

3.2 Plants and Animals

This section of the Draft EIS describes the existing tree conditions on the SPU campus and evaluates the potential impacts from the *Draft MIMP* and EIS Alternatives. This section is based on an Arborist's Report (Tree Solutions, 2021, see **Appendix C**) that was prepared by a certified arborist to provide a high-level analysis of potential impacts to trees based on identified building sites/schematics.

Policy Context

The Seattle Municipal Code (SMC) contains specific provisions that describe the scope of the SEPA analysis for plants and animals. Relevant policies from SMC 25.05.675 are provided below:

N.2. Plants and Animals

- a. *It is the City's policy to minimize or prevent the loss of wildlife habitat and other vegetation which have substantial aesthetic, educational, ecological, and/or economic value. A high priority shall be given to the preservation and protection of special habitat types. Special habitat types include, but are not limited to, wetlands and associated areas (such as upland nesting areas), and spawning, feeding, or nesting sites. A high priority shall also be given to meeting the needs of state and federal threatened, endangered, and sensitive species of both plants and animals.*
- b. *For projects which are proposed within an identified plant or wildlife habitat or travelway, the decisionmaker shall assess the extent of adverse impacts and the need for mitigation.*
- c. *When the decisionmaker finds that a proposed project would reduce or damage rare, uncommon, unique or exceptional plant or wildlife habitat, wildlife travelways, or habitat diversity for species (plants or animals) of substantial aesthetic, educational, ecological or economic value, the decisionmaker may condition or deny the project to mitigate its adverse impacts. Such conditioning or denial is permitted whether or not the project meets the criteria of the Overview Policy set forth in SMC Section 25.05.665.*
- d. *Mitigating measures may include but are not limited to:*
 - i. *Relocation of the project on the site;*
 - ii. *Reducing the size or scale of the project;*
 - iii. *Preservation of specific on-site habitats, such as trees or vegetated areas;*
 - iv. *Limitations on the uses allowed on the site;*
 - v. *Limitations on times of operation during periods significant to the affected species (i.e., spawning season, mating season, etc.); and*
 - vi. *Landscaping and/or retention of existing vegetation.*

Regulatory Context

Seattle Municipal Code Chapters 25.05, 25.09, and 25.11; and Director's Rule 16-2008 establish the City's tree protection regulations on private property and in and adjacent to designated critical areas. Chapter 25.05 establishes SEPA policies for determining the value of outstanding trees that are subject to an environmental review process. Site planning around trees in or adjacent to critical areas must follow the requirements outlined in SMC 25.09.070. Chapter 25.11 is the City's tree protection code and provides the means for protecting Exceptional Trees by establishing a regulatory framework, identifying restrictions on tree removal, and containing key provisions for Exceptional Trees. DR 16-2008 clarifies the definition of Exceptional Trees, includes size thresholds for various species of Exceptional Trees, and clarifies SEPA policies relative to a determination of value for outstanding trees.

A key to the City's tree regulations is whether a tree is "Exceptional." Based on DR 16-2008, Exceptional Trees should be considered during environmental assessment when development has the potential to reduce or damage "rare, uncommon, unique or exceptional plant or wildlife habitat" or "habitat diversity for species (plants or animals) of substantial aesthetic, educational, ecological or economic value".

3.2-1 Existing Conditions

Background

Urban trees and plants are valued for the ecosystem services that they provide, such as energy conservation by reducing summer energy costs by shading buildings and combating the urban heat island effect, carbon sequestration, air quality enhancement, and stormwater mitigation. Additionally, they are valued for the social services they provide, including their effects on the health and wellness of humans, as well being increasingly valued for their wildlife habitat potential.¹

Typically, groups of trees provide higher quality habitat and have a higher ecological value than individually spaced trees not only due to the trees, but also to the forested understory. Large individual 'exceptional' trees also provide habitat and ecological value, however, depending on the surrounding trees and landscaping their influence may be dispersed. Additionally, young trees are better able to adapt to construction disturbances than mature exceptional trees and can provide replacement canopy as mature trees decline.

