UCSF Parnassus Heights Landscape Technical Criteria

1.0 Landscape Materials Introduction

This document is a catalog of the landscape materials, requirements, and plant species discussed and reviewed during the UCSF Parnassus Heights Design Guidelines process. While the Design Guidelines document focuses on the desired vision and character for the UCSF Parnassus Heights campus site, this Landscape Technical Criteria document provides supplementary technical information that UCSF staff may refer to when evaluating design proposals for exterior spaces.

The Design Guidelines provide a sense of cohesion and continuity within the campus site's open spaces by recommending that each landscape space utilizes a complementary family of landscape materials and site elements. The guidelines do not prescribe specific site materials or furnishings, preserving opportunities for designers to work with the landscape palette to develop unique design expressions. However, all selected materials and elements should meet the requirements and performance standards described in this document.

Per the UCSF Parnassus Heights Design Guidelines, landscape materials and elements should also be durable, warm, and should enhance the human experience of the campus. Materials not mentioned in this document may be proposed, but must be reviewed on a project-by-project basis within the UCSF design review process.

The future UCSF Parnassus Heights Campus is envisioned as a warm, welcoming and comfortable landscape for the campus community and the wider San Francisco community.

2.0 Landscape Performance Requirements

To support the ability of UCSF's staff to maintain a welcoming, safe, and sustainable campus environment, all landscape materials and site elements must meet certain performance expectations.

All materials and elements must be durable with a long life cycle in a marine environment, meet UCSF's operations and maintenance needs, and meet or exceed UCSF's sustainability guidelines.

2.1 Exterior Materials

Landscape Materials Performance Requirements

All landscape materials used on the UCSF Parnassus Heights campus site must meet the requirements and performance standards described in this section. These requirements will be enforced through the UCSF design review process. In addition to describing performance standards, this document also describes prohibited materials, as well as restricted applications for the use of certain materials. These restrictions and prohibitions are based on issues related to maintenance or climate that have been documented on site, as well as industry best practices.

General Procurement Requirements

- When specifying a commonly used type of product, the manufacturer must have been in business for more than 10 years and be able to provide replacement parts on individual orders. Exceptions may be made to allow the use of new and innovative products. These must be reviewed within the UCSF design review process.
- Specifiers should provide a minimum of three equal products for bidding.

Pavement Requirements

- All pavements should be durable and easy to clean.
- All unit pavements should have mortar joints able to withstand power washing. Construction and polymeric sand joints are prohibited.
- In general, permeable pavements are not appropriate for this site due to site soils, hydrology, and drainage patterns on the steep and developed campus site. Applications of permeable pavers must be approved on a case-by-case basis. Use alternative methods of stormwater treatment meeting State Water Resources Control Board (SWRCB) standards, such as sand traps or flow-through filtration planters.
- Resin decking used as a pavement or finish decking should be a capped composite product with natural wood or plant fibers and no artificial textures or stamped patterns.
- If used as a pavement or lawn alternative, artificial turf must be lead-safe and must not include BPA or rubber fill.
- The reuse of salvage crushed stone, road base, and concrete is encouraged.
- Where possible, materials should be sourced from within 250 miles of the project site.
- All pavements shall be either 50% shaded by trees, or have an SRI value of 0.28 or higher. Total exposed (not shaded by vegetation or structures) pavement within any project should have an average SRI value of 0.28 or higher, per City of San Francisco requirements.
- All concrete and stone pavements that are porous or have matte/textured finishes are required to use Siloxa-tek 8500 by GhostShield (or equal) masonry sealant to help prevent staining.
- Unless specifically required for an engineering, procurement, or costing reasons, all Type I cement applications should use Type IL and all Type II applications should use Type IP, for the lower embodied carbon.

Pavement Performance Requirements

- Pavements require a minimum Contractor Warranty of 1 year, and an expected lifespan of 20 years.

Pavement Accessibility and Form Requirements

- All pavements should have a minimum static coefficient of friction of 0.7 wet or dry and a dynamic coefficient of friction of over 0.42, and meet or exceed CBC Chapter 11b and the Mayor's Office of Disability requirements.

Cast-in-Place Concrete Pavement

- Fiber reinforced cast-in-place concrete with integral color, topcast 20 finish, and sawcut score joints is recommended as a default for all cast-in-place pavement applications.

Peastone and Loose Pavements

- The use of peastone and other loose pavement materials, such as decomposed granite, is discouraged on steep slopes or in areas adjacent to building entrances, to prevent tracking indoors or displacement by wind. These materials may only be used in flat, planted garden areas not intended as pedestrian spaces, as these materials do not meet accessibility requirements.
- Stabilized decomposed granite may be used in accessible garden areas with less than 2% slopes.

Detectable Warning Pavers

- Detectable warning pavers at curb cuts leading to crosswalks shall be yellow precast concrete unit pavers, approximately FS 33538 of Federal Standard 595C.
- At areas requiring detectable warning surfaces that are not located at curb ramps, such as curbside drop-off zones or loading docks, detectable warning pavers should be gray or other non-yellow pavers that provide a 70% minimum visual contrast with adjacent walking surfaces, either light-on-dark, or dark-on-light. The material used to provide contrast should be an integral part of the surface, complying with ADAAG 705.1.

Street Tree Pit Treatment

- Jamison Tree Grates with vehicular resistant frame by Urban Accessories or equal should be used at Parnassus and Irving Streetscape tree pits.

Landscape Walls

Wall Material Requirements

- It is important that all walls are made of durable material that can weather or develop a superficial patina, such as concrete, stacked stone, solid granite, cast-in-place concrete with integral color, or weathering steel panels. Other materials may be proposed on a case-by-case basis within the UCSF design review process.
- Consider the potential to recycle high quality materials from campus buildings that are demolished.
- Concrete block retaining walls are only allowed in service areas.
- Gabion retaining walls are not allowed due to susceptibility to rust.
- Timber retaining walls are permitted in back-of-house areas, or at the edges of the Mount Sutro Open Space Reserve.
- The only wood acceptable on walls is wood used as seating copes or fencing on top of walls. The wood must be physically separated from any masonry allowing air and water to move around the wood. All exterior wood should be FSC-certified Neotropical hardwood or domestically sourced hardwood meeting the following requirements:
  - Wood should be a Janka Hardness scale of 3500 or higher.
  - Wood should have a rot-resistant lifespan of 20 years or higher without treatment or sealers.
  - All wood should be installed with species-specific oil, with a minimum required reapplication lifespan of 2 years.
- All materials used in walls should be durable and resilient in marine environments.
- All metal should be 316 stainless steel, weathering steel, aluminum, bronze, or other metals that can withstand weathering either through resilience or development of superficial patina. No sub marine-grade metals are suitable for walls, even with protective coatings.
- For rebar reinforced walls, all rebar should be epoxy coated or "green" rebar.
- 50% of metal content should be from recycled material.
- All concrete and stone walls with either porous material or matte/textured finishes are required to use Siloxa-tek 8500 by GhostShield (or equal) masonry sealant to prevent staining.

Wall Performance Requirements

- Walls require a minimum Contractor Warranty of 1 year, and an expected lifespan of 40 years.

Wall Accessibility and Form Requirements

- All cast-in-place concrete walls should have vertical score joints 3 feet on center and 3 millimeter eased corners.
- All metal retaining walls should have vertical joints 3 feet on center.
- All walls below 5 feet should have subtractive skate deterrents (not surface mounted) 3 feet on center.
- All walls intended as seat walls should be 16 to 19 inches tall, with seating linear footage falling within the rules and requirements of benches and site furnishings regarding treatment, accessibility, and back and arm rests.

Stairs and Ramps

Stair Material Requirements

- Natural color cast-in-place concrete is recommended for stairs and ramps. Concrete used for stairs and ramps is required to meet all pavement requirements.
- Wood stairs are not allowed, except rustic trails or stairs within the Mount Sutro Open Space Reserve).
- All materials shall be durable and resilient in marine environments.
- All stair nosing should be color contrasting with a 2-inch wide continuous abrasive strip or detection, such as Balco R-300 or equivalent.
- Stairs should have vertical score joints 3 feet on center and 1/2-inch rounded nosings.
- All metal should be 316 stainless steel, weathering steel, aluminum, bronze, or other metals that can withstand weathering either through resilience or development of superficial patina. No sub marine-grade metals are suitable for stairs, even with protective coatings.
- For rebar reinforced stairs, all rebar should be epoxy coated or "green" rebar.
- All concrete and stone stairs with either porous material or matte/textured finishes are required to use Siloxa-tek 8500 by GhostShield (or equal) masonry sealant.

Stair Performance Requirements

- A minimum Contractor Warranty of 1 year and an expected lifespan of 40 years is required.

Stairs Accessibility and Form Requirements

- Long exterior stairs at steep sites should have a standard 6-inch riser to 12-inch tread ratio.
- Accent stairs, such as those leading up to a formal entrance, where the total vertical climb is less than 5 feet, should have a 5-inch riser to 15-inch tread ratio.
- Stair treads should have a 0.5 to 1% wash.
- Stairs should have plumb risers.
- "Disappearing" stairs are not acceptable as they are a trip hazard. For sloped conditions at stairs, the first riser may vary per building code, no more than 7.5 inches high maximum, and no less than 3 inches minimum. Slope against stair should not exceed 1.9%.

Ramps Material and Performance Requirements

- Ramp walking surface should match pavement requirements.
- Ramp retaining walls should match wall requirements.

Ramps Accessibility and Form Requirements

- Where possible, sloped walkways (4.76% maximum) are preferable to ramps with railings and landings.
- All ramps should conform to CBC Chapter 11b and Mayor's Office of Disability requirements.
- Maximum slope should be 7.69% (1:13) to allow for settlement and construction tolerance.
- Ramps should be designed so that required railings do not interfere with direct access or paths of travel.
- To meet requirement for continuous "cane rail," raised curbs (minimum 4 inches) with handrails top mounted (cored and cast or surface mounted) are recommended.

Handrail and Guardrails

Rails Material Requirements

- All materials should be durable and resilient in marine environments.
- Standard metal should be brushed 316 stainless steel. When project budgets allow, bronze, which is less susceptible to corrosion in a marine environment than stainless steel, is recommended for handrails and guardrails along primary routes – when this material is in keeping with the character of the surrounding landscape and architectural palette. Where bronze is used in the same space as other metals, thought should be given to designing an intentional combination, to avoid a visual cacophony of materials.
- Carlstahl or equal 316 stainless steel cable and tube system is recommended for cable guardrail systems.
- 50% of metal content should be from recycled material.
- Where project budgets allow, integrated continuous lighting is recommended in handrail systems, such as Lumenrail, by Wagner Collaborative Metal Works, or equivalent.

Handrail and Guardrail Performance Requirements

- Furnishings require a minimum Contractor Warranty of 1 year, Manufacturer Warranty of 10 years, and expected lifespan of 20 years.
- All handrails should conform to CBC Chapter 11b and Mayor's Office of Disability requirements.
- To promote visually unified open spaces, all guardrails and handrails within each open space must follow the same design detailing. For example, all rails within Millberry Terrace should match, and all rails within Saunders Court and the Promenade should match.
- Bicycle parking should be located strategically to provide people with alternatives to locking bicycles against railings, where they may obstruct paths of travel.

2.2 Exterior Furnishings

Proposed site furnishing products or custom furniture designs will be evaluated within the UCSF design review process against the technical requirements in this section.

