# APPENDIX B—SPECIES SELECTION CRITERIA

When selecting tree species to use on a Project, use the "principle" of "Right Tree Right Place". Basically, this means select a tree that works for the space after considering all applicable selection criteria. The reason this is so critical is that most of the tree "conflicts" with other infrastructure can be traced back to having selected and planted a tree that was ill-suited for the space in which it was planted. At the same time, it is highly recommended to "alter" the space whenever possible. A good example of this is cutting out existing concrete to create a larger grow space for trees. This, in fact, is precisely what was recommended and has/is being done during the implementation of Opportunity #1.

The following is a list of criteria that should be used when selecting tree species for any project, including those "opportunities" that include tree planting of any kind as described in this Plan:

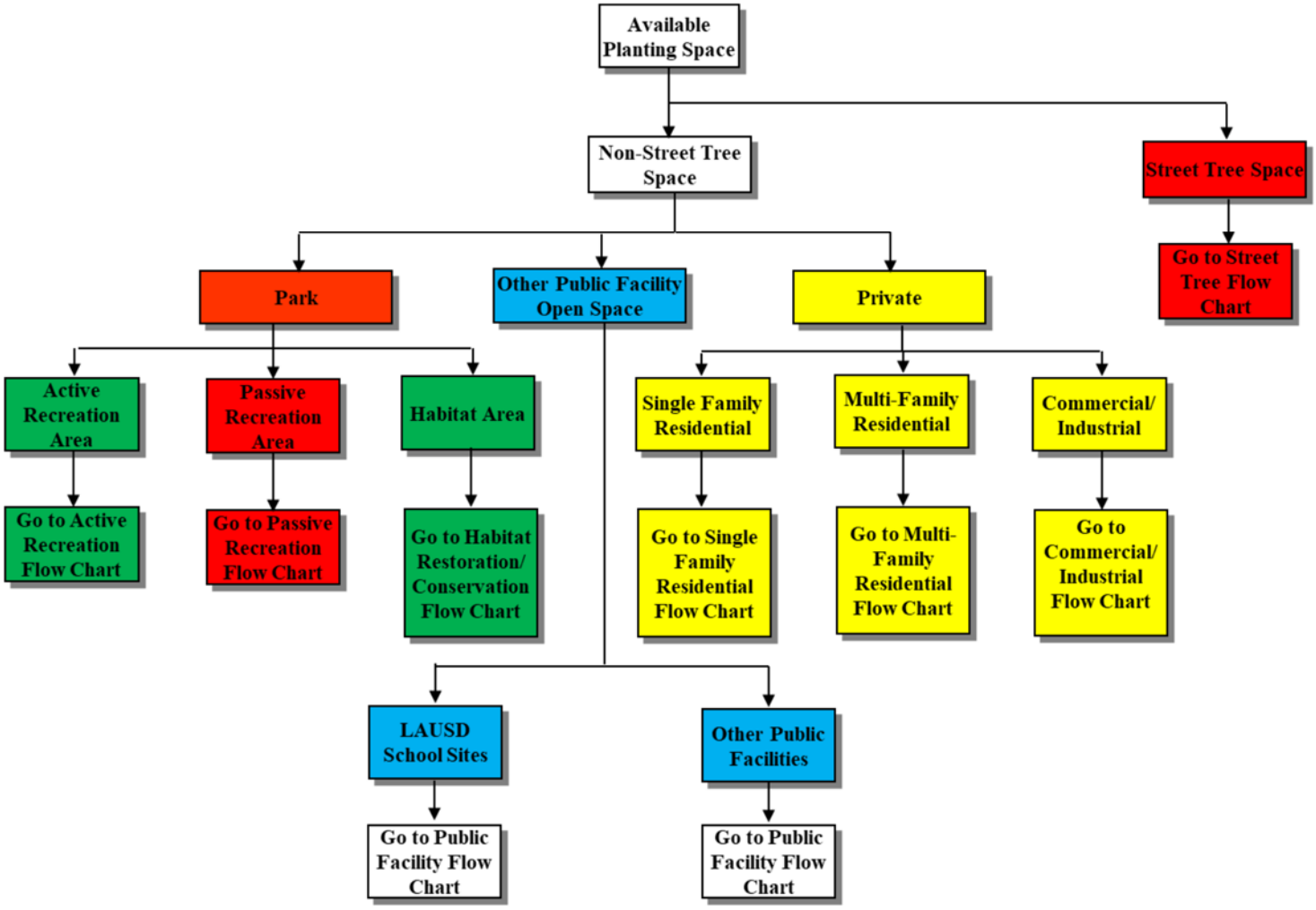
1. Street trees vs. Open Space trees—what is the land use of the land on which you are planting the tree(s)? This will have an important bearing on the functions or "services" you expect the tree to perform. It will also point you to the requisite design criteria and permitting requirements to plant your trees.
2. Grow Space—this refers to the ground area in which you are planning to plant your trees, and correlates with the amount of soil that will be available for tree roots to grow into. The larger and better quality spaces can accommodate larger stature (refers to the maximum height the tree will reach at maturity) trees. Larger trees generally provide more environmental benefits, so this is important.
3. Infrastructure— this refers to the overhead, at ground level and underground infrastructure, i.e., wires, light, power, and traffic signals & signage, pipes, concrete and other hardscape, utility vaults & boxes, buildings and building signage. It also refers to the need to maintain certain height clearances for pedestrians, bicyclists and vehicles. All public spaces have design criteria that must be met related to clearances of trees—canopy, roots and trunks— from this infrastructure.
4. Safety, Wind, Fire— Safety considerations are linked to maintaining the required clearances from existing infrastructure, but also addresses the presence of people around and under trees, e.g, playgrounds, picnic areas. The most important characteristic in those instances is to select trees with strong branch attachments. In other words, the trees selected should not be prone to branches falling in moderate to high winds expected in the area. Wind refers to the ability of tree species to function well as a windbreak. Fire refers to evaluating the risk of the tree species to burn in a fire and where the trees are located on fire prone property relative to buildings and land use.
5. Climate Zone—This refers to the "Sunset Western Garden" Climate Zones. See http://www.sunset.com/garden/climate-zones/. There are three (3) climate zones within the San Pedro area. They are: Zones 22, 23, 24. It is recommended to select tree species that are adapted to grow well in these Zones.
6. Invasive tree species—The rule here is: DO NOT SELECT KNOWN INVASIVE TREE SPECIES.
7. Species Diversity—This refers to the number of different tree species that are planted/present in a given community. The greater number the better. This is because too much dependence on one or a few species in an areas makes the urban forest population vulnerable to catastrophic loss if hit by a pest or disease. Therefore, it is always best to have a diverse tree species palette. As can be seen in Appendix A, the recommendations in this Plan do provide for that.
8. Pest and Disease Issues— The basic principle to apply here is to avoid selecting tree species that have known serious pest and/or disease problems. However, this needs to be handled judiciously through consultation with local tree experts, such as Certified Arborists or Consulting Arborists. This is because it is important to consider the latest scientific information available with the Arboriculture profession before categorically eliminating use of particular tree species—SEE DISCUSSION IN OPPORTUNITY #2 SECTION OF THIS PLAN FOR MORE INFO.

