PARK TREES OF TOMORROW

PLANNING FOR THE FUTURE TREE CANOPY OF:

CARROLL PARK





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INTRODUCTION

WHY DO WE NEED THIS PLAN?

Trees are often the defining feature of our city parks. Parks are where most Philadelphia residents get to experience being among trees and experience the many physical and mental health benefits they provide. Our park trees are part of what make our city livable and lovable.

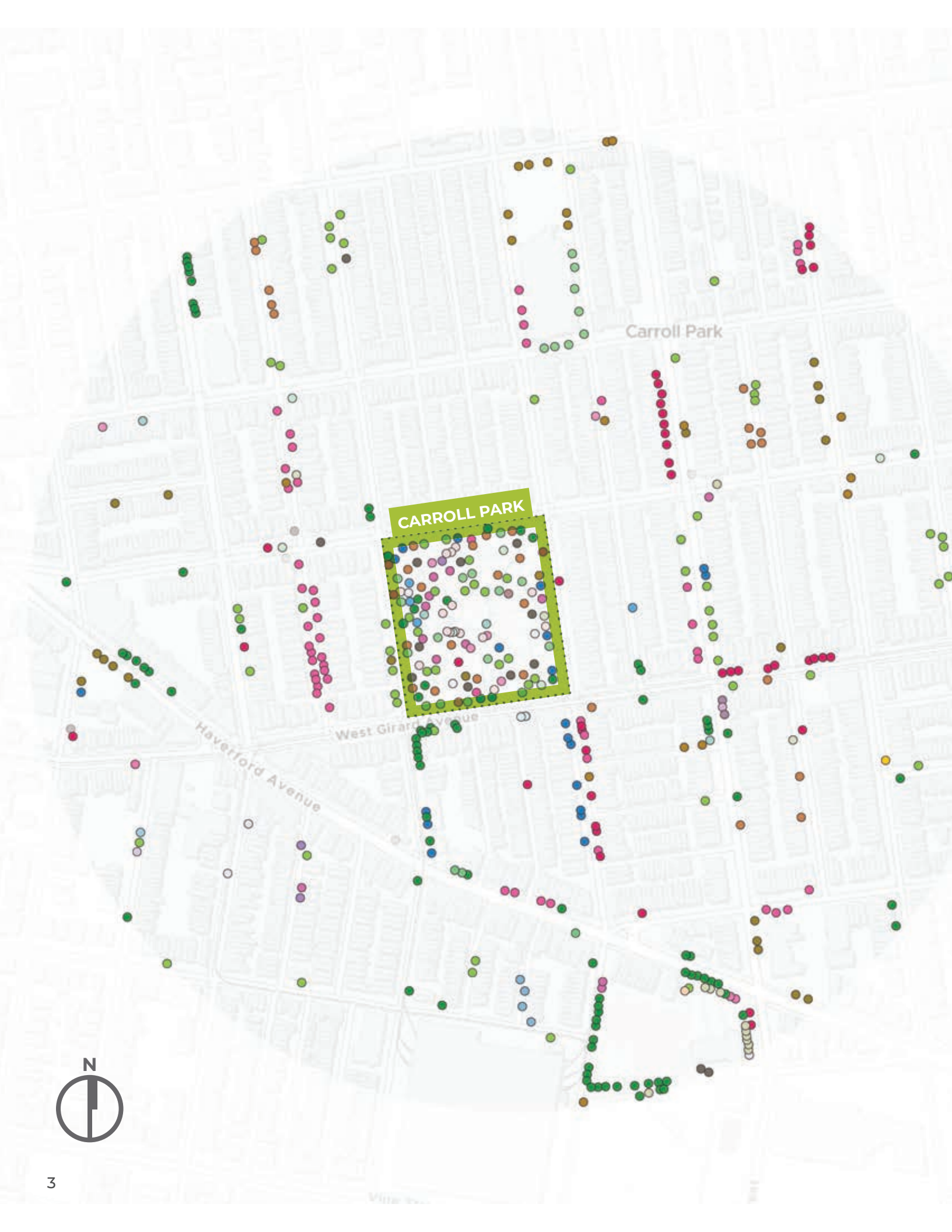
Many of the trees in our parks are mature and aging, making it important to plan now for the next generation of trees. Without a thoughtful plan for the future of our park trees there is a risk that a park may lose many trees at once, affecting how the park feels and functions for decades.