When developing custom furnishings and structures, designers must identify for the design review process how the furnishings will be documented and engineered. To provide clarity for review, UCSF uses the following working definitions to clarify the designers' role in terms of documentation ownership:

Typical Design

If a consultant is taking full responsibility for design and engineering within AIA definitions of typical standards of care, this is considered to be typical design.

Delegated Design

Custom furnishings or structures to be designed by the consultant to a performance level, to be later designed and engineered in detail by the contractor or specialty sub-contractors as appropriate, are referred to as delegated design. The design concept and performance requirements for delegated design elements are provided by the consultant in the construction documents.

Design Assist

Scope items designed by the consultant to a construction document level, but with the advice and input of a manufacturer who would be included as the preferred manufacturer for said product, are noted as design assist.

Material Requirements

- All metal should be 316 stainless steel, weathering steel, aluminum, bronze, or other metals that can withstand weathering either through resilience or development of a superficial patina.
- Non-resilient metals, including galvanized steel and mild steel, are required to have a high-performance protective coating.
- 50% of metal content should be from recycled material.
- Acceptable high-performance protective coatings include fluoropolymer powders, PVDF coatings, 70% kynar 500, or others that meet or exceed American Architectural Manufacturers Association (AAMA) 2605.
- All exterior wood should be FSC-certified Neotropical hardwood or domestically sourced hardwood meeting the following requirements:
  - Wood should be a Janka Hardness scale of 3500 or higher.
  - Wood should have a rot-resistant lifespan of 20 years or higher without treatment or sealers.
  - All wood should be installed with species-specific oil, with a required reapplication lifespan of 2 years.

Performance Requirements

- Furnishings require a minimum Contractor Warranty of 1 year, a Manufacturer Warranty of 10 years, and an expected lifespan of 20 years.
- Furnishings should be Red List compliant per the Living Future Institute where possible.

Accessibility and Form Requirements

- All furnishings should meet current ADAAG, CBC Chapter 11B, and Mayor's Office of Disability requirements.
- 50% or more of the linear footage of benches should have backs.
- 50% or more of the linear footage of benches should be within 3 feet of an armrest.
- For every 20 linear feet of seating provided, designs should accommodate 1 companion seating space. Each destination area should include at least 1 companion space.
- For any provided furnishing amenity, a minimum of 30% of such amenity should be universally accessible (e.g., if community garden planters are provided, a minimum of 30% must be accessible, with the top of planters 36 inches above the ground and with space for wheelchair access).

Furnishing Zones

To ensure that campus spaces are experienced as unified and functional parts of the UCSF public realm, designers should select a family of aesthetically compatible site furnishings for each open space. Designers should consider the following design criteria in selecting site furnishings for these categories of open spaces:

Streetscapes Furnishings

The streetscape palette of site furnishings must comply with San Francisco Publics Works requirements, and should be durable enough to support heavy public use.

Furnishings for Private Open Spaces

The majority of private open spaces on campus are roof gardens. Site furnishings for roof gardens should be selected according to the following criteria:

- Furnishings should be comfortable, durable, and relate to the adjacent building's program use.
- Site furnishings on roof gardens are required to be attached to roof pavements, with the exception of movable chairs and tables.

Furnishings for Saunders Court and the Promenade

Site furnishings within Saunders Court and the Promenade should meet the following character requirements:

- More than one family of furnishings may be used, but all furnishings within these areas should be visually compatible.
- Furnishings should be located in areas with the best available solar exposure, and sheltered from the wind.
- Furnishings must be comfortable to occupy.
- Warm materials, including wood and colored site furniture, are encouraged.
- Furnishings must be arranged to provide spaces for both group activity and individual respite.
- Furniture that supports outdoor collaboration, such as community tables with benches, should be considered in some areas.
- Movable furnishings are encouraged in areas managed by adjacent retail venues.

Furnishings for Millberry Terrace

Site furnishings within Millberry Terrace should meet the following character requirements:

- More than one family of furnishings may be used, but all furnishings within this open space should be visually compatible.
- Consider developing shelters with integrated wind screens framing outdoor rooms populated with lounge furnishings and work tables to provide comfortable microclimates within the larger space.
- Furnishings must be comfortable to occupy.
- Warm materials are encouraged, including wood and colored site furniture.
- Furnishings should be arranged to provide spaces for both group activity and individual respite.
- Movable furnishings may be used within outdoor areas managed by adjacent venues or tenant operators.
- Furnishings in non-retail areas should be extremely durable, and able to withstand heavy public use.

Furnishings for the Hospital Podium Terrace

Site furnishings on the hospital podium terrace should meet the following character requirements:

- Furnishings should be comfortable to occupy. Soft seating may be included in areas with adequate operational support. Warm materials are encouraged, including wood and colored site furniture.
- Movable furnishings may be used within outdoor areas managed by adjacent venues or tenant operators.

2.3 Exterior Lighting

The lighting design guidelines provide performance requirements for future landscape projects on the Parnassus Heights campus site. These guidelines support a safe, well-lit public realm, while also meeting key sustainability criteria for energy savings and International Dark-Sky Association (IDA) compliance.

Lighting should be designed to promote the safety of UCSF staff, faculty, students, and members of the community on campus at night. Light fixtures that reinforce a human-scaled, pedestrian public realm are preferred.

To be welcoming and to provide high fidelity visual clarity for people with partial visual impairment, the guidelines require warm color temperatures and high color rendering fixtures. Light-level recommendations are derived from both City standards and best practices for public spaces and building and critical service entrances.

Technical Requirements

All lighting on the UCSF Parnassus Heights campus site must meet the following technical requirements:

Code Requirements

- Lighting should comply with California CEC Title 24 requirements and ASHRAE 90.
- Lighting design should comply with IDA's standards and/or IES2011 documented BUG (Backlight, Uplight, and Glare) rating.
- Lighting design should comply with project Well, LEED, or Living Building Challenge metrics on a project-by-project basis.
- Non-code required lighting should use renewable energy sources where possible.
- Uplighting is not allowed to prevent light pollution.
- Designers should consider the use of dimmers activated by motion sensors where appropriate.

Material Requirements

- All materials should be durable and resilient in marine environments.
- Aluminum fixtures should be A360 Alloy, copper free (<0.3%). Fasteners should be stainless steel, shouldered, and mechanically captive.
- All pole or post metal to be 316 stainless steel, weathering steel, aluminum, bronze, or other metals that can withstand weathering either through resilience or development of superficial patina. No sub marine-grade metals are suitable, even with protective coatings.

Performance Requirements

- All fixtures should be LED and/or ENERGY STAR qualified.
- Light fixtures should have a warranty of 5 years, and a minimum expected lifespan of 20 years.

Accessibility and Form Requirements

- Fixtures must comply with 2014 ADAAG: "any wall lights mounted between 27 inches and 80 inches vertically can extend no further than 4 inches from the wall, thereby ensuring

maximum clearance in hallways and walkways."
- Light fixtures and drivers should be warrantied for 5 years minimum, and minimum L70/B50 after 50,000 hours following IES TM-21.
- Color rendering should be 2 SDCM at CRI 80+.
- All luminaires should include replaceable lighting boards and drivers. All poles should provide access to electrical wiring.
- Vehicular pavements and roadways light fixture spacing should be based on light level and uniformity requirements according to the American National Standard Practice for Roadway Lighting by the Illuminating Engineering Society of North America (IESNA). Reference ANSI/IES RP8-18.
- Lighting at crosswalks should follow IESNA intersection guidelines to safely illuminate pedestrians in the crosswalk. Crosswalk lighting should provide color contrast from standard roadway lighting.
- For pedestrian pavements in the following locations, the minimum average illumination levels (in footcandles) are required. These recommendations are based on San Francisco Public Utilities Commission (SFPUC), Better Streets guidelines, and IESNA standards.
  - Hospital entrances and emergency pedestrian access routes – 3.4 fc.
  - Streetscape sidewalks – 1.8 fc.
  - Secondary pedestrian routes (the Promenade, Saunders Court, and Millberry Terrace) – 1 fc.
  - Tertiary pedestrian zones (roof gardens, courtyards) – 0.4 fc.
  - If any lighting codes change between the time of these design guidelines and the delivery of a project, the higher light level must be met.
- Pedestrian light fixture color temperature should be 2700k.
- Crosswalk color temperature should be 4000k.

Lighting Character Zones

Campus lighting is broken down into the following character zones: streetscapes, destination open spaces, and private and semi-private open spaces.

Streetscapes

Light fixtures for streetscapes should be selected to meet both San Francisco Public Works and UCSF operations standards and requirements.

Destination Open Spaces

Light fixtures in public open spaces should be selected for performance and to reinforce a human-scale, pedestrian-friendly campus environment. Consider accent lighting, such as catenary lighting, for a welcoming character in public program spaces in the evening.

Private and Semi-Private Open Spaces (Roof Gardens and Courtyards)

Lighting within private and semi-private open spaces should support the intended programming of that open space. In general, small-scale, indirect lighting is recommended for garden spaces.

3.0 Plant Material

3.1 Horticultural Microclimates

The microclimate map at right shows 9 microclimate zones on the UCSF Parnassus Heights campus site based on steepness of slope and average direct sunlight received per day during the growing season. Areas colored 'full sun' receive an average minimum of 6 hours of sun, areas colored 'part sun' receive between 3 to 6 hours, and areas colored 'full shade' receive less than 3 hours. Slopes less than 1:12 are considered to be flat from a planting perspective. Slopes between 1:3 and 1:12 are considered to be gentle slopes that do not require stabilization. Slopes steeper than 1:3 require stabilization planting to prevent erosion.

Planting recommendations correlate with horticultural microclimates on the campus site.

Figure ML-1: Horticultural microclimate zones on the campus site

3.2 Existing Trees

Preservation Priority for Existing Trees

While the lists of recommended plants on the following pages include carefully selected native and adapted species, a broader range of tree species exists today on the UCSF Parnassus Heights campus site. The following list is based on a 2019 Bartlett Arborscope map.

To aid in decisions that may arise during construction projects, each of these species is rated for priority for preservation according to whether the tree is native, adapted, non-native, invasive, or problematic. However, other factors must also be considered when making the decision to remove a tree, such as the absence of other mature trees in the immediate area.

In general, the design guidelines recommend maintaining existing mature trees, unless a new landscape may be implemented that will confer greater benefits to the campus site and community. Mature trees of most species provide more ecosystem services per individual tree than young trees, in terms of habitat provision (including shelter, forage, and masting), as well as in terms of stormwater mitigation, carbon sequestration, and shade provision.