Native mature trees and plants enhance wildlife habitat by providing nesting and hiding cover, food, and safe travel corridors. Urban wildlife residents of mature/exceptional trees include birds, small mammals, amphibians and reptiles, arachnids, and insects. Each of these animals finds shelter from predators and weather in the insulated nooks of these trees. Additionally, plants, lichens, and fungi may use a tree as a growing substrate or food source. Birds may use dead branches on the tree as a perch from which to sing or hunt or use a cavity as a place to roost or nest. Secondary cavity-nesters, such as bluebirds and squirrels use natural cavities, or the vacant cavities previously excavated by woodpeckers (primary cavity-nesters.) Birds, such as bats, may also inhabit the protected spaces behind loose or sloughing bark. Amphibians and reptiles take advantage of cracks as both a safe hiding place and hunting grounds for insects.¹

Retaining trees and other vegetation on steep slopes helps strengthen and retain the integrity of the hillside. Trees, shrubs, and groundcovers can maintain slopes and reduce erosion from surface water and shallow groundwater. Evergreen trees and other vegetation are most valuable and able to protect soil and remove water during the winter months when deciduous plants are dormant. A diverse mix of both evergreen and deciduous plants provides the greatest protection. Trees/plants can also have value as sight and sound barriers and discourage access to hazardous areas. Once established, native trees/plants require little maintenance or care².

¹ <https://ufi.ca.uky.edu/wildlife-habitat-tree>

² *Value, Benefits and Limitations of Vegetation in Reducing Erosion*. Prepared for the Coastal Training Program by Greenbelt Consulting. 2004.

Existing Conditions on Campus

Tree species on the existing SPU campus are varied and include natives, ornamentals, and invasive species. The three most common tree species were bigleaf maple (*Acer macrophyllum*), red maple (*Acer rubrum*), and Leyland cypress (*Cuprocyparis leylandii*), at 10.8 percent, 7.2 percent, and 5.1 percent respectively. The understory is a mix of native, ornamental, and invasive plants, such as invasive ivy (*Hedera* spp.), Himalayan blackberry (*Rubus bifrons*), and bindweed (*Convolvulus* spp.) located throughout the campus.

In total, there are 1,069 trees within the existing MIO campus boundary, of which 802 are estimated to be on private property, which is regulated by the Seattle Department of Construction and Inspection (SDCI). The remaining 266 trees are estimated to be growing partially or fully in the right-of-way, and these Street Trees are regulated by the Seattle Department of Transportation (SDOT). The tree survey also identified 252 'exceptional' trees on the existing SPU campus, of which 121 are 'exceptional' by size.

There are several exceptional tree groves within the existing campus boundary. Exceptional groves were determined by drawing the measured driplines of all trees 8-inches diameter at standard height (DSH) on a map and assessing whether at least eight trees had overlapping canopies. There are a total of 252 exceptional trees within the 2000 MIO boundary. One hundred and fifty-eight (158) of the exceptional trees are growing within exceptional groves, 27 of which are also exceptional by size. There are a total of 121 trees within the existing SPU Campus that are exceptional by size.

According to SDCI's GIS map there are two environmentally critical areas (ECAs) distributed across much of the campus. There are numerous Steep Slope (40% average)-ECA 1 areas on campus, as well as large portions of the site that are classified as Potential Slide Areas – ECA2. There are also areas along the ship canal that are within the shoreline buffer area for the Lake Washington Ship Canal. Within the existing SPU campus there are a total of 580 trees within a steep slope ECA, steep slope buffer, or potential slide area ECA; 182 of which are located within both a steep slope ECA/steep slope buffer and a potential slide area ECA. There is one tree within the shoreline buffer area.

Other than the ECAs described above, the SPU Campus does not contain any other special habitat types or areas, such as wetlands and associated areas (e.g., upland nesting areas), or spawning, feeding, or nesting sites. Additionally, no state- and/or federally-listed threatened, endangered, or sensitive plant or animal species have been identified on campus. **Verify this statement**

Please refer to the *Arborist's Report* in **Appendix C** to this Draft EIS for more detailed information about existing conditions on campus and each individual tree that has been inventoried on the SPU campus, as well as for tree location maps.

