

Replanting Sustainability Street

Ivy Smith

University of British Columbia

LARC 515

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LARC 515: ASSIGNMENT 4

Ivy Smith

PRECEDENT IMAGE BOARD

Novo Nordisk Nature Park



Re-purposed materials for nesting



PRECEDENT: Novo Nordisk Nature Park

The overall goal for this park was to create a highly biodiverse park while also considering human well-being. Biodiversity and variety is created through different biotopes that are meant to evolve with natural succession and minimal maintenance. What inspired me about this park is that the values are directly aligned with the goals of UBC with Sustainability Street- to create biodiversity within the space while also thinking about maintenance.

Use of dead trees interspersed with newly planted trees to provide a diversity of habitats especially for beetles, caterpillars, mosses and insects. To me, this acts as a visual symbol of the circle of life and celebration of decay. The dead logs offers a powerful experience for the users of the space to come in direct contact with natural processes and the aesthetic feeling of nature. This is something I would like to incorporate into the park in terms of plant material to accentuate and compliment living plant material by adding an additional habitat space as well as a sensory experience.

Re-purposed materials structures

I drew inspiration from the images of re-used and re-purposed material for bee and bird nesting sites. This could be integrated into the programming of UBC studies and could act as a stewarding body for the space. If UBC could re-purpose materials from elsewhere on campus that might otherwise be slated for the landfill to create bird and bee homes, this could benefit the biodiversity of the site as well as fulfill the sustainability goals of the campus.

PLANTS: BIRD BIODIVERSITY CORRIDOR



Cornus sericea



Malus fusca



Myrica pensylvanica



Rhus typhina 'Laciniata'



Hydrangea paniculata



Chaenomeles speciosa



Viburnum acerifolium



Amelanchier x grandiflora
'Autumn Brilliance'



Prunus emarginata var.
mollis



Hamamelis virginiana



Physocarpus opulifolius



Sambucus racemosa



Philadelphus lewisii



Oemleria cerasiformis



Arctostaphylos uva-ursi



Physocarpus capitatus

PLANTS: BIRD BIODIVERSITY CORRIDOR cont'd



Calamagrostis ophitidis



Pennisetum alopecuroides 'Little Bunny'



Juniperus communis



Vaccinium ovatum



Mahonia repens

trees:



Alnus rubra

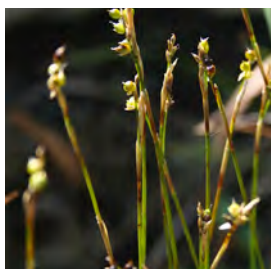


Populus tremuloides



Pinus contorta

VALLEY



Carex alba



Juncus ensifolius



Juncus acuminatus



Carex obnupta



Carex comans 'Frosted Curls'

POLLINATION ALLEY: perennials



Caryopteris x
clandonensis



Lupinus 'The Governor'



Aster x frikartii 'Monch'



Aster subspicatus



Echinops ritro



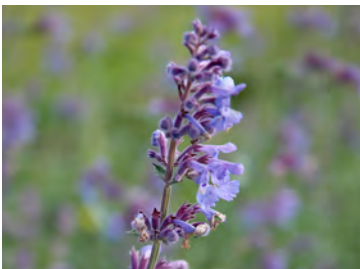
Eryngium planum



Camassia quamash



Gilia capitata



Nepeta x faassenii



Salvia nemorosa



Liatris spicata



Veronica longifolia
'Blauriesin' blue giantess



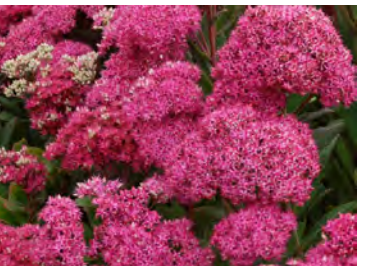
Veronica longifolia
'Rosea'



Allium cernuum



Allium sphaerocephalon



Sedum 'Mr. Goodbud'