Legend

3	High Priority: quality native species
2	Moderate Priority: quality species
1	Low Priority: non-invasive, non-native, but adapted
0	Recommended for Phasing Out: invasive or high water use non-native

Scientific Name	Common Name	Priority for Preservation
Acacia melanoxylon	Acacia-Blackwood	0
Betula nigra	Birch-River	0
Pittosporum undulatum	Box-Victorian	0
Aesculus californica	Buckeye-California	3
Cupaniopsis anacardiodes	Carrotwood	0
Cedrus deodara	Cedar-Deodar	1
Prunus serrulata	Cherry-Flowering	0
Metrosideros excelsa	Christmas Tree-New Zealand	1
Malus floribunda	Crabapple-Japanese Flowering	0
Cupressus macrocarpa	Cypress-Monterey	3
Ulmus thomasii	Elm-Rock	1
Pseudotsuga menziesii	Fir-Douglas	0
Eucalyptus globulus	Gum-Blue	1
Corymbia ficifolia	Gum-Red Flowering	1
Eucalyptus polyanthemos	Gum-Silver Dollar	1
Eucalyptus conferruminata	Gum-Spider	1
Dodonaea viscosa	Hopseed Bush	0
Juniperus chinensis	Juniper-Chinese	0
Magnolia x soulangiana	Magnolia-Saucer	2
Magnolia grandiflora	Magnolia-Southern	2
Ginkgo biloba	Maidenhair Tree	2
Acer palmatum	Maple-Japanese	1
Michelia doltsopa	Michelia	1
Quercus agrifolia	Oak-Coast Live	3
Olea europaea	Olive	2
Pyrus calleryana	Pear-Callery	0
Pyrus kawakamii	Pear-Evergreen	1
Pinus canariensis	Pine-Canary Island	1
Pinus pinea	Pine-Italian Stone	1
Pinus radiata	Pine-Monterey	3
Pittosporum tobira	Pittosporum-Japanese	1
Prunus cerasifera	Plum-Purple Leaf	1
Populus nigra	Poplar-Black	1
Ligustrum lucidum	Privet-Glossy	0
Thuja plicata	Redcedar-Western	0
Sequoia sempervirens	Redwood-Coast	2
Arbutus unedo	Strawberry Tree	1
Liquidambar styraciflua	Sweetgum	1
Liquidambar formosana	Sweetgum-Formosan	1
Pittosporum tenuifolium	Tawhiwhi	1
Melaleuca quinquenervia	Tree-Punk	1
Salix babylonica	Willow-Weeping	0
Taxus sp	Yew	1

3.3 List of Recommended Plants

Trees

The following native and adapted tree species are preapproved for use on the UCSF Parnassus Heights campus site. Invasive or problematic species are not included. The plant list includes reference information about each species to help designers determine whether it is suitable for a particular site. Noted attributes include the following:

- Suitability for various campus microclimates.
- Water use level per WUCOLS (Water Use Classification of Landscape Species).

Note: It is recommended that only species with the same water use level are used within the same irrigation Hydrozone.

- Ecological service provision.
- Slope stabilization.
- Suitability as a street tree (these species will thrive in tree pit locations with minimum root damage to sidewalks, and with minimal leaf litter or fruit drop).
- Toxicity, as defined by the University of California list of Safe and Poisonous Garden Plants and California Poison Control.
- Significant flower or fruit litter.
- Sensory qualities for use in healing gardens.

Parnassus and Irving Avenues each should have a unique street tree that defines and unifies those streetscapes. On Parnassus, additional species are encouraged for forecourts or bosques offset from the formal street trees. On Fourth Avenue, the streetscape may be designed to either be a single street tree species or multiple species with similar form and habit, to be reviewed and determined through that particular design process.

Legend	
Landscape typology	Description
1	1.5h, slope > 1:3
2	1.5h, 1:12 < slope < 1:3
3	1.5h, slope < 1:12
4	3h, x> 1:3
5	3h, 1:12 < slope < 1:3
6	3h, slope < 1:12
7	6h, slope > 1:3
8	6h, 1:12 < slope < 1:3
9	6h, slope < 1:12

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use			Stabilizing	Ecological Services	Landscape typology									Street Trees	Wind Resistant	Considerations	Sensory Interest
		ft										1	2	3	4	5	6	7	8	9				
Acer circinatum	Vine Maple	4-20	Native		◐	●							x	x		x	x						Fragile	
Acer negundo	Box Elder	35-66	Native	✺	◐												x			x				
Aesculus californica	California buckeye	13-40	Native	✺	◐												x			x			Flower and fruit litter, brown summers, minor ingestion toxicity	
Agonis flexuosa	Peppermint Willow	25-35	Adapted	✺	◐					+						x	x		x	x				⚽
Alnus rubra	Red Alder	50-98	Native		◐	●				+						x	x		x				Sap can cause dermatitis	
Arbutus unedo	Strawberry Tree	15-25	Adapted	✺	◐											x	x		x	x				
Arctostaphylos sp.	Manzanita Sp.	Varies	Native	✺	◐					+					x	x	x	x	x	x				
Banksia integrifolia	Coast Banksia	20-45	Adapted	✺	◐												x			x		+	Significant cone drop	
Brachychiton acerifolius	Flame bottletree	30-45	Adapted	✺																x			Significant flower and fruit litter, sap can cause dermatitis	
Ceanothus arboreus 'Cliff Schmidt'	California lilac tree	15-20	Native	✺	◐					+					x	x	x	x	x	x		+		⚽
Ceanothus sp. 'Ray Hartman'	California lilac tree	15-20	Native	✺	◐					+					x	x	x	x	x	x		+		⚽
Ceanothus thyrsiflorus	California lilac	2-30	Native		◐					+					x	x	x	x	x			+		⚽
Cedrus deodara	Cedar-Deodar	50-150	Adapted	✺	◐											x	x		x	x		+		⚽
Corymbia ficifolia	Red flowering gum	18-45	Adapted	✺	◐												x			x		+	Significant flower and fruit litter	
Cupressus abramsiana	Santa Cruz Cypress	19.7 - 49	Native	✺						+							x	x	x	x				
Cupressus macrocarpa	Cypress-Monterey	50-150	Native	✺	◐										x	x	x	x	x	x		+	Significant root growth, min. 700 CF soil per tree	⚽
Elaeocarpus decipiens	Japanese blueberry	25-40	Adapted	✺	◐	●								x			x			x	+			
Garrya elliptica	Silk tassel	6-16	Native	✺	◐												x			x				🔊 ✋
Ginkgo biloba	Maidenhair Tree	30-60	Adapted	✺	◐											x	x		x	x				
Heteromeles arbutifolia	Toyon, Christmas berry	8-15	Native	✺	◐					+					x	x	x	x	x	x	+	+	Fruit drop, sap can cause dermatitis	⚽

✺ Full Sun, ◐ Part Sun, ● Full Shade, Low Water Use, Medium Water Use, High Water Use

Birds, Hummingbirds, Butterflies, Pollinators, Moths

Sound, Tactile, Fragrant

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use			Stabilizing	Ecological Services	Landscape typology								Street Trees	Wind Resistant	Considerations	Sensory Interest
Hymenosporum flavum	Sweetshade	25-40	Adapted	●	◐		●									x			x			Flower drop	●
Lagunaria patersonii	Primrose tree	20-30	Adapted	●					●										x	+	+	Flower drop	●
Liquidambar styraciflua	Sweetgum	30-60	Adapted	●	◐				●							x			x				●
Lophostemon confertus	Brisbane box	30-45	Adapted	●			●												x	+	+		
Magnolia grandiflora	Magnolia-Southern	20-40	Adapted	●	◐				●							x			x		+		
Metrosideros collina	Ohi'a lehua	12-18	Adapted	●	◐				●							x			x	+	+		
Metrosideros excelsa	New Zealand Christmas tree	30-35	Adapted	●	◐		●									x			x	+	+		
Olea europaea 'Swan Hill'	Fruitless olive	15-25	Adapted	●			●												x	+			
Pinus canariensis	Pine-Canary Island	20-40	Adapted	●			●												x		+		●
Pinus muricata	Bull Pine	35-90	Native	●	◐		●										x	x	x		+		
Pinus radiata	Pine-Monterey	30-50	Native	●	◐		●									x			x		+		●
Pittosporum tenuifolium	Tawhiwhi	6-12	Adapted	●	◐	●	●						x	x		x	x		x	x			
Pittosporum tobira	Pittosporum-Japanese	10-15	Adapted	●	◐	●	●						x	x		x	x		x	x			
Prunus cerasifera	Cherry plum	15-25	Native	●	◐				●							x			x			Significant fruit and flower drop	
Prunus ilicifolia	Holly-leafed cherry	30-50	Native	●	◐		●			+						x	x		x	x		Significant fruit and flower drop	
Prunus lyonii	Catalina cherry	20-40	Native	●	◐		●			+						x	x		x	x	+	Significant fruit and flower drop	
Pseudotsuga menziesii	Fir-Douglas	50-150	Adapted	●	◐											x	x		x	x			
Quercus agrifolia	Coast live oak	25-82	Native	●	◐		●			+						x	x		x	x	+	Acorn drop, requires min. 500 CF soil per tree	
Quercus chrysolepis	Canyon live oak	30-90	Native	●	◐	●	●			+		x	x	x	x	x	x	x	x	x		Acorn drop	
Rhamnus californica	California coffeeberry	6-15	Native	●	◐		●			+					x	x	x		x	x			
Salix laevigata	Red Willow	30-50	Adapted	●	◐				●								x		x				●
Salix lasiolepis	Arroyo Willow	7-35	Native	●					●										x				●
Sambucus nigra ssp. caerulea	Blue elderberry	20-30	Native	●	◐	●	●						x	x		x	x		x	x			
Sequoia sempervirens	Redwood-Coast	50-150	Native	●	◐												x		x				
Trachycarpus fortunei	Chinese windmill palm	20-30	Adapted	●	◐				●								x		x				
Tristaniopsis laurina	Water Gum	16-50	Adapted	●					●								x		x		+		
Umbellularia californica	California Laurel	6-80	Native	●	◐		●																

● Full Sun, ◐ Part Sun, ● Full Shade, ● Low Water Use, ● Medium Water Use, ● High Water Use

Birds, Hummingbirds, Butterflies, Pollinators, Moths

Sound, Tactile, Fragrant

Shrubs

The following list includes the preapproved shrub species to be used on the Parnassus Heights campus site. The list includes a wide range of woody vascular plant species, selected according to the same criteria as the tree list.

To promote a sense of safety and security within the public ream, shrub species should be located to preserve open views between three feet above the ground and six feet above the ground. Larger or denser shrub species are recommended for screening equipment, slope stabilization, or border plantings.

Legend	
Landscape typology	Description
1	1.5h, slope > 1:3
2	1.5h, 1:12 < slope < 1:3
3	1.5h, slope < 1:12
4	3h, x> 1:3
5	3h, 1:12 < slope < 1:3
6	3h, slope < 1:12
7	6h, slope > 1:3
8	6h, 1:12 < slope < 1:3
9	6h, slope < 1:12

Scientific Name	Common Name	Height	Native/ Adapted	Light			Water Use			Stabilizing	Ecological Services	Landscape typology									Bloom Color	Sensory Interest
		ft										1	2	3	4	5	6	7	8	9		
Abutilon sp.	Flowering Maple	6	Adapted		◐	●	💧	💧					x	x		x	x					
Adenostoma fasciculatum	Chamise	13	Native	✺						+									x	x		⚽
Amelanchier utahensis	Service Berry	10-16.4	Native	✺	◐		💧			+						x	x		x	x		
Artemisia californica	California Sagebrush	1-8	Native	✺			💧			+								x	x	x		⚽
Artemisia pycnocephala	Dune Sagewort	1.6	Native	✺			💧			+								x	x	x		⚽
Artemisia tridentata	Big Sagebrush	3-15	Native	✺			💧			+								x	x	x		⚽
Baccharis pilularis	Coyote Bush	1.5-10	Native	✺	◐		💧			+						x	x	x	x	x		
Banksia sp.	Banksia	Varies	Adapted	✺			💧											x		x		
Berberis nevinii	Nevin's Barberry	3.2-7	Native	✺	◐		💧											x		x		
Berberis pinnata	California Barberry	26	Native	✺	◐													x		x		
Brunfelsia pauciflora	Yesterday, today and tomorrow	6	Adapted		◐		💧										x	x				
Callistemon sp.	Bottlebrush	Varies	Adapted	✺															x	x		
Calycanthus occidentalis	Spice Bush	3-13	Native	✺	◐		💧	💧	💧									x		x		⚽
Carpenteria californica	Bush Anemone	5-12	Native	✺	◐		💧	💧	💧	+							x	x	x	x		
Ceanothus sp. 'Concha'	Concha Ceanothus	3-6	Native	✺	◐													x		x		⚽
Ceanothus gloriosus	Point Reyes Ceanothus	7	Native		◐					+						x	x	x				⚽
Ceanothus thyrsiflorus	Blue blossom		Native		◐		💧			+						x	x	x				⚽
Ceanothus thyrsiflorus	Blue blossom	2-3	Native	✺	◐		💧			+						x	x	x	x	x		⚽
Condea emoryi	Desert Lavender	6-12	Native	✺			💧											x	x	x		⚽
Cornus nuttallii	Pacific Dogwood	12-65	Native		◐	●	💧							x				x				
Cornus sericea	Creek Dogwood	4-13	Native	✺	◐	●		💧	💧					x				x		x		
Correa reflexa	Australian Fuchsia	Varies	Adapted	✺				💧									x	x	x	x		