This plan is a guide for Park Friends groups to help them make decisions about what trees to plant and where. It provides a long term vision for the park with recommendations on how to achieve that vision slowly and sustainably. This plan also includes best practices for caring for newly planted trees, along with resources to help volunteer organizations achieve this vision.



THE PLANNING PROCESS

Fairmount Park Conservancy and Philadelphia Parks & Recreation led a consultant team and met with members of the Park Friends group and representatives from the local Registered Community Organization, elected officials, and federal agencies to develop a plan that both responds to the needs of the community and reflects best practices in arboriculture and urban forestry.


CARROLL PARK
Carroll Park
West Girard Avenue
Haverford Avenue
N

PLANNING CONSIDERATIONS

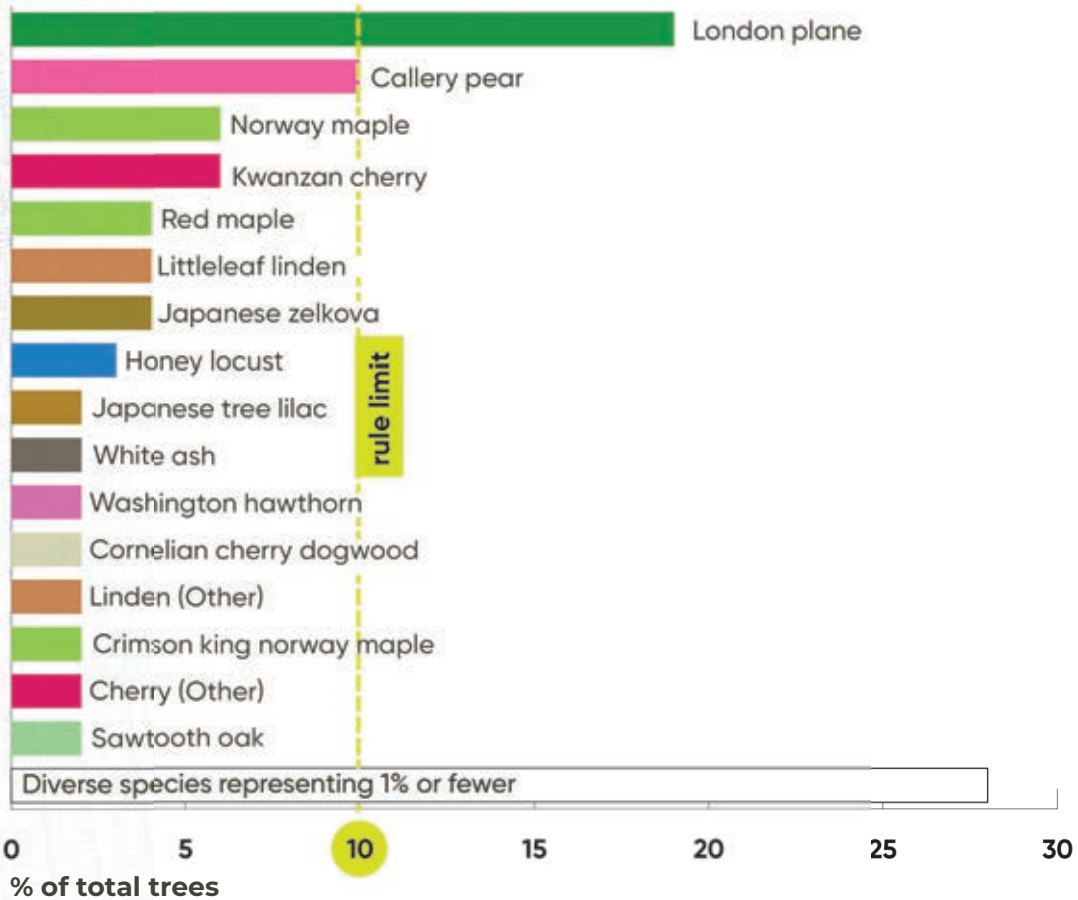
SPECIES DIVERSITY IS IMPORTANT

Species diversity is critical for the resilience of the community of trees in the city that we call the urban forest. Diseases like Dutch Elm Disease killed so many of the large elm trees that used to line so many American streets. The Emerald Ash Borer Beetle is now threatening to kill every ash tree on the east coast. We do not know what the next major threat will be to our urban forest. More diversity means we have a better chance of keeping most of the trees even if a disease or insect threatens a specific family or species of trees.

Trees, and all living things can be divided by family, genus, and species. As an example, cherry trees are in the family rosaceae (that also includes apple trees and roses), the genus Prunus (which includes all cherry types, peaches, and plums), and species (which is a specific tree like chokecherry or Prunus virginiana) The best practice for measuring diversity is for a forest to have:

- Less than **30% of a single family**
- Less than **20% of a single Genus**
- Less than **10% of a single species**