POLLINATION ALLEY: perennials cont'd



Agastache 'Desert Sunrise'



Digitalis purpurea



Ceanothus thrysiflorus var. repens



Anemone blanda

POLLINATION ALLEY: grasses



Festuca idahoensis 'Siskiyou Blue'



Calamagrostis ophitidus



Pennisetum alopecuroides 'Little Bunny'



Festuca glauca 'Elijah Blue'



Calamagrostis x acutiflora 'Karl Foerster'

PROGRAM DESCRIPTION

UBC Sustainability Street is a place where sustainable design can be demonstrated. It is meant to be a place that attracts a diversity of people and animals. A place where people can learn and interact with each other as well as their surroundings. This design will integrate these goals into the new design of Sustainability Street with an emphasis on the fact that it is a corridor, shuffling people from building to building and through the space but also acting as a stepping stone, home, or feeding ground for a variety of bird, pollinator and insect species. Creating a rich environment for all beings while also addressing the existing problems of the site.

Existing problems identified upon visiting the site:

- low diversity of plant species
- lacking spaces for people to sit or gather
- erosion issues on slopes of current rain garden feature
- low structural plant diversity (vertical and horizontal)
- lack of sense of place created by planting

The proposed design will feature two habitat types threading through the space: bird biodiversity corridor, pollinator alley. The ribbons flow through the space, mostly from east to west. Each stream has a unique experience that is heavily shaped by the planting scheme creating feeding and nesting for birds and pollinators as well as places for humans to connect, gather and reflect. The bird biodiversity corridor is like a woodland edge and contains plants that have persistent berries, seasonal interest and high vertical height diversity. This section aims to connect the existing trees on site to create a more visually cohesive structure to the site. In addition to the supporting vegetation, a nest box program will be implemented in the site and nest boxes on posts will be scattered along the bird biodiversity corridor.

In the pollinator alley, plants with a variety of flower shapes have been selected to accommodate the various mouth shapes of pollinators. The flower colours are blue, purple and magenta, adding colour to the site and many of the flowers are sculptural when dried for the winter months. Bare soil, important for pollinator species, will be located within visible “rings” embedded in the landscape. They act as a sculptural element in the landscape as well as indicating stewardship and intention of the patches of soil left bare. Nest boxes for pollinators will also be scattered throughout the pollinator alley area to demonstrate stewardship and provide bee nesting habitat in close proximity to nectar habitat. These habitat structures act as a strategy for building community around the place as well as implementing cues-to-care as discussed by Nassauer (1995) in this

PROGRAM DESCRIPTION cont'd

landscape. These act as a symbol of intention and care towards creating habitat and may be a sign to viewer that the landscape looks a certain way because we are fostering wildlife. These signals can act as visual communication cues that depict the non-human intention of the landscape design without tacky (and often under-utilized) interpretive signage.

When visiting the site, the current rain garden appeared to have erosion issues on the steeper slopes as well as seemed to be an area of low diversity: very little diversity in spatial types as well as low vegetation occurrence and variety. The new plan will include planting the rain garden ditch as well as placing some structural elements that addresses erosion issues. Drawing from the Novo Nordisk Nature Park precedent, including some dead logs, within this area would increase biodiversity by providing nesting and feeding habitat from insects, birds, and pollinators as well as contributing to the ambiance of the site by adding sculptural elements as well as a “woody” smell. Along with woody debris, planting along the valley will include a variety of blooming grasses and sedges to give the area more diversity in terms of plant life as well as the aesthetic visual of a flowing river with the texture of the plant material.

To tie together the spaces, the pathways are lined in some areas with a single unifying species to indicate order and intention in the otherwise “messy” planting scheme. By planting a unifying species throughout the site, the feeling of cohesion is created throughout the site. As discussed by Kaplan and Kaplan in “With People in Mind”, a coherent landscape that appears to have order offers a sense of comfort to the viewer. By creating a common plant species throughout the site, planting can be used to help achieve coherency in the landscape and the feeling that the space is one, even though it has various spaces and uses. Grasses will also be used in transition zones to relate the spaces through plant material. The single species that lines the more “messy” planting beds are also a way to show cues-to-care discussed by Nassauer (1995). This shows the intention behind the more messy planting as it is framed with more orderly planting. This is also a technique for requiring little maintenance as only the edges of the pathway would have to be weeded and the remaining areas left to grow more wild.