✺ Full Sun, ◐ Part Sun, ● Full Shade, 💧 Low Water Use, 💧 Medium Water Use, 💧 High Water Use

Birds, Hummingbirds, Butterflies, Pollinators, Moths

Sound, Tactile, ⚽ Fragrant

Scientific Name	Common Name	Height	Native/ Adapted	Light			Water Use		
Corylus cornuta	California Hazel	18	Native		◐				
Cyathea cooperi	Austrailian Tree Fern	Varies	Adapted		◐	●	💧	💧	
Dicksonia antarctica	New Zealand Tree Fern	Varies	Adapted		◐	●	💧	💧	
Dirca occidentalis	Western Leatherwood		Native		◐				
Echium candicans	Pride of Madeira	5-6	Adapted	✺			💧	💧	
Eriodictyon californicum	California Yerba Santa	3.3-9.8	Native	✺	◐		💧		
Eriogonum cinereum	Ashyleaf Buckwheat	2-4	Native	✺			💧		
Eriogonum fasciculatum	California Buckwheat	1-6.6	Native	✺			💧		
Eriogonum giganteum	St. Catherine's Lace	1.6-5	Native	✺			💧		
Fremontodendron californicum	Flannel Bush	6-20	Native	✺			💧		
Fuchsia magellanica	Hardy Fuchsia	3	Adapted		◐				
Garrya elliptica	James Roof Silktassel	8-12	Native	✺	◐		💧	💧	
Helianthemum scoparium	Common Sun Rose	1.5	Native	✺			💧		
Hypericum calycinum	St. John's wort	1-1.5	Native	✺	◐			💧	
Hyptis emoryi	Desert Lavender	6-12	Native	✺			💧		
Justicia californica	Chuparosa	1.7-4	Native	✺			💧		
Lepechinia calycina	White Pitcher Sage	8	Native	✺	◐		💧		
Lithocarpus densiflorus	Tan Oak	98	Native		◐	●			
Lonicera hispidula	Hairy Honeysuckle	4	Native		◐		💧		
Lonicera involucrata var. ledebourii	Twinberry Honeysuckle	10	Native		◐			💧	💧
Lupinus albifrons	Silver Lupine	3.2-5	Native	✺			💧		
Lupinus arboreus	Coastal Bush Lupine	3.5-7	Native	✺			💧	💧	💧
Lupinus bicolor	Miniature Lupine	0.26-1.3	Native	✺			💧		
Lupinus chamissonis	Dune Bush Lupine	4.9-7	Native	✺			💧		
Mimulus aurantiacus	Bush Monkey Flower	3.9-5	Native	✺	◐		💧		
Myrica californica	California Wax Myrtle	6-33	Native	✺	◐		💧		
Oemleria cerasiformis	Indian Plum	4.9-20	Native		◐		💧		
Physocarpus capitatus	Pacific Ninebark	3.3-8.2	Native		◐	●	💧	💧	💧
Protea sp.	Protea	Varies	Adapted	✺	◐				

Stabilizing	Ecological Services	Landscape typology								Bloom Color	Sensory Interest
	🦋					x					🔊 ✋
			x	x		x	x				
			x	x		x	x				
	🦋						x				⚽
	🐦 🐦‍⬛ 🦋									x	
	🦋 🐝						x			x	⚽
+	🐦‍⬛ 🦋 🐝							x	x	x	
+	🐦‍⬛ 🦋 🐝							x	x	x	
+	🐦‍⬛ 🦋 🐝							x	x	x	
	🐦‍⬛ 🦋 🐝									x	🔊 ✋
						x	x				
							x			x	🔊 ✋
	🦋									x	⚽
							x			x	⚽
	🦋									x	⚽
	🐦 🐦‍⬛ 🐝 🦋									x	⚽
	🐦 🐦‍⬛ 🦋						x			x	🔊 ✋
	🐦‍⬛ 🦋 🐝									x	⚽
	🐦‍⬛ 🦋 🐝									x	⚽
	🐦‍⬛ 🦋 🐝									x	⚽
	🐦‍⬛ 🦋 🐝									x	⚽
	🐦 🐦‍⬛ 🐦‍⬛ 🐝						x			x	🔊 ✋
	🦋						x			x	
	🦋				x	x					
	🦋					x	x		x	x	
	🦋										⚽

✺ Full Sun, ◐ Part Sun, ● Full Shade, 💧 Low Water Use, 💧 Medium Water Use, 💧 High Water Use

🐦‍⬛ Birds, 🐦 Hummingbirds, 🦋 Butterflies, 🐝 Pollinators, 🐝 Moths

🔊 Sound, ✋ Tactile, ⚽ Fragrant

Legend	
Landscape typology	Description
1	1.5h, slope > 1:3
2	1.5h, 1:12 < slope < 1:3
3	1.5h, slope < 1:12
4	3h, x> 1:3
5	3h, 1:12 < slope < 1:3
6	3h, slope < 1:12
7	6h, slope > 1:3
8	6h, 1:12 < slope < 1:3
9	6h, slope < 1:12

Scientific Name	Common Name	Height	Native/ Adapted	Light			Water Use		
Rhamnus californica	California Coffeeberry	5-16	Native	●	◐				
Ribes divaricatum	Straggly Gooseberry	5.5-11	Native	●	◐				
Ribes malvaceum	Chaparral Currant	5-8	Native	●	◐		●		
Ribes menziesii	Canyon Gooseberry	6.6-10	Native			●	●		
Ribes sanguineum	Blood Currant	13	Native	●	◐		●		
Rosa californica	California Wildrose	8-10	Native	●	◐	●	●	●	●
Rosa gymnocarpa	Dwarf Rose	3-6.6	Native	●	◐	●	●	●	●
Rubus parviflorus	Thumbleberry	4-8.2	Native	◐					
Rubus spectabilis	Salmon Berry	3.3-13.1	Native	●				●	●
Rubus ursinus	Pacific Blackberry	2-6	Native	●	◐	●		●	●
Salvia sp.	Sage	1-3	Native	●	◐		●		
Sambucus mexicana	Blue Elderberry	20-30	Native	●	◐	●	●		
Sambucus racemosa	Mountain Red Elderberry	10-20	Native		◐			●	●
Solanum umbelliferum	Bluewitch Nightshade	3.3	Native	●	◐		●		
Symphoricarpos albus	Snowberry	4-6	Native		◐	●	●		
Tibouchina urvilleana	Princess flower	6-12	Adapted	●	◐				
Tibouchina heteromalla	Silver Princess flower	6-12	Adapted	●	◐				
Tibouchina lepidota	Dwarf Princess flower	3-6	Adapted	●	◐				
Vaccinium ovatum	Huckleberry	1.6-8	Native	●	◐		●		
Verbena lilacina	De La Mina Verbena	2-3	Native	●	◐		●	●	

Stabilizing	Ecological Services	Landscape typology									Bloom Color	Sensory Interest
							x			x		
										x		
							x			x		
				x			x					
							x			x		
				x			x			x		
			x	x		x	x		x	x		
							x					
				x						x		
		x	x	x	x	x	x	x	x	x		
			x				x			x		
				x			x			x		
							x					
						x	x		x	x		
				x								
						x	x		x	x		
						x	x		x	x		
							x			x		

Grasses

This list includes both true grasses (Poaceae or Craminaeae), as well as grass-like perennial plants, such as carex (Cyperaceae), iris (Iridaceae), and rush (Juncaeae). All species on this list are perennials. Grasses particularly known for foxtail risk to pets (where the seed can burrow into the fur and skin as an irritant) are identified, and are not recommend for use near off-leash areas.

Legend	
Landscape typology	Description
1	1.5h, slope > 1:3
2	1.5h, 1:12 < slope < 1:3
3	1.5h, slope < 1:12
4	3h, x> 1:3
5	3h, 1:12 < slope < 1:3
6	3h, slope < 1:12
7	6h, slope > 1:3
8	6h, 1:12 < slope < 1:3
9	6h, slope < 1:12

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use			Stabilizing	Ecological Services	Landscape typology									Considerations	Sensory Interest
		ft										1	2	3	4	5	6	7	8	9		
Alopecurus aequalis var. sonomensis	Sonoma Alopecurus	2	Native	●			💧												x	x	Minor foxtail risk for pets	🔊 ✋
Aristea inaequalis	Aristeaw	3	Adapted	●			💧												x	x	Minor foxtail risk for pets	
Aristea major	Aristea	3	Adapted	●			💧												x	x	Minor foxtail risk for pets	
Aristida purpurea	Purple Three Awn	1.6-3.3	Native	●			💧			+								x	x	x	Minor foxtail risk for pets	🔊 ✋
Bothriochloa barbinodis	Cane Bluestem	2-4	Native	●			💧				🦋								x	x	Minor foxtail risk for pets	🔊 ✋
Bouteloua sp.	Grama grass	0.49-2	Native	●	◐		💧			+	🦋				x	x	x	x	x	x		
Calamagrostis sp.	Reedgrass	3.3	Native	●	◐			💧	💧		🦋						x		x	x		🔊 ✋
Carex barbarae	Valley Sedge	1.6-3.3	Native		◐		💧	💧	💧		🦋											
Carex bolanderi	Bolander's Sedge		Native	●	◐			💧			🦋						x			x		
Carex cusickii	Cusick's Sedge	4.3	Native		◐			💧			🦋						x					
Carex densa	Dudley's Sedge		Native	●				💧	💧		🦋									x		
Carex globosa	Round Fruit Sedge	1.3	Native			●	💧				🦋			x								
Carex harfordii	Harford's Sedge		Native		◐			💧	💧		🦋						x			x		
Carex obnupta	Slough Sedge	3-3.9	Native			●		💧	💧		🦋			x								
Carex subbracteata	Small Bract Sedge		Native	●	◐			💧			🦋			x			x			x		
Carex divulsa	Berkeley Sedge	2	Native		◐	●	💧				🦋			x			x					
Cordyline sp.	Ti plant	2-10	Adapted	●	◐			💧			🦋						x		x	x		
Cyperus niger	Black Flatsedge	1.6	Native	●	◐			💧			🦋						x		x	x	Minor ingestion toxicity	
Danthonia californica	California Oatgrass	2-3.3	Native	●	◐		💧	💧	💧		🦋					x	x		x	x		
Deschampsia cespitosa ssp. holciformis	California Hairgrass		Native	●	◐		💧				🦋						x		x	x	Minor foxtail risk for pets	🔊 ✋