9. Availability at nurseries— This is here to make sure that tree species you wish to use on a given project are actually available at tree nurseries in the quantities you need when you need them. This can be tricky for projects with a long lead time from concept design to construction documents to construction because it can be several years from the time you select trees in a design before they will be planted at the end of a construction project. Nevertheless, it is highly recommended to check in with several nurseries about whether they are and will continue to grow the species you want to use on your project.
10. Water Needs– This is pretty obvious, and is especially important in that Southern California, and San Pedro, in particular has recently gone through a prolonged drought period, and because the region is generally considered to be semi-arid to begin with. This is where selecting species that are native or indigenous to the region is highly advisable. However, there are nuances to application of this criteria. As an example, trees planted on south or west facing slopes in a more inland area will experience a different micro-climate than those planted in riverine or riparian areas on north and east facing areas. It is also important to consider whether there will be a supplemental "smart" irrigation system to support the trees, and what kind of water source will be used. For example, recycled water is likely to become more available in the future (SEE OPPORTUNITIES #31 & 32). As this water often has a higher salt content relative to potable water, you will need to select tree species that are more salt tolerant when using such water.
11. Tree Function— This refers to the function(s) you expect the trees to provide for your project. This commonly is shade, but can include "greenhouse gas reduction" (GHG)/energy conservation, erosion control, habitat restoration, water conservation/storm water flow mitigation, and/or fruit production.
12. Leaf, Seed, & Fruit Drop— All trees, even evergreen trees, drop things. These can be leaves, fruit, or flowers. It is important to UNDERSTAND YOUR PROJECT LOCATION. If you are planting trees someplace where flower or fruit drop could be considered a nuisance, you need to either adequately provide for timely removal and, hopefully, recycling of this material, or select a species with less of this material drop. As this material is often a good source of natural mulch we recommend allowing this material to remain on the ground in either "unimproved" (wild) or passive recreation open space applications.
13. Beautification— This is the most visually compelling reason to plant trees. Seasonal flower displays, size and shape of the tree canopy, leaf color, evergreen vs. deciduous and fall leaf color displays are call important considerations. The tree size relative to the scale of the street environment is another one. Using trees to screen unsightly views is another important consideration.

The following pages illustrate some tree selection flow charts that apply some of the selection criteria described above. This is not meant to be all inclusive, but rather just some examples of how to apply the criteria while selecting tree species for you projects.

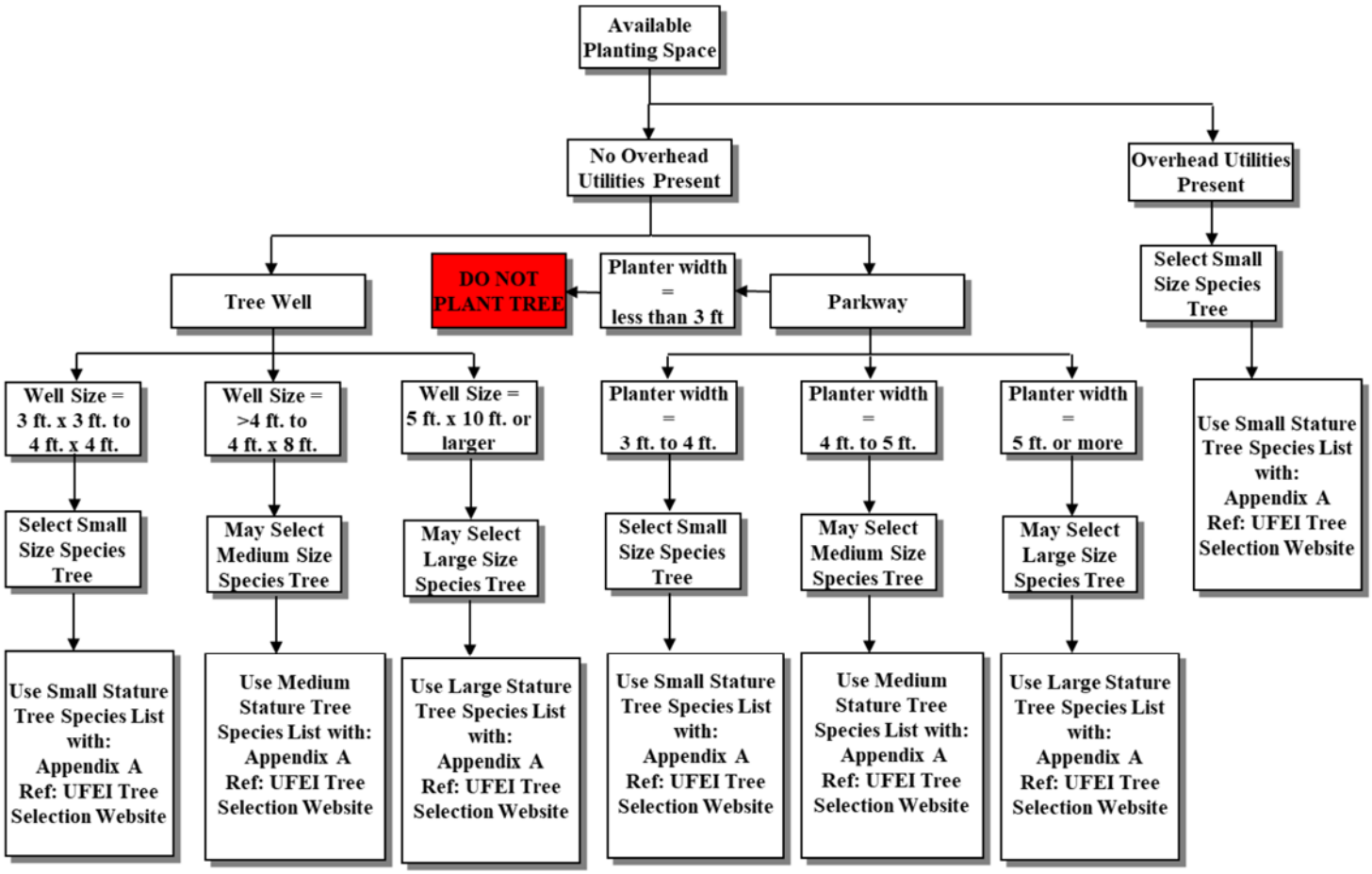
## APPENDIX B—SPECIES SELECTION CRITERIA

The flowchart on this page just shows the possible decision trees that can be created to facilitate the selection of tree species for different types of land use situations. The two (2) shown in red are shown in greater detail on the next two pages.



## APPENDIX B—SPECIES SELECTION CRITERIA

This is the flowchart "decision tree" created for street trees in San Pedro. The primary decision point is the size of the grow space, which determines whether the locations are suitable for small vs. medium vs. large stature trees. The species list in Appendix A contains trees that fall into all of those categories. The remaining criteria to use to finalize your selection can be found in the preceding pages of this Appendix B. UFEI refers to the "Urban Forest Ecosystems Institute SelecTree Tree Selection Guide" website, https://selectree.calpoly.edu. The criteria shown on the preceding pages can be used to refine your search for suitable trees for street tree locations, as well as the other types of locations shown on the flowchart on the preceding page and the following page.




SAN PEDRO GREEN OUTLETS & PATHWAYS

## APPENDIX B—SPECIES SELECTION CRITERIA

The flowchart on this page can be used for selecting suitable trees for parks or open space type sites, and illustrates the kind of distinctions that can be made when choosing trees for picnic areas vs. walking trails vs. bicycle trails vs. equestrian trails vs. parking lots. In all such locations large stature trees can be considered suitable because the grow space available is more than adequate for the placement of such trees. Once again the other criteria shown earlier in this Appendix should be used in conjunction with the UFEI website to refine your search.