Mystery is created within the space through the creation of a new pathway that winds from the sidewalk on the eastern edge of the site. This winding pathway and slightly skewed views created by baffles of various heights within the planting scheme, also gives the area a feeling of extent and lengthens the users experience. As discussed by Kaplan (1996) pathways can make smaller spaces seem larger than they are. In this design,

the arcing pathway that hides the views to the end, extends the space through experiential views. Places for gathering are located under the trees, on recycled wood decks and these places are surrounded by baffles and low barriers to allow for some prospect refuge where the viewer feels somewhat protected but also has a view outward.

The seating areas provide a prospect refuge opportunity. As discussed by Robinson (2011) planting can help to achieve prospect refuge theory in the landscape through enclosure on three sides. The raised recycled wood decks surrounded by low barriers and medium height baffles creates a feeling of visual enclosure without feeling unsafe or dark. Views outward are preserved and people can gather with a sense of privacy in these spaces.

MAINTENANCE

Throughout the entire scheme, plants that tolerate low water and maintenance requirements were selected so as to support the desires of UBC grounds maintenance staff and respond to the un-irrigated conditions of the site. General weeding of only the pathway edges should be performed once per year. By concentrating weeding to only the edges, the landscape can look appealing with only minimal maintenance.

Mowing: Mowing of the meadow areas should take place no later than March 15th (to avoid bird breeding season and to allow for some plants to provide sculptural winter interest). Areas should be mowed down to 4-6 inches blade height. See Mowing diagram,

Root barriers: Metal root barriers should be placed in indicated areas (see "ROOT BARRIER" diagram) to prevent suckering. Thinning of suckers in these areas should be performed once per year to prevent new suckers from invading the other plants on site.

Leaf clean-up: One leaf clean up per year should be performed to clear pathways for safety to reduce slippage. This can be done very quickly with a leaf blower and rake.

Irrigation: It is recommended that a short extension be made to the irrigation to reach the planter box on the western wooden deck to provide water to the plants in this area.

Bare soil for pollinators: Bare soil patches at the bottom of the pollinator boxes should be weeded once per

year to expose bare soil.

Pruning: Pruning should be performed once per year or as necessary to remove any hazardous branches from trees or to remove any encroaching vegetation on the pathways. The lower branches on the trees *Pinus contorta* and *Populus tremuloides* should be trimmed to allow for growth in understory and promote an upward growth habit.