● Full Sun, ◐ Part Sun, ● Full Shade, 💧 Low Water Use, 💧 Medium Water Use, 💧 High Water Use

🦋 Birds, 🦋 Hummingbirds, 🦋 Butterflies, 🦋 Pollinators, 🦋 Moths

🔊 Sound, ✋ Tactile, ⚽ Fragrant

Legend	
Landscape typology	Description
1	1.5h, slope > 1:3
2	1.5h, 1:12 < slope < 1:3
3	1.5h, slope < 1:12
4	3h, x> 1:3
5	3h, 1:12 < slope < 1:3
6	3h, slope < 1:12
7	6h, slope > 1:3
8	6h, 1:12 < slope < 1:3
9	6h, slope < 1:12

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use			Stabilizing	Ecological Services	Landscape typology									Considerations	Sensory Interest
												1	2	3	4	5	6	7	8	9		
Dietes sp.	African Iris	2-4	Adapted	●	◐		●			+					x	x	x	x				
Deschampsia elongata	Hair grass	2.3-3.3	Native	●	◐	●	●				🦋			x			x		x	x	Minor foxtail risk for pets	🔊 ✋
Eleocharis obtusa	Broad Spiked Spikerush	1.6	Native	●	◐		●				🐦 🦋						x		x	x		
Elymus glaucus	Western Rye Grass	5	Native	●	◐		●			+	🦋				x	x	x	x	x	x		
Festuca sp.	Fescue	1.3-4	Native	●	◐		●				🦋						x		x	x		
Hordeum brachyantherum	Meadow Barley	2-3.3	Native	●			●	●	●		🦋								x	x		
Juncus bolanderi	Bolander's Rush	2.6	Native	●				●	●		🦋									x		
Juncus effusus	Bog Rush	4	Native	●				●	●		🦋									x		
Juncus occidentalis	Slender Juncus Rush	1-2	Native	●				●	●		🦋									x		
Juncus patens	Common Rush	1-3	Native	●				●	●		🦋									x		
Juncus xiphioides	Irisleaf Rush	1-3	Native		◐			●	●		🦋						x			x		
Koeleria macrantha	Junegrass	0.7-2.3	Native	●	◐	●	●				🦋			x			x			x		
Leymus sp.	Wild rye	3-10	Native	●			●				🦋								x	x		
Libertia grandiflora	New Zeland Iris	2-3	Adapted	●	◐			●			🦋						x		x	x	Minor foxtail risk for pets	
Luzula comosa	Wood Rush	1.3	Native		◐	●		●	●		🦋						x			x		
Melica imperfecta	Coast Melic grass	3.2-4	Native	●	◐		●			+	🦋				x	x	x	x	x	x		
Melica torreyana	Torrey's Melicgrass	1-3	Native	●	◐	●	●				🦋	x	x	x	x	x	x	x	x	x		
Muhlenbergia rigens	Deergrass	4-5	Native	●			●			+	🦋							x	x	x		
Orthrosanthus multiflorus	Morning Iris	1-2	Adapted	●			●												x	x		
Phormium 'Dark delight'	New Zealand flax	3-4	Adapted	●	◐			●														
Scirpus americanus	California Tule	3.5-7	Native	●				●	●		🦋								x	x		
Scirpus californicus	California Tule	6-12	Native	●				●	●	+	🦋								x	x		
Sporobolus airoides	Alkali Sacaton	3-4	Native	●			●	●	●		🦋									x		
Nassella lepida	Small Flowered Needlegrass	1.7-3.3	Native	●	◐	●	●				🦋								x	x		
Nassella pulchra	Purple Needlegrass	3.3	Native	●			●				🦋								x	x		

● Full Sun, ◐ Part Sun, ● Full Shade, ● Low Water Use, ● Medium Water Use, ● High Water Use

🐦 Birds, 🐦 Hummingbirds, 🦋 Butterflies, Pollinators, Moths 🔊 Sound, ✋ Tactile, Fragrant

Succulents

This list is a compilation of stonecrop species (Crassulaceae), agaves (Asparagaceae), and Spiderwort (Commelinaceae), species characterized by fleshy tissue for storing water, and thick, waxy cuticles, both of which make these plants extremely drought tolerant. No species in this plant list are high water use species, and so that column is omitted from this table.

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use		Stabilizing	Ecological Services
		in		☀	◐	●	💧			
Aeonium	Aeonium			☀	◐	●	💧			
Agave americana	Century plant	3-6	Native	☀			💧			
Agave Attenua	Foxtail Agave	3-5	Adapted	☀			💧			
Agave Calandrinia				☀			💧			
Agave Ovatifolia	Whale's Tongue Agave	3-4		☀			💧			🦅
Agave Vilmoriniana	Octopus Agave	5-6	Adapted	☀			💧			
Aloe sp.	Aloe			☀	◐		💧			
Echeveria sp.	AWax Agave			☀	◐		💧			
Crassula capitella 'Campfire'	Campfire Crassula	<1	Adapted	☀	◐		💧		x	
Crassula ovata	Hobbit Jade	1-3	Adapted	☀	◐	●	💧			
Crassula perfoliata var. minor	Scarlet Paintbrush	<2	Adapted	☀	◐		💧		x	
Dudleya cymosa ssp. cymosa	Canyon Liveforever	3.6-5	Native	☀			💧			🦅🦋🐝
Dudleya cymosa	Canyon Dudleya	3.6-6	Native	☀	◐		💧			🦅🦋🐝
Dudleya farinosa	Bluff Lettuce	3.6-8.4	Native		◐	●	💧			🦅🦋🐝
Graptopetalum sp.	Ghost Plant	2-8	Adapted	☀	◐		💧			
Lewisia cotyledon	Cliff Maids	2-6	Native	☀	◐		💧			
Puya sp.	Queen of the Andes	36-96	Adapted	☀	◐		💧			
Sedum sp	Stonecrop	1.2-8.4	Native		◐	●	💧			🦋
Sedum spathulifolium	Yellow Stonecrop	1.2-8.4	Native		◐	●	💧			🦋
Sempeverum tectorum	Common Houseleek	2-4	Adapted		◐	●	💧			
Tradescandia sp.	Inch Plant	6-8	Adapted		◐	●		💧		
Yucca gloriosa	Spanish dagger	2-3	Adapted	☀			💧			

Landscape typology									Bloom Color	Sensory Interest
1	2	3	4	5	6	7	8	9		
	x	x		x	x		x	x		
							x	x		
							x	x		
							x	x		
							x	x		
							x	x		
				x	x		x	x		🤚
				x	x		x	x		🤚
				x	x	x	x	x		
					x	x	x	x		
				x	x	x	x	x		🤚
							x	x		🤚
					x		x	x		🤚
x	x	x	x	x	x					🤚
					x	x	x	x		🤚
				x	x	x	x	x		🤚
				x	x	x	x	x		
				x	x	x	x	x		
				x	x	x	x	x		🤚
				x	x	x	x	x		🤚
	x	x		x	x					
							x	x		

Legend	
Landscape typology	Description
1	1.5h, slope > 1:3
2	1.5h, 1:12 < slope < 1:3
3	1.5h, slope < 1:12
4	3h, x> 1:3
5	3h, 1:12 < slope < 1:3
6	3h, slope < 1:12
7	6h, slope > 1:3
8	6h, 1:12 < slope < 1:3
9	6h, slope < 1:12

☀ Full Sun, ◐ Part Sun, ● Full Shade, 💧 Low Water Use, 💧 Medium Water Use

🐝 Birds, 🦅 Hummingbirds, 🦋 Butterflies, Pollinators, Moths

Sound, 🤚 Tactile, Fragrant

Perennials

The perennials list is the most diverse of the recommended planting palettes, offering a broad range of species for use in gardenesque settings across the campus site. In addition to the attributes included in previous lists, the perennials list also identifies species suitable for extensive greenroofs. Note, bloom color is not included for these perennials because many of the species and genus included in this list have a wide range of colors based on cultivar and variety.

Legend	
Landscape typology	Description
1	1.5h, slope > 1:3
2	1.5h, 1:12 < slope < 1:3
3	1.5h, slope < 1:12
4	3h, x> 1:3
5	3h, 1:12 < slope < 1:3
6	3h, slope < 1:12
7	6h, slope > 1:3
8	6h, 1:12 < slope < 1:3
9	6h, slope < 1:12

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use			Stabilizing	Ecological Services	Landscape typology									Considerations	Sensory Interest
Abelia grandiflora	Abelia	4	Adapted	●	◐				●							x				x		
Abronia latifolia	Sand Verbena	6	Native	●			●											x	x			
Acaena pinnatifida var. californica	California Sheepburr	0.33-2	Native	●			●											x	x			
Acanthus mollis	Bear's Breeches	2	Adapted		◐	●			●					x								
Achillea millefolium	Common Yarrow	1-3	Native	●	◐	●	●					x	x	x	x	x	x	x	x	x	Extensive green roof suitable, min. 4" depth	
Actinidia kolomitka	Ornamental Kiwi	Vine	Adapted	●	◐				●						x	x		x	x			
Adenium obesum	Desert Rose	2	Adapted	●															x			
Adenocaulon bicolor	American Trailplant	3.3	Native		◐				●							x						
Agapanthus sp.	Agapantha	Varies	Adapted	●	◐		●								x	x	x	x	x	x	Note, some can be considered locally invasive.	
Agastache sp.	Hyssop	2	Adapted	●					●										x			
Agoseris grandiflora	California Dandelion	1.8-3.3	Native	●	◐		●										x			x		
Allium acuminatum	Tapertip Onion	1	Native		◐																Extensive green roof suitable, min. 4" depth	
Allium dichlamydeum	Coast Onion		Native	●			●											x	x	x		
Allium unifolium	One Leaf Onion	1-2.6	Native	●	◐		●									x	x	x	x	x		
Aloe sp.	Aloe	Varies	Adapted	●			●															
Ambrosia chamissonis	Beach Bur	13	Native	●			●			x								x	x	x		
Anaphalis margaritacea	Pearly Everlasting	3-4	Native	●																	Extensive green roof suitable, min. 6" depth	
Angelica hendersonii	Coast Angelica	3.3-7	Native	●			●												x	x		
Angelica tomentosa	Woolly Angelica	3.3-7	Native		◐	●											x	x		x	x	
Anigozanthos sp.	Kangeroo's Paws	2	Adapted	●	◐												x	x		x		
Antennaria rosea	Rosy Pussytoes	0.13-1.3	Native		◐																Extensive green roof suitable, min. 4" depth	
Aquilegia formosa	Western Columbine	1.5-3	Native	●	◐	●	●		●			x	x	x	x	x	x	x	x	x		
Arabis blepharophylla	Coast Rock Cress	8-10 in	Native		◐										x	x	x					
Aralia californica	Elk's Clover	6.6-10	Native		◐	●			●					x			x					
Arctotis sp.	African Daisy	1.5	Adapted	●			●													x		
Arctostaphylos uva-ursi	Kinnikinnick	1.6	Native	●	◐		●														Extensive green roof suitable, min. 12" depth	

● Full Sun, ◐ Part Sun, ● Full Shade, Low Water Use, Medium Water Use, High Water Use