Table 3.2-1

Summary of Tree Totals

	Site Trees (private property)	Street Trees (ROW)	Total Trees	Number of Exceptional Trees (Groves and/or by Size)	Number of Trees w/in an ECA	Number of Trees w/in Shoreline Buffer
Within Existing MIO Boundary	802	266	1068	252	580	1
Within MIO Boundary Expansion Areas	102	56	158	15	79	29
Total Trees	904	322	1227	267	659	30

Source: Tree Solutions, 2022

3.2-2 Impacts of the Proposed Action (Draft MIMP)

Summary of Potential Impacts

The *Draft MIMP* results in the potential for fewer trees to be removed than under *Alternatives 2-5*, as it is largely proposing construction in areas that are already dominated by existing hardscapes and buildings. *Alternative 2* has the potential for the highest overall tree removal and the greatest number of exceptional tree removals. Additionally, *Alternatives 2* and *3* have the potential to remove some of the most iconic trees in the Tiffany Loop area. *Alternative 1* results in the lowest tree removal numbers as there is comparably little proposed development. Potential project #2 in the *Draft MIMP* has the potential to impact the largest number of exceptional grove trees depending upon the final placement and size of the building. Please see **Table 3.2-2** below for a summary comparison of the potential number of trees removed under the *Draft MIMP* and each alternative. A more detailed discussion on the *Draft MIMP* and each alternative follows the table.

Table 3.2-2
Summary of Potential Tree Removals by Alternative

	Total Number of Trees Removed	Total Number of Exceptional Trees Removed (Groves and/or by Size)	Total Number of Trees Removed in All ECAs	Total Number of Trees Removed w/in the Shoreline Buffer Area
<i>Draft MIMP</i>	250	47	154	1
<i>Alternative 1</i>	51	19	35	0
<i>Alternative 2</i>	279	65	167	0
<i>Alternative 3</i>	275	56	170	1
<i>Alternative 4</i>	267	55	159	0
<i>Alternative 5</i>	266	52	165	1

Source: Tree Solutions, 2022

In Process:

1. A site plan (and subsequent analysis) that consists of overlaying trees, ECAs, and proposed building footprints. It will also differentiate street trees from exceptional trees/groves. The site plan will endeavor to identify trees by health and map trees/areas of value. It will also show exceptional trees that will potentially be impacted/removed to accommodate development described in the *Draft MIMP*.

Proposed Action – Draft MIMP

Under the *Draft MIMP* three boundary adjustments are proposed in the northwest, east and southeast areas of campus and height increases are proposed in areas within the expanded MIO boundary (see **Figure 2-5**). These expansion areas, as well as the public ROW within these areas, would add approximately 18 acres to SPU's existing MIO boundary for a total MIO boundary area of 84 acres. The tree survey identified approximately 158 trees within the three proposed MIO boundary expansion areas. Of these trees, 102 are estimated to be on private property, which is regulated by SDCI, and the remaining 56 are estimated to be growing partially or fully in the right-of-way, which is regulated by SDOT. Of the 158 total trees, 15 meet the size threshold to be considered as 'exceptional' trees. Within the 2021 MIO expansion areas there are a total of 79 trees within a steep slope ECA, steep slope buffer, or potential slide area ECA; 12 of these trees are located within both a steep slope ECA/steep slope buffer and a potential slide area ECA; and there are 29 trees located within the shoreline area.

Overall, buildout of all planned and potential development projects under the *Draft MIMP* would result in approximately 2,259,600 gross sq. ft. (gsf) of new construction. Minus approximately 471,000 sq. ft. of demolition, this would result in approximately 1,788,600 gsf of *net new* development on the SPU campus. Development and potential demolition projects on the SPU Campus would affect existing trees and vegetation on-site as a result of disturbance associated with demolition and new construction activities. Progressive urbanization of the campus would result in the loss of some existing trees/vegetation/habitat and replacement of landscaped areas.

There are three (3) planned projects and 47 potential projects that could be developed on SPU's campus under the *Draft MIMP* (refer to **Figures 2-6** and **2-7**). For new buildings and building additions constructed under the *Draft MIMP*, it is assumed that trees/plants that are within the building footprints or that are directly adjacent to proposed buildings would require removal³.

Planned Projects – there are three (3) planned projects (refer to **Figure 2-6** for project locations): an expanded Student Center, demolition of Marston Hall (Marston Site Future Open Space), and renovation of Moyer Hall.