REFERENCES

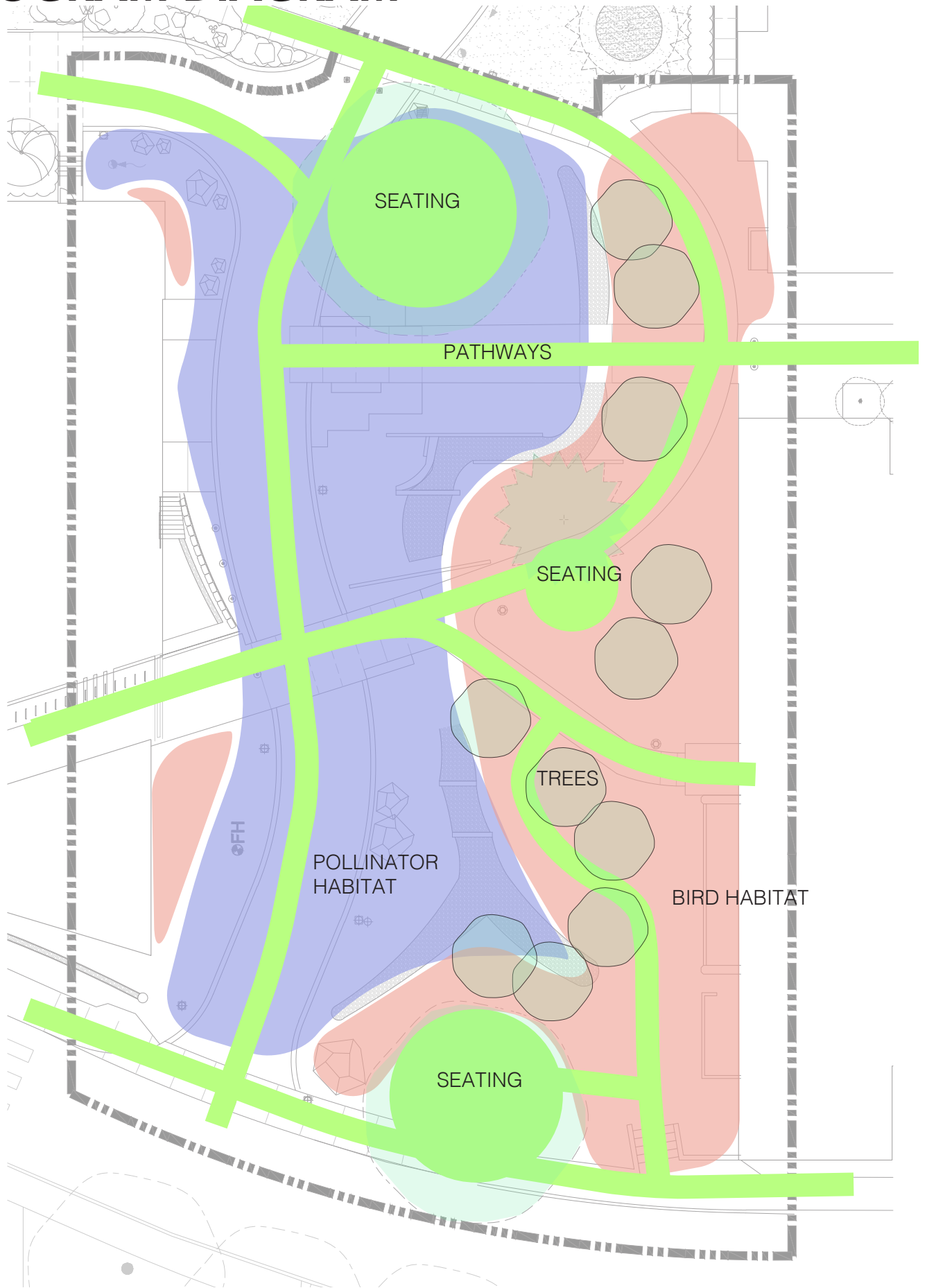
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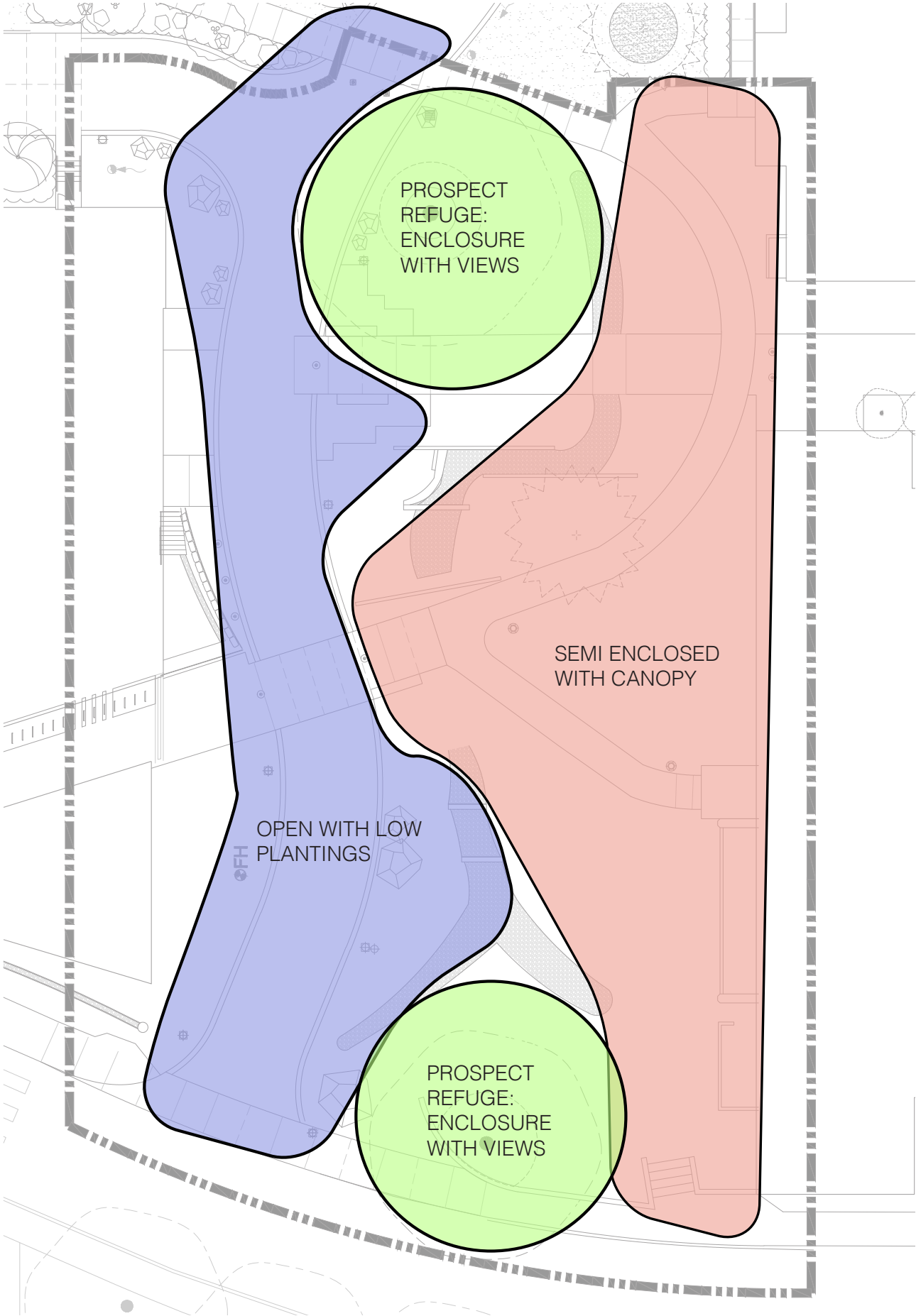
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PROGRAM DIAGRAM