TREE SPECIES DIVERSITY IN THE SURROUNDING NEIGHBORHOOD

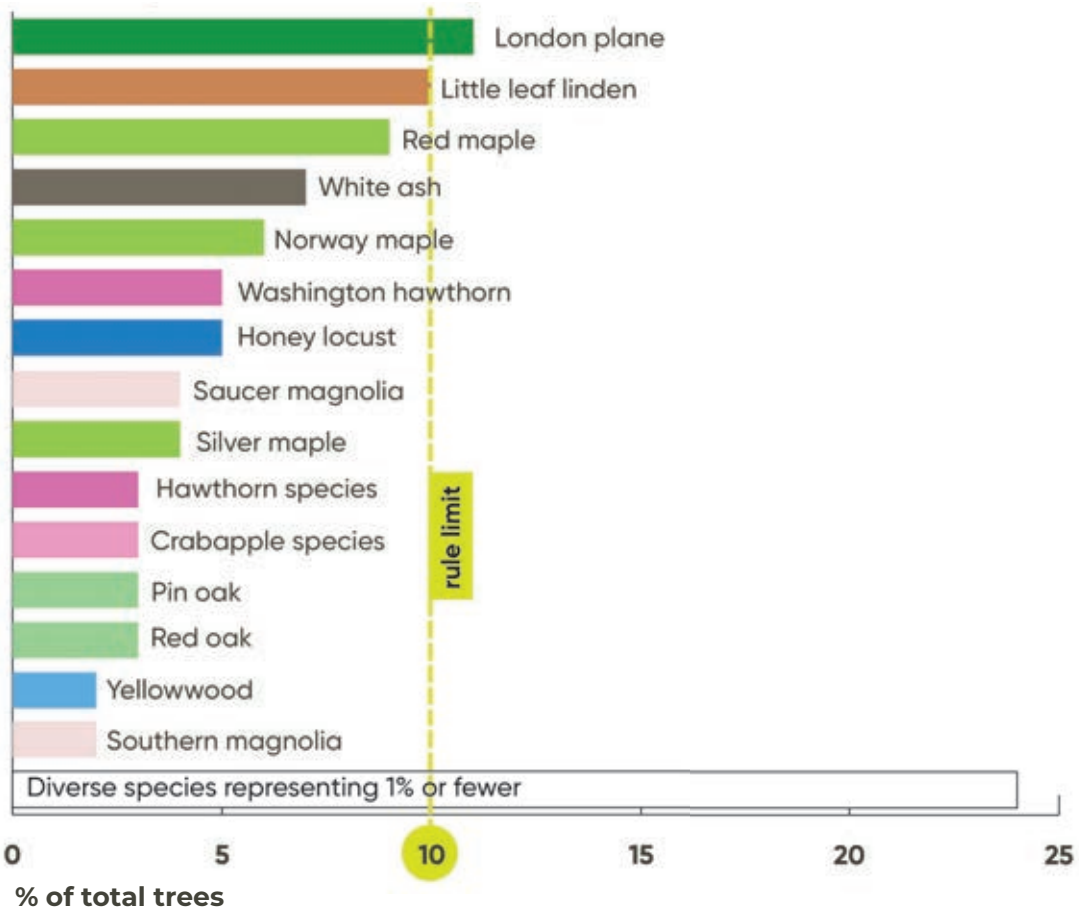


As we plan for the future of the trees in Carroll Park we want to consider the trees in the park and the surrounding forest as part of the urban forest plant community. The plan to the left and chart above shows the composition of the trees within a 2 block area around the park.

We can see that London plane trees make up much more than 10% and so we should be cautious about planting more trees of this species and of this genus (Platanus). We also should be aware that the family rosaceae (including cherries, hawthorns, and callery pear) makes up almost 30% of all trees.


W THOMPSON AVE
N 58TH ST
N 59TH ST
W GIRARD AVE
N

TREE SPECIES DIVERSITY WITHIN THE PARK