- Construction of the expanded Student Center would potentially require removal of approximately 24 trees, three of which would be classified as 'exceptional', and 15 of which would be located within a steep slope ECA/steep slope buffer or a potential landslide area ECA.
- Demolition of Marston Hall to create a Future Open Space Area has the potential to impact approximately 8 trees that have canopies that are touching Marston Hall. Tree protection must be in place and demolition would have to occur very carefully to preserve these trees. It is likely that these trees would have to be pruned in order to minimize disturbance during demolition. Additionally, it is also possible that some of these trees would have to be removed during demolition.

³ Tree removals listed are an estimate; specific tree removal and retention numbers for each building must be revised based on design and construction plans for each project prior to construction.

- Renovation of Moyer Hall would involve interior renovation of an existing building and would have no substantial impacts to trees.

Potential Projects – there are 47 potential projects (refer to **Figure 2-7** for project numbers and locations): four projects (Buildings 1, 10, 30 and 34) would be additions to existing buildings and four projects (Buildings 13, 23, 24 and 25) would be renovations. The remaining projects would consist of new buildings.

In total, construction of potential projects under the **Draft MIMP** would be estimated to result in the removal of approximately 250 trees, 47 of which are ‘*exceptional*’ by size and/or their location within a grove. A total of 154 of the 250 trees proposed for removal are located within a steep slope ECA/steep slope buffer and/or a potential landslide area ECA. One of the trees proposed for removal is located within the shoreline area. Renovation projects would have the least impact on existing trees, likely leading to little or no impact on tree retention. Structured parking areas, surface parking areas, and a number of underground parking structures associated with new buildings are also proposed under the **Draft MIMP**; these proposed structures/areas would also necessitate the removal of trees (refer to **Figure 2-8** for project references and locations).

Removal of trees/vegetation on campus would result in a reduction of urban wildlife habitat on campus, and the aesthetic, ecological, and intrinsic human health/wellness value associated with this habitat. Each proposed/potential development project that is built on campus would be required to replace trees that are removed and to provide new landscaping on campus, which would help to mitigate the short-term impact of this loss of habitat. However, increased site density will likely result in more challenges for space for larger maturing trees, which are highly encouraged over smaller ornamental varieties.

Please refer to the *Arborist’s Report* in **Appendix C** to this Draft EIS for details concerning specific trees that might need to be removed under each potential project.

3.2-3 Impacts of the Alternatives

Alternative 1 – No Action Alternative

This alternative retains the current MIO boundary and proposes two new Education & General buildings that could be developed consistent with the existing MIMP (refer to **Figure 2-12** for building references and locations). Demolition and construction activities associated with these proposed buildings could potentially require the removal of approximately 51 trees, 19 of which are classified as ‘*exceptional*’ due to size and/or location within a grove. A total of 35 of the 51 trees proposed for removal are located within a steep slope ECA/steep slope buffer and/or a potential landslide area ECA. None of the trees proposed for removal is located within the shoreline area. These activities could also potentially impact the overhanging canopy from three integral trees in Tiffany Loop, therefore careful construction methods would be required in order to retain these trees. This alternative would not involve removal of Marston Hall, which would result in less open space in the future in this area.

The **No Action Alternative** involves the least tree and habitat removal as little construction is planned.

Please refer to the *Arborist's Report* in **Appendix C** to this Draft EIS for details concerning specific trees that might need to be removed under this alternative.

Alternative 2 – No Boundary Expansion and No Change to Height Limits

This alternative retains the existing MIO boundary and existing height limitations across campus. Under ***Alternative 2***, additional buildings would need to be constructed within the current MIO boundary in order to accommodate the same number of students, faculty, and staff and the same amount of campus development as that proposed as part of the ***Draft MIMP*** (see **Figure 2-13**). As a result, potential impacts to trees and habitat under this alternative would be greater than those described under the ***Draft MIMP*** due to the fact that there would be a larger number of buildings constructed within the existing MIO boundary under ***Alternative 2***. For example, under this alternative, buildings are proposed along the southeastern, northeastern, and western edges of Tiffany Loop, which would require the removal of some of the largest and most prominent trees on the campus. In total, demolition and construction activities associated with planned and potential projects under ***Alternative 2*** could potentially require the removal of an estimated 279 trees, of which 65 are 'exceptional' by size and/or location within a grove. A total of 167 of the 279 trees proposed for removal are located within a steep slope ECA/steep slope buffer and/or a potential landslide area ECA. None of the trees proposed for removal is located within the shoreline area. Further, with the addition of so many extra buildings within the current MIO boundary under this alternative, there would be less open space in the areas near 6th Avenue W north and south of W Dravus Street, near central campus west of Tiffany Loop, and near W Cremona Street in the eastern portion of campus, which would also result in fewer opportunities to plant new trees on campus as compared to that provided by the ***Draft MIMP***.

Alternative 2 involves the most tree and habitat removal, more than that proposed under the ***Draft MIMP***, as a greater number of buildings are planned for construction on campus under this alternative.

Please refer to the *Arborist's Report* in **Appendix C** to this Draft EIS for details concerning specific trees that might need to be removed under this alternative.

Alternative 3 – Boundary Expansion and No Change to Height Limits

Under ***Alternative 3***, three boundary adjustments would occur in the northwest, east and southeast areas of campus, but the existing height limitations across campus are retained. Under this alternative, far fewer additional buildings would need to be constructed within the expanded MIO boundary as compared to that under ***Alternative 2*** (see **Figure 2-14**). As a result, potential impacts to trees under this alternative would be similar to those described under the ***Draft MIMP*** but less than those described under ***Alternative 2***. For example, under this alternative, buildings would be provided only along the eastern and western edges of Tiffany Loop, which would still require the removal of some trees in the Loop, but fewer of these trees would need to be removed. In total, demolition and construction activities associated with planned and potential projects under ***Alternative 3*** could potentially require the removal of an estimated 275 trees, of which 56 are 'exceptional' by size and/or location within a grove. A total of 173 of the 275 trees proposed for removal are located within a steep slope ECA/steep slope buffer and/or a potential landslide area ECA. One of the trees proposed for removal is located within the shoreline area. Further, with the addition of several extra buildings on campus under this alternative, there would be less open space in the areas near 6th Avenue W north and south of W Dravus Street, near central campus west of Tiffany Loop, and near W Cremona Street in the eastern portion of campus, which

would also result in fewer opportunities to plant new trees on campus as compared to that provided by the *Draft MIMP*.

Alternative 3 involves a similar amount of tree and habitat removal as that proposed under **Alternative 2**, and more than that proposed under the *Draft MIMP*, as a greater number of buildings are also planned for construction on campus under this alternative.

Please refer to the *Arborist's Report* in **Appendix C** to this Draft EIS for details concerning specific trees that might need to be removed under this alternative.

Alternative 4 – No Boundary Expansion and Increased Height Limits

This alternative retains the existing MIO boundary, but height increases are proposed in some areas within the existing campus. Under this alternative, far fewer additional buildings would need to be constructed within the current MIO boundary as compared to that under **Alternative 2** (see **Figure 2-15**). As a result, potential impacts to trees under this alternative would be similar to those described under the *Draft MIMP* but less than those described under **Alternative 2**. For example, there are no buildings proposed near Tiffany Loop, so removal of these iconic campus trees would not be required under this alternative. In total, demolition and construction activities associated with planned and potential projects under **Alternative 4** could potentially require the removal of an estimated 267 trees, of which 55 are 'exceptional' by size and/or location within a grove. A total of 159 of the 269 trees proposed for removal are located within a steep slope ECA/steep slope buffer and/or a potential landslide area ECA. None of the trees proposed for removal is located within the shoreline area. Further, with the addition of several extra buildings on campus under this alternative, there would be less open space in the areas near 6th Avenue W north and south of W Dravus Street, and near W Cremona Street in the eastern portion of campus, which would also result in fewer opportunities to plant new trees on campus as compared to that provided by the *Draft MIMP*.

Alternative 4 involves slightly less tree and habitat removal than that proposed under **Alternatives 2** and **3**, but still more than that proposed under the *Draft MIMP*, as a greater number of buildings are also planned for construction on campus under this alternative.

Please refer to the *Arborist's Report* in **Appendix C** to this Draft EIS for details concerning specific trees that might need to be removed under this alternative.

Alternative 5 – Boundary Expansion, Increased Height and No Street/Alley Vacations

Similar to that proposed under the *Draft MIMP*, under **Alternative 5**, three boundary adjustments would be provided in the northwest, east and southeast areas of campus, height increases are proposed in areas within the expanded MIO boundary, but existing streets and alleys proposed for vacation in the *Draft MIMP* are retained in their current state. Under this alternative, far fewer additional buildings would need to be constructed within the MIO boundary as compared to that under **Alternatives 2-4** (see **Figure 2-16**). As a result, potential impacts to trees under this alternative would be similar to but slightly greater than those described under the *Draft MIMP*. In total, demolition and construction activities associated with planned and potential projects under **Alternative 5** could potentially require the removal of an estimated 266 trees, of which 38 are 'exceptional' by size and/or location within a grove. A total of 100 of the 266 trees proposed for removal are located within a steep slope ECA/steep slope buffer and/or a potential landslide area

ECA. One of the trees proposed for removal is located within the shoreline area. Further, with the absence of ROW vacations under this alternative, there would be less open space in the areas near 6th Avenue W south of W Dravus Street, near central campus west of Tiffany Loop, and near W Cremona Street in the eastern portion of campus, which would also result in fewer opportunities to plant new trees on campus as compared to that provided by the *Draft MIMP*.

Alternative 5 involves slightly more tree and habitat removal than that proposed under the *Draft MIMP*, as far fewer additional buildings would need to be constructed within the MIO boundary as compared to that under *Alternatives 2-4*.

Please refer to the *Arborist's Report* in **Appendix C** to this Draft EIS for details concerning specific trees that might need to be removed under this alternative.

3.2-4 **Mitigation Measures**

- Site planning around exceptional trees would follow the requirements outlined in SMC 25.11.050, 25.11.070, 25.11.080 and 25.11.090, which outlines replacement requirements for exceptional trees and trees over 24 inches that are removed for development.
- Site planning around trees in environmentally critical areas (ECAs) would follow the requirements outlined in SMC 25.09.070, which requires mitigation sequencing at project review. Mitigation for lost tree canopy in developed areas of the site could likely include restoration and planting in the steep slope areas.
- All pruning required for construction clearance must be performed by an ISA certified arborist conforming to current ANSI A300 standards.
- Prior to construction the exact locations of trees would be surveyed, and plans would be reviewed by an arborist to determine impacts to trees, final retention numbers, and locations with respect to specific ECAs. It is possible that utilities, demolition, grading, and revised building footprints could have a considerable impact on overall tree retention. Considering tree retention throughout the design and development phase would lead to an increase in overall tree retention, avoid unnecessary tree removal, and ensure that trees with high retention value can be protected.
- Alternative designs that would better maximize tree retention and urban wildlife habitat by shifting proposed buildable areas around existing trees/groves on campus should be studied further in the *Draft MIMP*.
- The *Draft MIMP* could include "Tree Preservation" Design Guidelines or develop tree standards/guidelines regarding construction activities and trees, to ensure that trees with high retention values and trees that are in good condition/health be considered for retention and protection, as well as maximizing mature tree retention around the perimeter of the site, within groves, and within ECAs (steep slope areas especially).
- When developing the campus, the locations of groves in particular, individual exceptional trees, and other trees of all sizes should be taken into consideration to ensure a diversity of size, age, and species on campus.

- Increasing tree species diversity is important to urban forest resiliency. New plantings should strive to increase diversity throughout the campus and should avoid bigleaf maple (*Acer macrophyllum*), red maple (*Acer rubrum*), and Leyland cypress (*Cuprocyparis leylandii*) species since they already make up the majority of tree species on campus. Red maple can be an especially problematic species in urban areas due to a large concentration of surface and girdling roots, as well as narrow branch unions that are more prone to failure.
- The exceptional grove to the east of Potential Project #2 in the *Draft MIMP* should be taken into consideration when finalizing the design for the proposed building.
- Each proposed/potential development project that is built on campus would be required to replace trees that are removed and to provide new landscaping on campus, which would help to mitigate the short-term impact of this loss of habitat.

3.2-5 Significant Unavoidable Adverse Impacts

As indicated in this section, certain existing trees and/or habitat on campus could be removed or affected by adjacent ground disturbance during construction. With implementation of proposed mitigation measures noted above, no additional significant unavoidable adverse impacts to plant species on-site or proximate to the site are anticipated under the *Draft MIMP*.

Under *Alternative 2* and *Alternative 3*, buildings are proposed along the southeastern, northeastern, and western edges of Tiffany Loop, which would require the removal of some of the largest and most prominent trees on the campus.