SPATIAL DIAGRAM



MOWING + YEARLY HAND CLIPPING DIAGRAM



PLANT TYPE	CODE	BOTANICAL NAME	SPREAD	POT SIZE	# OF PLANTS	COMMENTS
1	AR	<i>Alnus rubra</i>	up to 9m	0.1m caliper	3	N, P
1	PT	<i>Populus tremuloides</i>	6m	0.1m caliper	7	N, P, SI
2	PCO	<i>Pinus contorta</i>	8-10m	0.1 caliper	1	N
3	AU	<i>Arctostaphylos uva-ursi</i>	1.5m	#1	33	PB
4	AG	<i>Amelanchier x grandiflora</i> 'Autumn Brilliance'	4.5-8m	#5	2	N, PB, P
4	CSP	<i>Chaenomeles speciosa</i>	1.5-3m	#1	6	N, PB, P
4	CS	<i>Cornus sericea</i>	2.5-3.5m	#2	26	PB, SI, N
4	HV	<i>Hamamelis virginiana</i>	4-8m	#5	1	N, SI, P
4	HP	<i>Hydrangea paniculata</i>	3-4.5m	#5	9	SI, P
4	MF	<i>Malus fusca</i>	4-6m	#5	1	P, N, PB
4	MP	<i>Myrica pensylvanica</i>	1.5-3m	#1	9	PB, N, P
4	OC	<i>Oemleria cerasiformis</i>	3.5m	#1	8	P, PB
4	PL	<i>Philadelphus lewisii</i>	3m	#1	5	P
4	PC	<i>Physocarpus capitatus</i>	3m	#1	16	P, SI

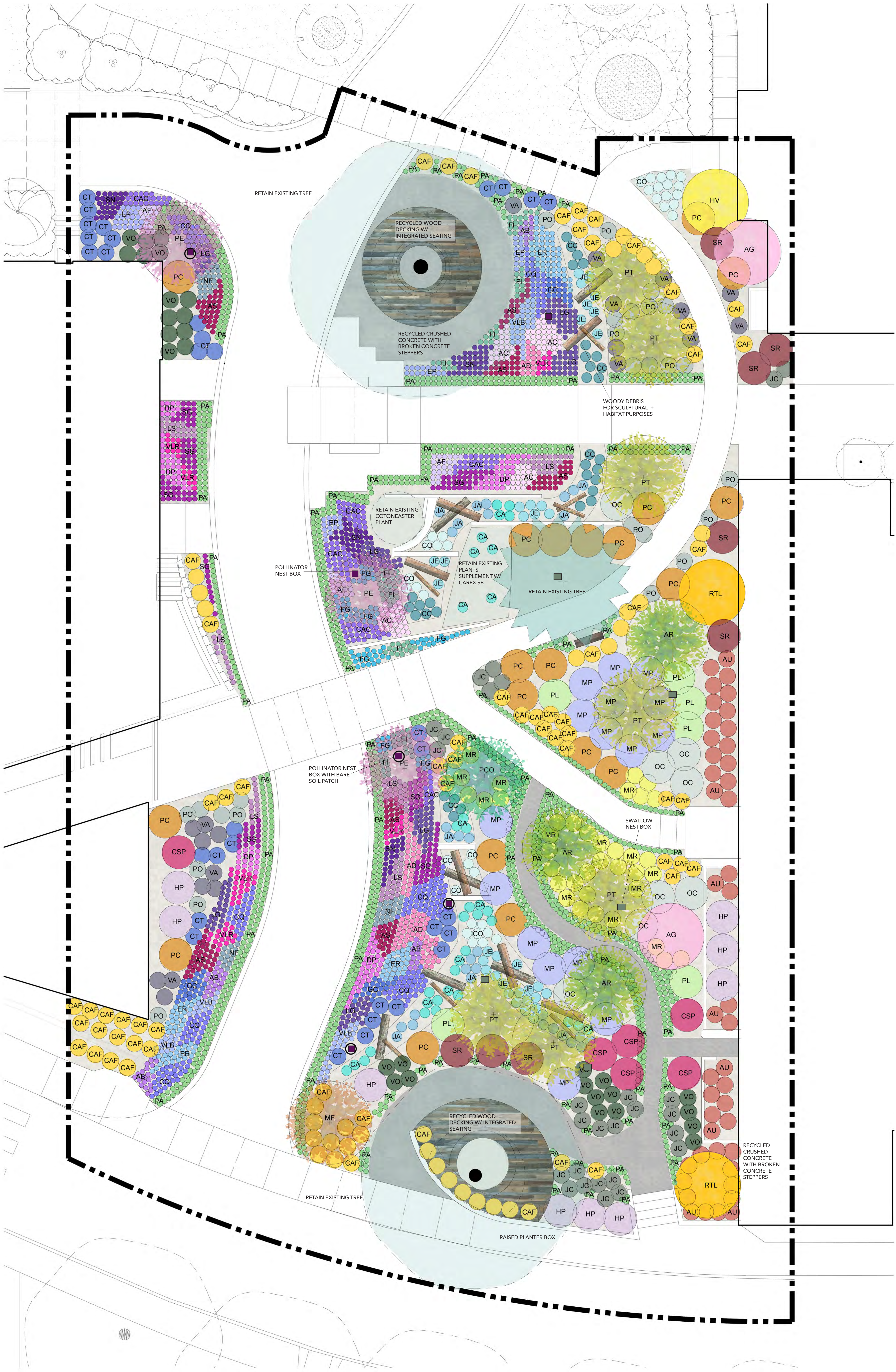
PLANT TYPE	CODE	BOTANICAL NAME	SPREAD	POT SIZE	# OF PLANTS	COMMENTS
4	PO	Physocarpus opulifolius	1-2m	#1	25	P
4	PE	Prunus emarginata var. mollis	5m	#5	3	PB, N
4	RTL	Rhus typhina 'Laciniata'	6-9m	#5	2	SI, N
4	SR	Sambucus racemosa	2m	#5	5	PB, P
4	VA	Viburnum acerifolium	1m	#1	20	PB, P
5	JC	Juniperus communis	1m	#1	27	PB, SI
5	MR	Mahonia repens	1m	#1	84	PB, SI
5	VO	Vaccinium ovatum	1m	#1	15	PB, P Water to establishment
6	CAF	Calamagrostis × acutiflora 'Karl Forester'	1m	#1	76	SI
6	CO	Calamagrostis ophitidus	0.6m	#1	37	SI
6	CA	Carex alba	0.5m	#1	35	
6	CC	Carex comans 'Frosted Curls'	0.5m	#1	33	SI
6	FG	Festuca glauca 'Elijah Blue'	0.3m	#1	100	SI
6	FI	Festuca idahoensis 'Siskiyou Blue'	0.5m	#1	112	