The species diversity of the trees in the park is a little different than the surrounding context and we need to consider both as we plan for the planting of new trees. London plane trees make up more than 10% and so we should not plant many more of this species and should be careful of planting too many of the same genus (Platanus) that include native sycamore trees. We can also see that there are many maple trees (the genus Acer), making up 19%. This is still below 20% recommendation but is getting close to the limit.

There are other things to consider as we evaluate the types of trees in the park. This includes:

- Noting trees that are vulnerable to known diseases or pests
- Calling out trees that are invasive species

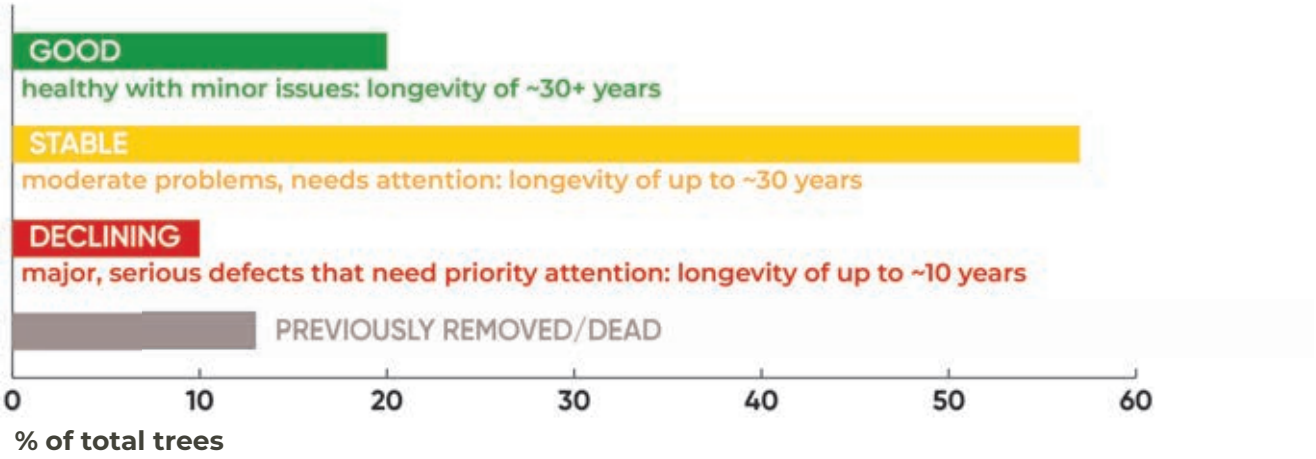
The following are the key diseases or pests that could affect the existing trees in the park and should inform planting of new trees:

- **Emerald Ash Borer** - This will likely kill every ash tree in the park very soon. New trees should be planted to replace all ash trees in the short term.
- **Bacterial Leaf Scorch** - This only affects oak trees in the red oak group. Pin oaks and red oaks in the park are vulnerable. New planting of trees that are vulnerable should be spread apart from each other and other existing trees in this vulnerable group.
- **Sycamore Anthracnose** - This affects London plane trees, and native sycamores. This is not fatal but can cause leaves to crinkle and drop in the spring and late summer.
- **Dutch Elm Disease** - This affects all elms and is fatal. Plant cultivars (cultivated variants) that have been bred for resistance.


W THOMPSON AVE
N 58TH ST
N 59TH ST
W GIRARD AVE
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PARK TREE CONDITION ASSESSMENT

All of the trees in the park were evaluated by an arborist in the fall of 2025 to determine their health. The assessment is based on conditions that can be observed from the ground including structural defects that can include cavities and large wounds. This also includes growth patterns that may cause issues in the future such as bark inclusion cracks. The arborist also looked for evidence of decay in the form of fungal fruiting bodies like mushrooms or evidence of pests like bore holes from insects. All of these observations went into determining a health designation of "good", "stable", or "declining". These designations help us plan for the future by telling us which trees are more likely to be removed in the near future and which trees can be expected to survive for many years to come. The planting plans for this park include recommendations for specific trees to replace trees that are in declining health in the short term to maintain a consistent canopy and minimize major impacts from the loss of trees.



WHAT HAPPENS IF WE DO NOTHING?



30-YEAR PROJECTION OF EXISTING CANOPY

We can never know for certain how many trees will survive or die over the next 30 years, but we can make an educated projection based on the current assessment. We can assume that the park will lose all of the trees in "declining" condition and many of the trees in "stable" condition in a 30 year time span. If we do not plan for new canopy the park could look like the image on the left with large open areas that have no shade.

July 11, 2026 Storm event

In the summer of 2026 Carroll Park experienced high winds from a storm event called microbursts that produce very high winds in a localized area. Many large trees were fully uprooted and many others were severely damaged. The condition assessment has been updated to reflect the impacts of this storm. This plan will help the park recover from this event and will provide guidance for new tree planting to respond to future events.


W THOMPSON AVE
CASUAL WALKING LOOP
EXERCISE LOOP
EXERCISE STATION
PICNIC AREA
ACTIVE PLAY
PLAYGROUND
EVENTS/ WATER PLAY
PARK SHED
N 58TH ST
N 59TH ST
ACTIVE PLAY
EXERCISE STATION
W GIRARD AVE
N

PARK USE AND CHARACTER

Park Features

Carroll Park is mostly a place for leisure with walking paths and benches that allow residents to enjoy being outside under the canopy of the mature trees. The park also includes unique features that encourage fitness and activity including:

- A gravel fitness loop with two fitness stations that have outdoor fitness equipment
- A playground including new swings and climbing structures
- A paved plaza at the center that includes a water play element that is active in the summer months

Park Use

Participants in the Friends Group meetings called out some ways that the park is used that should be considered as part of the planning for new trees:

- The exercise loop should have shade.
- There are areas that are used for picnics that should have shade but maintain open areas underneath for use and visibility.
- There are some active play zones where children play informal sports that should stay open and not have trees planted in the way.
- The interior casual walking path loop should have shade.
- The park shed, used for storing maintenance equipment, is sometimes vandalized and so there should be clear sight lines around the shed to discourage this.

Canopy Character

There are some patterns in the tree planting that contribute to the existing character of the park that should be considered as well. These include:

- Large canopy trees along the perimeter including many lindens (Tilia genus)
- Flowering trees near the shed area
- Trees lining paths throughout the park



PLAYGROUND



LARGE TREES ON THE PERIMETER



TREES LINING THE PATHS


W THOMPSON AVE
N 58TH ST
N 59TH ST
W GIRARD AVE
N

A VISION FOR THE FUTURE

PERIMETER TREES

Tall trees for shade over the exercise loop and sidewalks.

FLOWERING ENTRANCES

Flowering trees create welcoming entrances and distribute spring flowers to all sides of the park.

THE MEANDER

A diverse mix of canopy and flowering trees create interest and give the feel of a rich garden along the walking paths.

SHADED ACTIVE AREAS

Large canopy trees at the edges of high use areas provide shade without getting in the way of the activity.

PICNIC GROVES

Canopy trees spaced apart create groves that are ideal for picnics and small gatherings in the shade.

GARDEN GROVE

Clusters of flowering trees create the feeling of a garden in this section of the park where there is more passive activity.

This plan lays out a 30-year vision to guide tree planting in the park. This plan creates planting zones that support the function and character of the park. Each zone has its own list of plants to be planted in that zone. The planting zones and lists build on the existing park character and mix of species, however, the vision plan does not include any existing trees. Preparing the plan in this way provides the Friends group with a planting strategy that can respond to any unexpected event. If a large storm or new pest affects a tree that is currently healthy and strong, then the Friends will have a guide for how to respond with new planting.

All of the tree species recommendations in this plan are native to this region and are approved species by Philadelphia Parks and Recreation. Species selection also prioritized climate resilience, favoring trees expected to thrive under future climate conditions in the region. The species are also readily available at local nurseries and can be requested as part of the “Love Your Park” planting program through Fairmount Park Conservancy.

KEY PLANS SHOW THE PLANTING ZONES

PERIMETER TREES



Mix tree species to avoid too many of one kind. Alternate species so there is not a line of the same species in a row. For visual interest, alternate species with red and yellow fall color.

CHOOSE FROM THESE TREE SPECIES TO PLANT IN THE PLANTING ZONE SHOWN IN THE KEY PLAN



Red maple



Honeylocust



Swamp white oak



Chestnut oak



Northern red oak



Post oak



American basswood



American elm

FLOWERING ENTRANCES



Plant the same tree species in pairs on opposite sides of the paths for aesthetic effect. Make sure hawthorns are planted at least 10' from paths to prevent people from coming in contact with thorns.



Allegheny serviceberry



Eastern redbud



Flowering dogwood



Washington hawthorn

THE MEANDER



Alternate larger trees (sugarberry, cucumber tree, blackgum, and tuliptree) with smaller trees (fringetree, yellowwood, sweetbay magnolia, and chokecherry).



Sugarberry



Fringetree



Yellowwood



Cucumbertree



Sweetbay magnolia



Blackgum



Chokecherry



Tuliptree

KEY PLANS SHOW THE PLANTING ZONES

SHADED ACTIVE AREAS



Plant trees at the edges in the corners to be out of the way of active use areas. Concentrate the sycamores near the center of the park.

CHOOSE FROM THESE TREE SPECIES TO PLANT IN THE PLANTING ZONE SHOWN IN THE KEY PLAN



Honeylocust



Sycamore



Bur oak



Willow oak

GARDEN GROVE



Plant trees with their own species in groups of 3 to create small clusters. Keep trees at least 20’ away from the building for clear sight lines.



Allegheny serviceberry



Paw paw



American smoke tree



Carolina silverbell



Sweetbay magnolia



Sourwood

PICNIC GROVES



Plant sassafras and bald cypress with their own species in groups of 3 when possible. All other species should be mixed together.



Kentucky coffeetree



Sweetgum



Willow oak



Sassafras



Bald cypress

PHASE 1 PLANTING PLAN



IMPLEMENTATION

PHASE 1: 1-5 YEARS

The planting strategy for the first 5 years should be to:

1. