating the opportunity for people to view from a high point across the swale and wetland. To accomplish this I increased and provided seating benches and oversized boulders. Bench provision increased by 333%, from 3 to 10, scattered throughout creating opportunity for solidarity as well as socializing.

Lastly, although Maplewood flats has over 3km of accessible trails, the steep nature of Sustainability St does allow this to occur. Having said that I did add a much needed path on the south of the property to increase connectivity and create viewpoints.

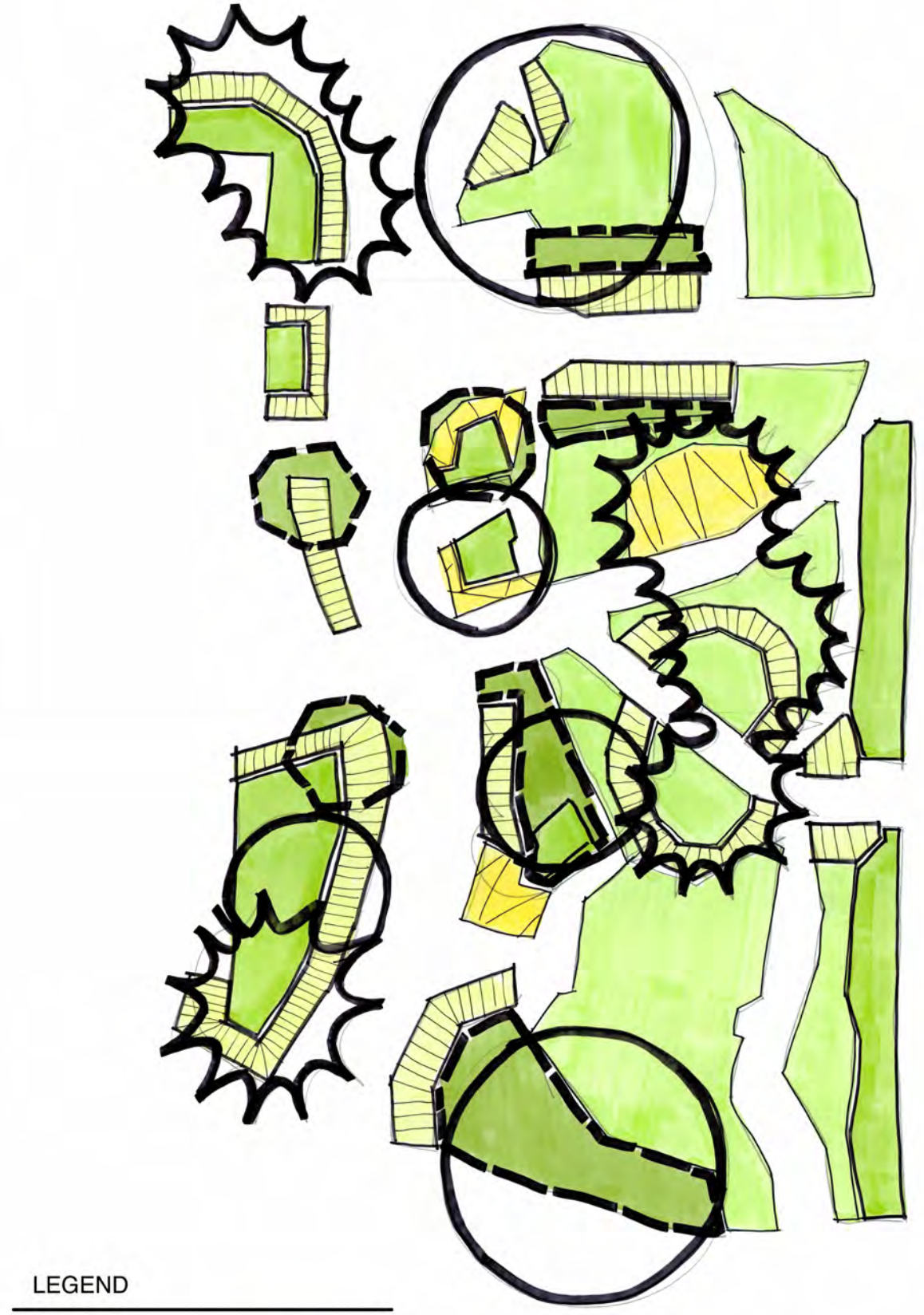
Source: [1]https://en.wikipedia.org/wiki/Maplewood_Flats_Conservation_Area



KOUNEVA, ALINA - SUSTAINABILITY STREET - SCHEMATIC 1



KOUNEVA, ALINA - SUSTAINABILITY STREET - SCHEMATIC 2



LEGEND

Evergreen Barrier

Evergreen Groundcover

Deciduous Groundcover

Deciduous Baffle

Deciduous Barrier

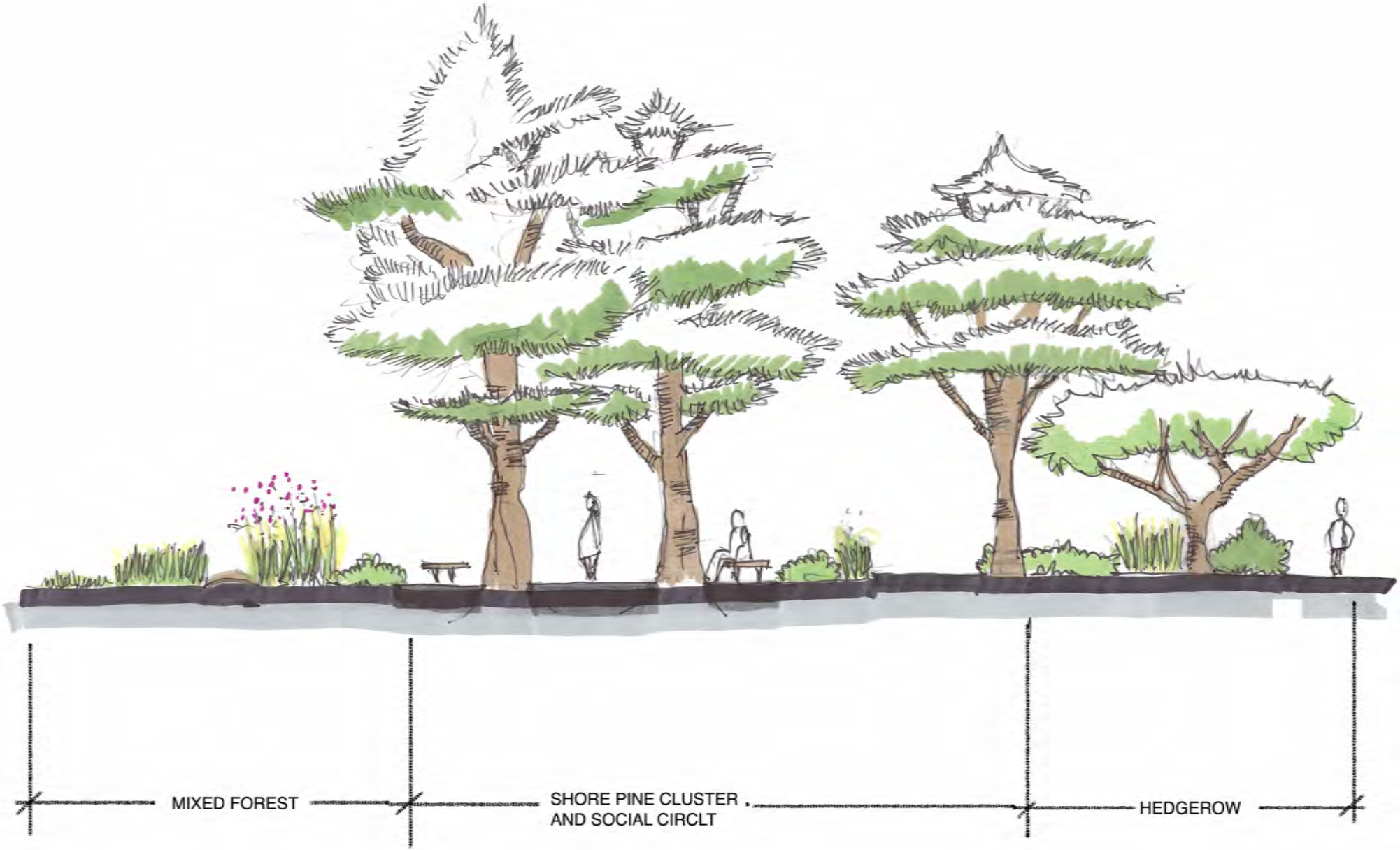
Deciduous Canopy

Evergreen Canopy

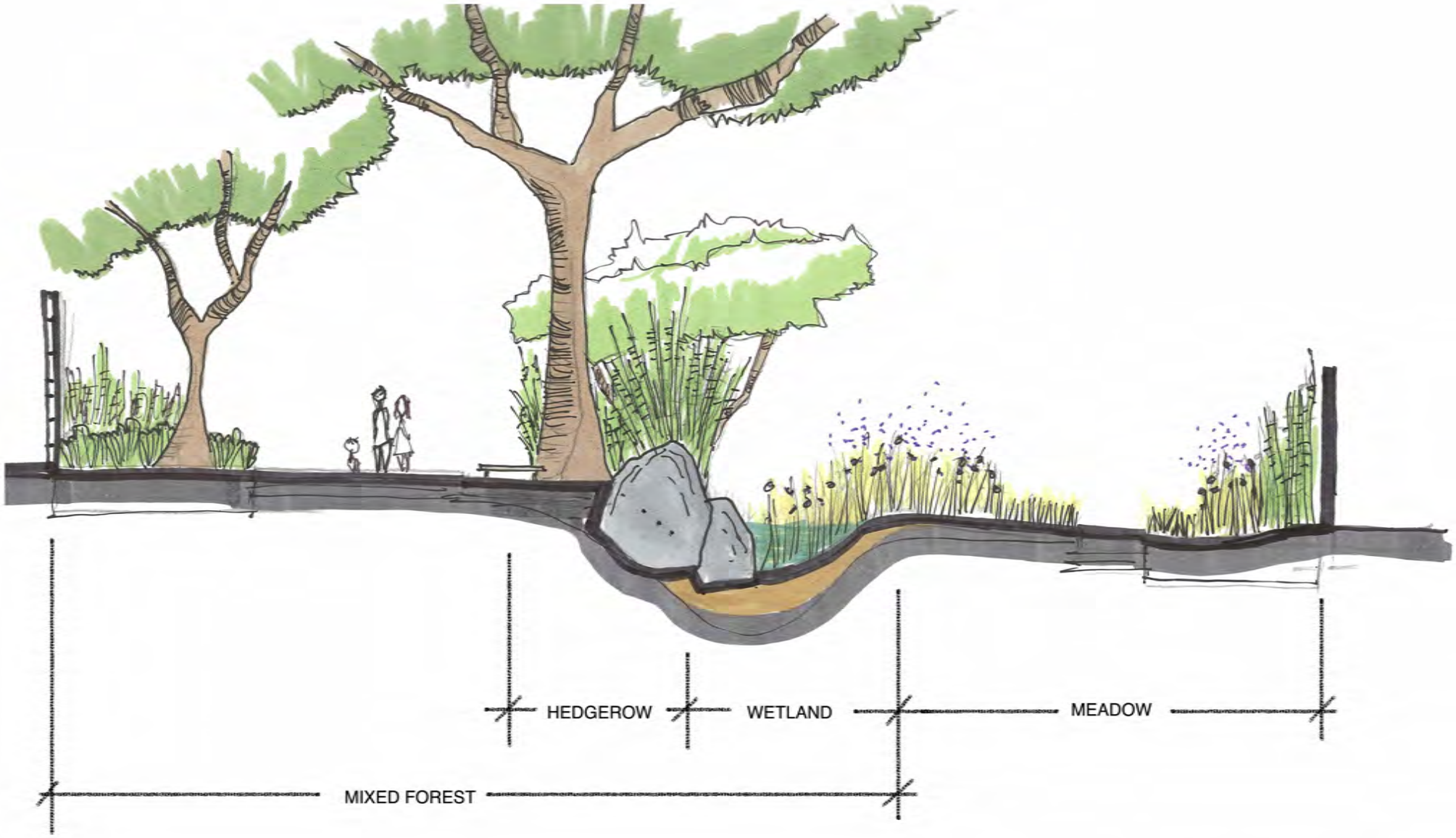
KOUNEVA, ALINA - SUSTAINABILITY STREET MASSING DIAGRAM

LEGEND

- Wood Bench
- Evergreen Groundcover
- GrM - Meadow
- Deciduous Groundcover
- CTD - Cool Tone Drift 3m diameter w/ metal edging
- WTD - Warm Tone Drift 2m diameter w/ metal edging
- BSD - Bare Soil Drift w/ Hollow Stems 1m diameter w/ metal edging
- Local Basalt Boulders
- Wetland Marsh

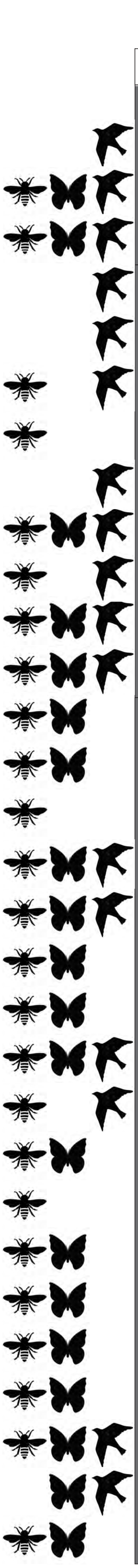


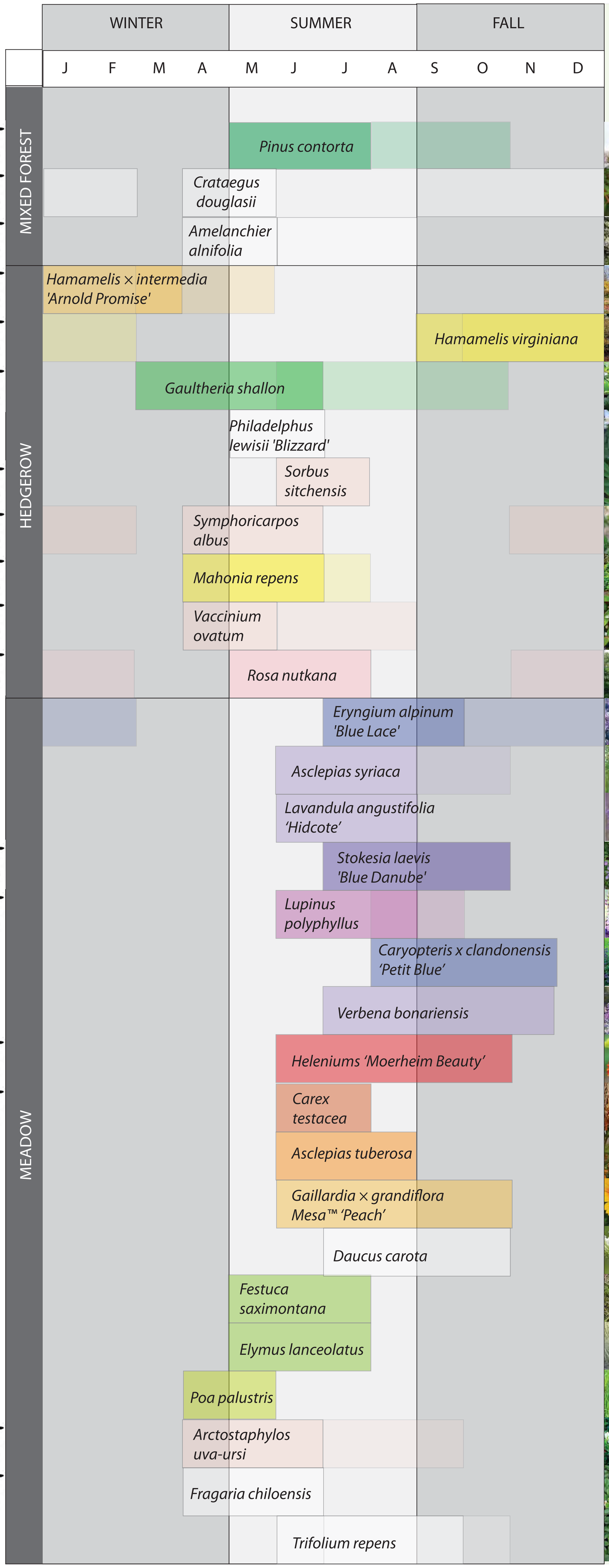
KOUNEVA, ALINA - SUSTAINABILITY STREET SECTION N-S



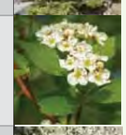
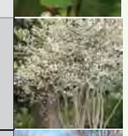
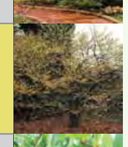
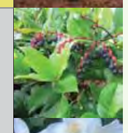
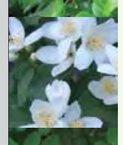
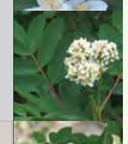
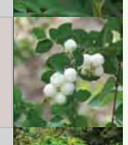
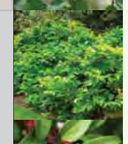
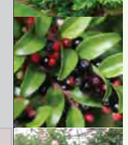
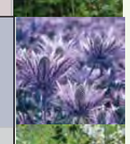
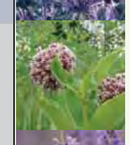
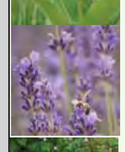
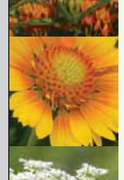
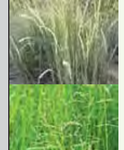
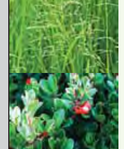
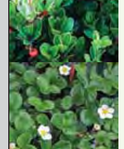
KOUNEVA, ALINA SUSTAINABILITY STREET SECTION E-W

POLLINATOR BLOOM / BERRY / SEED CALENDAR





PLANT SCHEDULE

	SYM.	QTY.	COMMON NAME	SIZE	NOTES
	SP	6	Shore Pine	3m	LU 7’
	BH	3	Black hawthorn	6cm	B&B
	SS	3	Saskatoon Serviceberry	#10	LU 7’
	Ap	4	Witch Hazel 'Arnold Promise'	#3	LU 5’
	Cw	4	Common Witch Hazel	#3	LU 5’
	Sa	197	Salal	10cm	
	Mo	7	Mock Orange	#3	
	Os	10	Oceanspray	#2	
	Sb	8	Snowberry	#2	
	Cm	61	Creeping Mahonia	#2	
	Eh	46	Evergreen Huckleberry	#3	
	Nr	13	Nootka Rose	#3	
	sh	CTD	Sea Holly	#1	seed
	cm	CTD	Common Milkweed	#1	seed
	el	10	English Lavender	#1	FULL
	sa	CTD	Stoke‘s aster	#1	seed
	lu	CTD	Lupine purple	#1	seed
	pb	CTD	Bluebeard ‘Petit Blue’	#1	seed
	tv	CTD	Tall Verbena	#1	seed
	sw	WTD	Sneezeweed	#1	seed
	os	GrM	Orange New Zealand Sedge	#1	seed
	bf	WTD	Butterflyweed	#1	seed
	bl	WTD	Blanket Flower	#1	seed
	qa	WTD	Queen Anne’s Lace	#1	seed
	rf	GrM	Rocky Mountain Fescue	#1	seed
	sw	GrM	Streambank Wheatgrass	#1	seed
	fg	seed	Fowl Meadow Grass	#1	FULL
	kk	90	Kinnikinnic	#1	FULL
	bs	24	Beach Strawberry	#1	FULL
	wc	seed	White Clover	#1	FULL