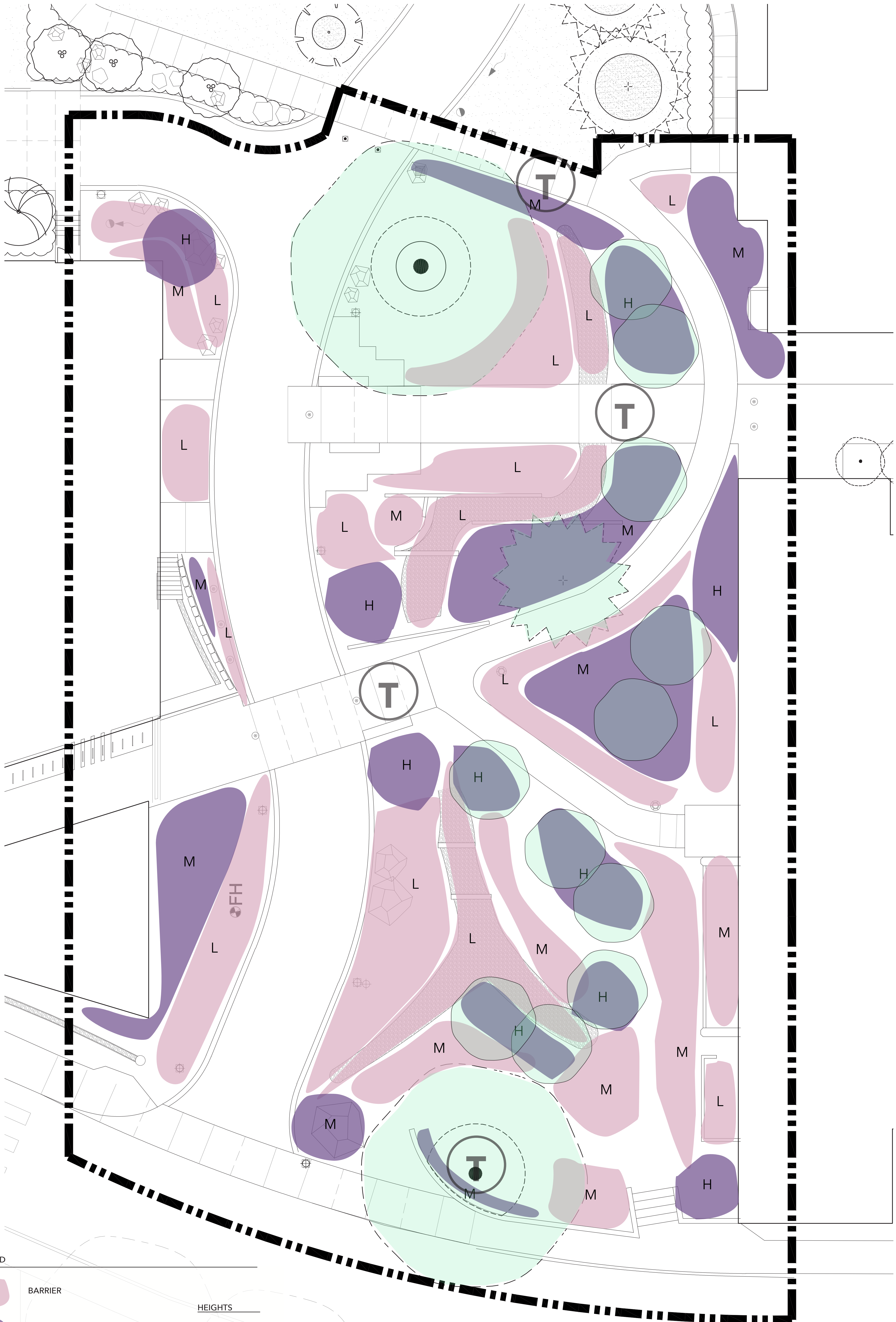
PLANT TYPE	CODE	BOTANICAL NAME	SPREAD	POT SIZE	# OF PLANTS	COMMENTS
6	JA	Juncus acuminatus	0.6m	#1	24	
6	JE	Juncus ensifolius	0.6m	#1	36	
6	PA	Pennisetum alopecuroides 'Little Bunny'	0.3m	#1	625	
7	AD	Agastache 'Desert Sunrise'	0.5m	#1	55	P
7	AC	Allium cernuum	0.3m	#1	75	P
7	AS	Allium sphaerocephalon	0.3m	#1	100	P
7	AB	Anemone blanda	0.3m	#1	40	P
7	AF	Aster × frikartii 'Monch'	0.3m	#1	35	P
7	CQ	Camassia quamash	0.3m	#1	135	P
7	CAC	Caryopteris x clandonensis	1m	#1	82	P
7	CT	Ceanothus thyrsiflorus var. repens	1.5m	#1	29	P
7	DP	Digitalis purpurea	0.6m	#1	83	P
7	ER	Echinops ritro	0.3m	#1	78	P
7	EP	Eryngium planum	0.3m	#1	42	P