Birds, Hummingbirds, Butterflies, Pollinators, Moths Sound, Tactile, Fragrant

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use			Stabilizing	Ecological Services	Landscape typology									Considerations	Sensory Interest
Argyranthemum frutescens	Marguerite	1.5	Adapted	●			💧												x	x		
Aristolochia californica	Dutchmans Pipe	1-20	Native		◐		💧	💧			🦋				x	x	x					
Armeria maritima	Thrift Seapink		Native																		Extensive green roof suitable, min. 6” depth	
Artemisia californica	California Sagebrush	1-8	Native	●			💧			x	🐦🦋							x	x	x		
Artemisia campestris	Field Sagewort (var. caudata)	1.3	Native	●						x											Extensive green roof suitable, min. 6” depth	
Artemisia douglasiana	Douglas’ Sagewort	8	Native	●	◐	●	💧	💧	💧	x	🐦🦋				x	x	x	x	x	x		
Artemisia ludoviciana	White Sagebrush	1-3.3	Native	●			💧				🐦🦋										Extensive green roof suitable, min. 6” depth,	
Asarum caudatum	Wild Ginger	1	Native		◐	●		💧	💧		🐦🦋🐝			x			x					
Asclepias tuberosa	Butterfly Milkweed		Native	●							🐦🦋										Extensive green roof suitable, min. 6” depth	
Aster chilense	California Aster	1.3-3.3	Native	●	◐		💧				🐦🦋🐝				x	x	x	x	x	x		
Athyrium filix-femina	Common Ladyfern		Native		◐	●		💧	💧			x	x	x	x	x	x					
Atriplex leucophylla	Seascale	1	Native	●			💧				🐦🦋							x	x	x		
Baccharis glutinosa	Saltmarsh Baccharis	3.3-7	Native		◐			💧	💧		🐦🦋🐝					x	x					
Bergenia cordifolia	Bergenia	1	Adapted	●	◐		💧				🐝				x	x	x	x	x	x		
Bouteloua curtipendula	Sideoats Grama	3	Native	●	◐		💧				🦋										Extensive green roof suitable, min. 6” depth	
Bouteloua gracilis	Blue Grama	0.49-2	Native	●	◐		💧				🦋										Extensive green roof suitable, min. 4” depth	
Boykinia occidentalis	Brook Foam	1-2	Native		◐		💧	💧	💧								x					
Brodiaea elegans	Harvest Brodiaea	1.6	Native	●	◐		💧									x	x		x	x		
Bulbinella robusta	Bulbinella	1	Adapted	●	◐		💧								x	x	x	x	x	x	Note, requires well drained soils	
Calochortus argillosus	Clay Mariposa Lily	1.3-2	Native	●			💧				🦋					x	x		x	x		
Calochortus superbus	Yellow Mariposa	1.3-2	Native	●	◐		💧				🦋					x	x		x	x		
Calochortus tolmiei	Pussy Ears	1.3	Native	●	◐		💧				🦋						x			x		🤚
Calystegia purpurata	Morning Glory	2	Native	●							🐝🦋				x	x	x	x	x	x		
Camassia leichtlinii ssp. suksdorfii	Suksdorf’s Large Camas		Native		◐										x	x	x					
Campanula californica	Swamp Harebell		Native	●	◐	●						x	x	x	x	x	x	x	x	x		
Campanula rotundifolia	Bluebell Bellflower		Native	●	◐		💧	💧	💧												Extensive green roof suitable, min. 6” depth	
Cardamine californica	Milk Maids	1	Native	●	◐						🦋											
Carex scoparia	Broom Sedge	0.7-2.5	Native	●			💧	💧			🦋										Extensive green roof suitable, min. 6” depth	
Carex vulpinoidea	Fox Sedge	3.3	Native	●							🦋										Extensive green roof suitable, min. 6” depth	
Cephalanthus occidentalis	Buttonbush	3-20	Native	●				💧	💧		🐝🐦🦋										Extensive green roof suitable, min. 8” depth	
Chlorogalum pomeridianum var. divaricatum	Spreading Soaproot		Native	●	◐						🦋								x	x		
Cirsium andrewsii	Franciscan Thistle	6.6	Native	●							🦋							x	x	x		
Cirsium brevistylum	Indian Thistle	6.6-9.8	Native		◐						🦋						x	x				
Cirsium quercetorum	Brownie Thistle	7.9	Native		◐						🦋						x	x				
Cistus sp.	Rockrose	Varies	Adapted	●	◐										x	x	x	x	x	x		
Clematis lasiantha	Chaparral Clematis	15	Native		◐	●	💧				💧🦋		x	x		x	x					

● Full Sun, ◐ Part Sun, ● Full Shade, 💧 Low Water Use, 💧 Medium Water Use, 💧 High Water Use

🐦 Birds, 🐝 Hummingbirds, 🦋 Butterflies, 🐝 Pollinators, 🐝 Moths 🔊 Sound, 🤚 Tactile, ⚽ Fragrant

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use			Stabilizing	Ecological Services	Landscape typology									Considerations	Sensory Interest
Clematis ligusticifolia	Virgin's Bower	1-30	Native		◐	●	💧						x	x		x	x					
Clinopodium douglasii	Brownie Thistle	3.6-7.2	Native		◐	●	💧						x	x		x	x					
Corethrogyne filaginifolia	California Aster	0.7-3.3	Native	✺	◐		💧								x	x	x	x	x	x		
Cordyline sp.	Cordyline	Varies	Adapted	✺	◐		💧								x	x	x	x	x	x		
Cornus canadensis	Bunchberry	7.9-11.8 in	Native		◐			💧													Extensive green roof suitable, min. 6" depth	
Cornus sericea	Red Osier Dogwood	6-9	Native	✺	◐			💧	💧												Extensive green roof suitable, min. 8" depth	
Delphinium californicum	California Larkspur		Native	✺	◐											x	x		x	x		
Delphinium decorum ssp. decorum	Coast Larkspur		Native	✺	◐											x	x		x	x		
Delphinium luteum	Golden Larkspur	0.7-1.8	Native													x	x		x	x		
Deschampsia cespitosa	Tufted Hairgrass	2-3	Native		◐			💧													Extensive green roof suitable, min. 4" depth	
Dianella tasmanica	Tasmanian Flax Lilly	3-6	Adapted	✺	◐										x	x	x	x	x	x		
Dicentra formosa	Bleeding Heart	0.7-1.6	Native	✺	◐	●	💧	💧	💧				x	x		x	x		x	x		
Dichelostemma capitatum	Blue Dicks	1.5-2	Native	✺			💧												x	x		
Dichondra donelliana	Dichondra		Native	✺			💧	💧	💧										x	x		
Dicksonia antarctica	Hardy Tree Fern	6-12	Adapted		◐	●		💧	💧				x	x		x	x					
Dicentra formosa	Bleeding Heart	0.7-1.6	Native	✺	◐	●	💧	💧	💧				x	x		x	x		x	x		
Dietes sp.	Fortnight lilly	Varies	Adapted	✺	◐		💧								x	x	x	x	x	x		
Disporum hookeri	Large-flowered fairy Bells	2.6-3.3	Native		◐			💧	💧						x	x	x					
Dodecatheon hendersonii	Mosquito Bills	4-11.8	Native		◐	●										x	x		x	x		
Epilobium angustifolium	Fireweed	1	Native	✺			💧														Extensive green roof suitable, min. 6" depth	
Epilobium canum	California Fuchsia	0.25-1.5	Native	✺			💧												x	x		
Ericameria ericoides	Mock Heather	2-3.5	Native	✺			💧												x	x		
Erigeron foliosus	Leafy Fleabane	0.7-3.3	Native		◐					x									x	x		
Erigeron glaucus	Seaside Fleabane	0.16-1	Native	✺			💧			x									x	x		
Erigeron linearis	Desert Yellow Fleabane	0.7-1	Native	✺																	Extensive green roof suitable, min. 6" depth	
Erigeron supplex	Supple Daisy	1.3	Native	✺															x	x		
Eriogonum crocatum	Conejo Buckwheat	0.6-3	Native	✺			💧			x									x	x		
Eriogonum grande var. rubescens	Red-flowered Buckwheat	0.7-1.5	Native	✺			💧			x									x	x		
Eriogonum latifolium	Coast Buckwheat	1.7-2.3	Native	✺			💧			x									x	x		
Eriophyllum lanatum	Common Wooly Sunflower	1-3.3	Native	✺	◐		💧														Extensive green roof suitable, min. 6" depth	
Eriophyllum staechadifolium	Lizard-tail	2-5	Native		◐	●	💧			x						x	x		x	x		
Erythranthe cardinalis	Scarlet Monkeyflower	1.5-3	Native	✺	◐			💧	💧						x	x	x	x	x	x		
Erythranthe guttata	Seep Monkey Flower	2-5	Native	✺	◐			💧	💧						x	x	x	x	x	x		
Euthamia occidentalis	Western Goldentop	3.5-7	Native	✺				💧	💧										x	x		
Extriplex californica	California Saltbush	1-2.6	Native	✺			💧			x									x	x		

✺ Full Sun, ◐ Part Sun, ● Full Shade, 💧 Low Water Use, 💧 Medium Water Use, 💧 High Water Use

Birds, Hummingbirds, Butterflies, Pollinators, Moths

Sound, Tactile, Fragrant

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use			Stabilizing	Ecological Services	Landscape typology									Considerations	Sensory Interest
Festuca idahoensis	Idaho Fescue	1-2.6	Native	●			💧				🦋										Extensive green roof suitable, min. 6” depth	
Fragaria chiloensis	Beach Strawberry	0.49-1	Native	●	◐		💧				🐦 🦋										Extensive green roof suitable, min. 6” depth	
Fragaria vesca	Woodland Strawberry	0.1-1	Native	●	◐		💧				🐦 🦋				x	x	x	x	x	x		
Fragaria virginiana	Virginia Strawberry	0.8-4.8	Native	●	◐		💧				🐦 🦋										Extensive green roof suitable, min. 6” depth	
Fritillaria affinis var. affinis	Checker Lily	0.33-3.9	Native		◐		💧									x	x					
Fritillaria affinis var. tristulis	Checker Lily	0.33-4	Native		◐											x	x					
Fritillaria liliacea	Fritillary	1.2	Native	●			💧	💧	💧							x	x					
Gentiana affinis var. ovata	Pleated Gentian		Native	●							🦋							x	x	x		⚙
Geum triflorum	Old Man’s Whiskers	0.8-1.5	Native	●	◐		💧				🦋										Extensive green roof suitable, min. 6” depth	
Grindelia hirsutula	Gumweed	5-8.2	Native	●			💧											x	x	x		
Grindelia stricta var. platyphylla	Gumweed	1-1.6	Native	●	◐		💧			x	🦋				x	x	x	x	x	x		⚙
Gunnera tinctoria	Chilean gunnera	5	Adapted	●	◐												x			x		
Helenium autumnale	Common Sneezeweed	3.3-4.9	Native		◐			💧	💧		🐝 🦋										Extensive green roof suitable, min. 6” depth	
Helenium puberulum	Sneezeweed	5	Native	●				💧	💧		🐝 🦋								x	x		
Helianthus californicus	California Sunflower	3.3-11	Native	●							🐦 🦋 🐝								x	x		
Heracleum maximum	Cow Parsnip	4-8	Native		◐		💧				🦋						x	x				
Heuchera ‘Canyon Belle’	Canyon Belle Coral Bells	0.5-1	Native		◐	●		💧					x	x	x	x	x	x				
Heuchera elegans	Elegant Coral Bells	0.5-2	Native		◐	●		💧					x	x	x	x	x	x				
Heuchera micrantha	Crevice Alumroot	1-3.3	Native		◐	●	💧	💧	💧		🐦 🦋		x	x	x	x	x	x				
Heuchera pilosissima	Seaside Alumroot	0.7-1.6	Native		◐	●	💧						x	x	x	x	x	x				
Hieracium albiflorum	White Hawkweed	1.5-3	Native		◐		💧				🦋					x	x	x				
Horkelia californica var. californica	California Horkelia	0.33-4	Native	●						x	🐝 🦋							x	x	x		
Horkelia cuneata var. sericea	Kellogg’s Horkelia	0.7-2.3	Native	●						x	🐝 🦋							x	x	x		
Hypericum scouleri	Scouler’s St. Johnswort		Native		◐						🦋						x	x				⚙
Iris douglasiana	Douglas Iris	0.6-2.6	Native	●	◐	●	💧				🦋			x	x		x	x				
Iris macrosiphon	Ground Iris	0.5-1	Native	●	◐	●		💧			🦋				x			x				⚙
Juniperus communis (var. depressa)	Common Juniper	5-32.8	Native		◐		💧				🦋										Extensive green roof suitable, min. 12” depth	
Kniphofia uvaria	Red-hot poker	3-4	Adapted		◐	●		💧		x					x	x	x	x	x	x		
Koeleria macrantha	Prairie Junegrass	0.7-2.3	Native	●	◐	●	💧				🦋										Extensive green roof suitable, min. 6” depth	
Lathyrus littoralis	Silky Beach Pea	1.6	Native	●							🦋							x	x	x		
Lathyrus vestitus var. ochropetalus	Hillside Pea		Native	●							🦋							x	x	x		
Lepechina fragrans	f Pitcher Sage	3	Native	●	◐		💧				🦋						x	x		x		⚙
Lilium maritimum	Coast lily	1.5	Native	●	◐		💧	💧			🦋						x	x		x		
Lilium pardalinum ssp. pardalinum	Leopard Lily	1	Native		◐						🐦 🐝 🦋						x	x				
Linum lewisii	Prairie Flax	1.5-3	Native	●			💧				🦋										Extensive green roof suitable, min. 12” depth	
Lithophragma heterophyllum	Hillside Woodland Star	0.49-1.6	Native		◐	●					🦋											

● Full Sun, ◐ Part Sun, ● Full Shade, 💧 Low Water Use, 💧 Medium Water Use, 💧 High Water Use

🐦 Birds, 🐝 Hummingbirds, 🦋 Butterflies, 🐝 Pollinators, 🐝 Moths 🔊 Sound, ✋ Tactile, ⚙ Fragrant

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use			Stabilizing	Ecological Services	Landscape typology									Considerations	Sensory Interest
Lobelia cardinalis	Cardinal Flower	3-5.9	Native	●	◐	●		💧	💧		🐦🦋🐝										Extensive green roof suitable, min. 6” depth	
Lomatium dasycarpum	Woolly Fruited Lomatium	1.6	Native	●			💧				🦋						x	x	x			
Lupinus tidestromii	Tidestrom’s Lupine	4-11.8	Native	●	◐		💧				🐝🦋				x	x	x	x	x	x		
Lysichiton americanus	Yellow Skunk Cabbage	5	Native		◐	●	💧	💧						x			x					
Maianthemum dilatatum	False Lily Of The Vally	1.3	Native		◐	●		💧	💧		🦋		x	x		x	x					
Maianthemum stellatum	Starry False Solomon’s Seal	2.5	Native	●	◐		💧				🦋										Extensive green roof suitable, min. 6” depth	
Monardella villosa	Coyote Mint	2	Native	●	◐		💧				🐦🦋🐦‍⬛🐝				x	x	x	x	x	x		
Muilla maritima	Sea Muilla	1-2	Native		◐	●											x			x		
Narcissus spp.	Narcissus	.5-1.5	Adapted	●	◐			💧							x	x	x	x	x	x		
Oenanthe sarmentosa	Pacific Oenanthe	5	Native	●							🦋								x	x		
Oenothera elata	Hooker’s Evening Primrose	5	Native	●	◐		💧				🦋					x	x		x	x		
Osmorhiza chilensis	Sweet Cicely	2-4	Native	●	◐		💧				🦋					x	x		x	x		
Oxalis albicans	Coastal Oxalis	.5-1.5	Native		◐	●		💧					x	x		x	x					
Oxalis oregana	Sorrel	0.16-1.3	Native		◐			💧			🦋					x	x					
Parthenocissus vitacea	Virginia Creeper	65-90	Native	●	◐					x	🦋				x	x	x	x	x	x		
Penstemon centranthifolius	Scarlet Bugler	2-4	Native	●	◐		💧				🐝🦋🐦🐦‍⬛					x	x		x	x		
Penstemon heterophyllus	Foothill Penstemon	3.3-5	Native	●	◐	●	💧				🐝🦋🐦🐦‍⬛					x	x		x	x		
Perideridia kelloggii	Kellogg’s Yampah	5	Native	●			💧				🦋								x	x		
Phacelia campanularia	Desertbells	1-2	Native	●			💧				🐝🦋										Extensive green roof suitable, min. 4” depth	
Phlomis sp	Jerusalim sage	2-3	Adapted	●	◐			💧								x	x		x	x		⚽
Phyla nodiflora	Common Lippia	2.4-6	Native	●						x	🦋							x	x	x		
Plectranthus sp.	Mexican Mint	1-2	Adapted		◐	●		💧						x			x					⚽
Polemonium carneum	Royal Sky Pilot	1.3-3.3	Native		◐	●	💧							x			x					
Polygala californica	California Milkwort	0.16-1.2	Native		◐	●								x			x					
Polypodium californicum	California Polypody	1.5	Native		◐	●	💧	💧	💧					x			x					✋
Polypodium scouleri	Leathery Polypody	0.5	Native		◐	●		💧	💧					x			x					✋
Polystichum munitum	Sword Fern	1.6-5.9	Native			●	💧				🦋		x	x	x							
Potentilla anserina ssp. pacifica	Pacific Potentilla		Native	●				💧	💧		🦋								x	x		⚽
Potentilla glandulosa ssp. glandulosa	Sticky Cinquefoil	0.7-2	Native								🦋								x	x		⚽
Ranunculus californicus	California Buttercup	0.6-2.3	Native		◐	●	💧	💧	💧	x	🐝🦋	x	x	x	x	x	x					
Ranunculus occidentalis	Western Buttercup	0.33-2	Native	●	◐	●				x	🦋	x	x	x	x	x	x					
Rhus aromatica	f Sumac	1.6-8	Native	●			💧				🐝🦋										Extensive green roof suitable, min. 8” depth	

● Full Sun, ◐ Part Sun, ● Full Shade, 💧 Low Water Use, 💧 Medium Water Use, 💧 High Water Use

🐦 Birds, 🐦 Hummingbirds, 🦋 Butterflies, 🐝 Pollinators, 🐦‍⬛ Moths ✋ Sound, ✋ Tactile, ⚽ Fragrant

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use		
Rudbeckia hirta	Black-eyed Susan	1-2.6	Native	●			💧		
Salix exigua	Narrowleaf Willow	10-23	Native	●				💧	💧
Salvia sp.	Sage	2-7	Adapted	●					
Sambucus racemosa	Red Elderberry	6.6-20	Native	●	◐			💧	💧
Sanicula crassicaulis	Pacific Sanicle	3.3-6.6	Native		◐	●			
Satureja douglasii	Yerba Buena	3.6-7.2	Native	●	◐		💧		
Scrophularia californica	Bee Plant	2-4	Native		◐		💧		
Sedum spathulifolium	Yellow Stonecrop	1.2-8.4	Native		◐	●	💧		
Sidalcea malviflora	Checker Bloom	0.3-1.5	Native	●	◐		💧		
Sisyrinchium bellum	Blue Eyed Grass	1-2	Native	●	◐		💧		
Sisyrinchium californicum	Yellow Eyed Grass	0.7-1	Native	●	◐			💧	💧
Smilacina racemosa	Slim Solomon	1.6-3	Native		◐		💧		
Smilacina stellata	False Solomon Seal	2.5	Native	●	◐		💧		
Solanum douglasii	Douglas' Nightshade	3.5-7	Native	●	◐		💧		
Solidago californica	California Goldenrod	1.5-5	Native	●	◐		💧		
Solidago canadensis	Common Goldenrod	5	Native	●			💧		
Solidago spathulata ssp. spathulata	Coast Goldenrod	0.33-1.6	Native	●			💧		
Stachys ajugoides	Ajuga Hedge Nettle	0.33-1	Native	●					
Strelitzia reginae	Bird of Paradise	3	Adapted	●	◐		💧		
Symphoricarpos albus	Common Snowberry	3-6	Native		◐	●	💧	💧	💧
Tanacetum camphoratum	Dune Tansy	9.6	Native	●			💧		
Tellima grandiflora	Bigflower Tellima	1.3-3	Native		◐	●	💧	💧	💧
Thalictrum fendleri	Meadow Rue	7	Native			●		💧	💧
Triteleia laxa	Ithuriel's Spear	2	Native	●	◐	●	💧	💧	
Veronica scutellata	Marsh Speedwell	1.3-2	Native	●	◐		💧	💧	💧
Viola adunca	Dog Violet	1	Native	●	◐				
Viola sempervirens	Evergreen Violet	0.5	Native		◐	●	💧		
Woodwardia fimbriata	Giant Chain Fern	4-6	Native		◐	●		💧	💧
Wyethia angustifolia	Narrow Leaf Mule Ears	1-3	Native	●			💧		
Wyethia glabra	Shining Mule Ears	1.3	Native			●			
Zigadenus fremontii	Chaparral Zygadene	2	Native	●			💧		

Stabilizing	Ecological Services	Landscape typology								Considerations	Sensory Interest
	🦋					x			x	Extensive green roof suitable, min. 6" depth	
	🐝🐦🦋					x			x	Extensive green roof suitable, min. 8" depth	
x							x	x	x		⚽
	🐝🐦🦋									Extensive green roof suitable, min. 8" depth	
	🦋		x	x		x	x				
x	🦋				x	x	x	x	x		⚽
x	🐦🦋🐦🐝					x	x				⚽
	🦋				x	x	x	x	x	Extensive green roof suitable, min. 4" depth	
	🐦🦋					x	x		x	x	
						x	x		x	x	
						x	x		x	x	
	🦋						x				
	🦋						x			x	
	🐦🦋					x	x		x	x	
	🦋						x				
	🦋						x			x	
	🐦🦋					x	x		x	x	
x	🐝🦋				x	x	x	x	x	x	
	🐝🦋🐦🐝						x	x	x		
	🐝🐦🦋				x	x	x	x	x	x	
	🐝🐦🦋							x	x	Extensive green roof suitable, min. 12" depth	
	🐝🦋							x	x		
	🐦🦋🐦🐝						x	x	x		
					x	x	x	x	x	x	
	🐝🐦🦋					x	x		x	x	Extensive green roof suitable, min. 8" depth
	🦋								x	x	
				x			x				
	🦋			x							
	🐝🦋			x			x			x	
	🦋					x	x		x	x	
	🦋						x			x	
	🦋			x							
	🦋						x			x	
	🦋						x			x	
	🦋								x	x	🖐
									x	x	🖐
									x	x	

● Full Sun, ◐ Part Sun, ● Full Shade, 💧 Low Water Use, 💧 Medium Water Use, 💧 High Water Use

🐦 Birds, 🐦 Hummingbirds, 🦋 Butterflies, 🐝 Pollinators, 🐝 Moths

🕪 Sound, 🖐 Tactile, ⚽ Fragrant

Meadow Flowers

This list includes meadow flowers, which have been separated out as their own category due to their unique life-cycle requirements. All species on this list are either self-seeding annuals or self-seeding biannuals, meaning that they die and return by self-seeding. Because of this, the aesthetic character of meadow plantings changes from year to year, and so meadow flower plantings are most suited to informal areas, such as restoration slopes, naturalized meadows, and non-occupiable roof gardens. No species in this plant list are high water use species, and so that column is omitted from this table.

Legend	
Landscape typology	Description
1	1.5h, slope > 1:3
2	1.5h, 1:12 < slope < 1:3
3	1.5h, slope < 1:12
4	3h, x> 1:3
5	3h, 1:12 < slope < 1:3
6	3h, slope < 1:12
7	6h, slope > 1:3
8	6h, 1:12 < slope < 1:3
9	6h, slope < 1:12

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use		Stabilizing	Ecological Services	Landscape typology									Bloom Color	Sensory Interest
		ft									1	2	3	4	5	6	7	8	9		
Amsinckia intermedia	Common Fiddleneck	0.7-3.9	Native	●			💧			🦋							x	x	x		
Amsinckia spectabilis var. spectabilis	Seaside Fiddleneck	0.7-3.10	Native				💧			🦋							x	x	x		
Antirrhinum kelloggii	Kelloggs' Snapdragon	0.23-3	Native	●	◐		💧			🐦 🦋 🐝				x	x	x	x	x	x		
Calandrinia ciliata	Red Maids	1.3	Native	●			💧										x	x	x		
Camissonia contorta	Plains Evening Primrose	1.2-11.8	Native	●			💧			🦋							x	x	x		
Camissoniopsis micrantha	Dune Sun Cup	1-2	Native	●			💧			🦋							x	x	x		
Camissonia ovata	Sun Cup		Native	●			💧										x	x	x		
Castilleja affinis ssp. affinis	Coast Indian Paintbrush	2	Native	●			💧			🦋							x	x	x		
Castilleja affinis ssp. neglecta	Tiburon Paintbrush	0.49-2	Native	●			💧			🦋							x	x	x		
Castilleja subinclusa ssp. franciscana	Longleaf Indian Paintbrush		Native	●			💧			🦋							x	x	x		
Centaurium davyi	Davy's Centaury	9.8 in	Native		◐		💧							x	x	x					
Centaurium muehlenbergii	Monterey Centauty		Native	●			💧										x	x	x		
Chorizanthe cuspidata var. cuspidata	San Francisco Bay Spineflower	1.9-5.9 in	Native	●			💧			🦋							x	x	x		🤚
Chorizanthe cuspidata var. villosa	Woolly-headed Spineflower	1.9-7.9 in	Native	●			💧			🦋							x	x	x		🤚
Collomia heterophylla	Variable-leaf Collomia		Native	●			💧										x	x	x		
Cryptantha leiocarpa	Beach Cryptantha	1.9-11.8	Native	●			💧			🦋							x	x	x		
Deinandra corymbosa	Coastal Tarweed	3.3	Native	●			💧			🦋 🐝							x	x	x		
Epilobium densiflorum	Denseflower Willowherb	0.16-3.3	Native	●			💧			🐦 🦋 🐝							x	x	x		
Erysimum capitatum	Sanddune Wallflower		Native		◐		💧			🦋				x	x	x					⚽
Erysimum franciscanum	San Francisco Wallflower		Native	●			💧			🦋							x	x	x		⚽
Erysimum menziesii	Yadon's Wallflower	5.9 in	Native	●			💧			🦋							x	x	x		⚽
Eschscholzia californica	California Poppy	0.16-2	Native	●			💧			🐦 🦋 🐝							x	x	x		⚽

● Full Sun, ◐ Part Sun, ● Full Shade, 💧 Low Water Use, 💧 Medium Water Use, 💧 High Water Use

🐦 Birds, 🐦 Hummingbirds, 🦋 Butterflies, 🐝 Pollinators, 🐝 Moths

🕪 Sound, 🤚 Tactile, ⚽ Fragrant

Scientific Name	Common Name	Height	Native/ Adapted	Sun/Shade			Water Use	
Gilia achilleifolia ssp. multicaulis	California Gilia		Native	●			💧	
Gilia capitata	Blue Field Gilia	0.33-3	Native	●			💧	
Gilia millefoliata	Dark-eyed Gilia	3.1-11.8	Native	●			💧	
Hypericum anagalloides	Tinker's Penny	9.6 in	Native	●			💧	
Lasthenia maritima	Maritime	1	Native	●			💧	
Lasthenia minor	Coastal Goldfields	1.2	Native	●			💧	
Layia platyglossa	Common Tidy Tips	0.5-2	Native	●			💧	
Lepidium lasiocarpum ssp. lasiocarpum	Shaggyfruit Pepperweed		Native	●			💧	
Lepidium nitidum	Peppergrass	1.3	Native	●			💧	
Leptosiphon androsaceus	False Baby Stars	0.16-1	Native	●	◐		💧	
Leptosiphon grandiflorus	Largeflower Linanthus	0.5	Native	●			💧	
Leptosiphon parviflorus	Variable Linanthus	1,6-9.8 in	Native	●			💧	
Limnanthes douglasii	Common Meadowfoam	1.6	Native	●	◐		💧	💧
Lotus purshianus	American Bird's-foot Trefoil	1	Native	●	◐		💧	💧
Lupinus microcarpus var. densiflorus	Dense Flowered Platycarpos	0.33-2.6	Native	●			💧	
Lupinus nanus	Sky Lupine	0.33-2	Native	●			💧	
Madia anomala	Plumpseeded Madia	0.7-1.6	Native	●			💧	
Madia elegans	Spring Madia, Tarweed	0.5-1	Native	●	◐		💧	
Madia sativa	Coast Tarweed	0.7-8	Native	●				
Maianthemum stellatum	False Solomon Seal	2.5	Native		◐	●	💧	
Marah fabacea	Wild Cucumber	18	Native	●			💧	
Mentzelia lindleyi	Blazing Star	1-2	Native	●	◐		💧	
Monardella undulata	Curlyleaf Monardella	0.33-1.6	Native	●			💧	
Nemophila menziesii	Baby Blue Eyes	0.5	Native	●	◐		💧	
Papaver heterophyllum	Wind poppy	1-2	Native		◐		💧	
Phacelia californica	Rock Phacelia	0.5-1.5	Native	●	◐		💧	
Phacelia distans	Wild Heliotrope	0.16-2.6	Native	●			💧	
Phacelia malvifolia	Stinging Phacelia	0.7-3.3	Native					
Phacelia tanacetifolia	Lacy Phacelia	1-4	Native	●			💧	
Phacelia viscida	Phacelia viscida	2.3	Native	●			💧	
Platystemon californicus	Cream cups	0.7-1	Native	●			💧	
Sagina decumbens ssp. occidentalis	Western Pearlwort		Native	●			💧	
Uropappus lindleyi	Uropappus	2.3	Native	●			💧	

Stabilizing	Ecological Services	Landscape typology								Bloom Color	Sensory Interest
	🦋						x	x	x		
	🦋 🐝						x	x	x		
	🦋						x	x	x		
x	🦋						x	x	x		
	🦋						x	x	x		
x	🦋						x	x	x		
	🦋						x	x	x		
	🦋						x	x	x		
	🦋						x	x	x		
	🦋				x	x	x	x	x		
	🦋 🐝						x	x	x		
							x	x	x		
	🐝				x	x	x	x	x		
	🦋 🐝				x	x	x	x	x		
	🐦 🦋 🐝						x	x	x		⚽
x	🐦 🦋 🐝						x	x	x		⚽
	🦋						x	x	x		
	🦋 🐝				x	x	x	x	x		
	🦋			x	x		x	x			
	🦋						x	x	x		
	🦋 🐝				x	x	x	x	x		
	🐦 🦋				x	x	x	x	x		
	🦋				x	x	x	x	x		
	🦋						x	x	x		⚽
	🦋 🐝				x	x	x	x	x		
	🦋 🐝						x	x	x		
	🦋 🐝							x	x		
	🦋 🐝						x	x	x		
	🦋 🐝						x	x	x		
	🦋 🐝						x	x	x		
							x	x	x		
							x	x	x		✋

● Full Sun, ◐ Part Sun, ● Full Shade, 💧 Low Water Use, 💧 Medium Water Use

🐦 Birds, 🐦 Hummingbirds, 🦋 Butterflies, 🐝 Pollinators, 🐝 Moths

Sound, ✋ Tactile, ⚽ Fragrant

Edible Food Gardens

This list includes species suitable for edible food garden plantings within the UCSF Parnassus Heights campus site. Species are listed by broad common name due to the large number of cultivars and hybrids that change each season. The selected species are commonly grown in local community gardens in the Sunset neighborhood, as well as at commercial farms and nurseries in Half Moon Bay.

Food gardens should be located in well-managed areas, such as the hospital terrace, to ensure proper care. These species are suited to full-sun sites, and require proper maintenance and irrigation. Rooftop edible garden sites may help to deter rodents because of the separation from ground habitat.

Note that the plants on the Not Suited for Site Conditions list below would only thrive with significant maintenance or in a greenhouse.

Not Suited for Site Conditions					
Common Name					**Considerations**
Squash					Mildew and mold
Pumpkins					Mildew and mold
Tomatoes					Late blight
Cucumbers					Mildew and mold
Red Peppers					Phytopthora and not enough warmth
Sunflowers					Mildew and mold
Corn					Not enough warmth
Eggplant					Spider mites and not enough warmth
Potatoes					Late blight risk

Common Name	**Sun/Shade**	**Water Use**			**Considerations**
Artichoke	●		●		
Jerusalem Artichoke	●		●		
Strawberries	●		●		
Blueberries	●		●		
Lettuces	●			●	
Beans - fava	●		●		
Carrots	●			●	Carrot borer risk
Beets	●			●	
Broccoli	●			●	Requires mildew treatment
Cabbage	●			●	Requires mildew treatment
Cauliflower	●			●	Requires mildew treatment
Collards	●			●	
Kale	●			●	
Garlic	●	●			
Leeks	●			●	
Kohlrabi	●			●	
Mustard	●			●	
Onions	●		●		
Parsnips	●			●	
Peas	●			●	
Radishes	●			●	
Shallots	●		●		
Spinach	●			●	
Chard	●			●	
Turnips	●	●			
Beans - runner	●		●		
Beans - snap	●		●		
Beans - broad	●		●		
Basil	●			●	
Thyme	●	●			
Tarragon	●	●			
Rosemary	●	●			
Meyer Lemons	●	●			
Raspberries	●		●		
Brussels Sprouts	●			●	Requires mildew treatment

● Full Sun, ● Low Water Use, ● Medium Water Use, ● High Water Use

3.4 List of Recommended Local Nurseries

	Name	E-mail	Contact	Address
1	Bay Native	info@baynatives.com	415 287 6755	10 Cargo Way (at Jennings St.) San Francisco, CA 94124
2	Sutro Nursery	events@sutrostewards.org		476 Johnstone Dr, San Francisco, CA 94131
3	Central Coast Wild	Sheere@centralcoastwilds.com	831 459 0655	336 Golf Club Dr, Santa Cruz, CA 95060
4	Go Native	info@gonativeinc.com	650 728 2286	
5	The Water Shed Nursery		510 234 2222	601 A Canal Blvd, Richmond, CA 94804
6	Yerba Buena Nursery		650 851 1668	12511 San Mateo Road (Highway 92), Half Moon Bay, CA 94019
7	Mission Blue	info@mountainwatch.org	415 467 6631	3435 Bayshore Blvd, Brisbane, CA 94005