PLANT TYPE	CODE	BOTANICAL NAME	SPREAD	POT SIZE	# OF PLANTS	COMMENTS
7	GC	Gilia capitata	0.3m	#1	40	P
7	LS	Liatris spicata	0.3m	#1	50	P
7	LG	Lupinus 'The Governor'	0.3m	#1	89	P
7	NF	Nepeta × faassenii	0.3m	#1	40	P
7	SN	Salvia nemorosa	0.3m	#1	60	P
7	SG	Sedum 'Mr. Goodbud'	0.5m	#1	110	P
7	VLB	Veronica longifolia 'Blauriesin' blue giantess	0.3m	#1	35	P
7	VLR	Veronica longifolia 'Rosea'	0.3m	#1	36	P

	PLANT TYPE
1	Trees Deciduous
2	Trees Coniferous
3	Shrubs Broadleaved Evergreen
4	Shrubs Deciduous
5	Shrubs Coniferous
6	Grasses/Sedges/Rushes
7	Perennials

	ACRONYM DESCRIPTION
N	Nesting habitat for birds
P	Flowering, provides nectar for pollinators
PB	Persistent berries, provide food for birds in winter months
SI	Seasonal interest, attractive in winter months





LEGEND

- BARRIER
- BAFFLE
- TREE
- HEIGHTS**
- L LOW
- M MEDIUM
- H HIGH
- T TRANSITION ZONE

SECTIONS

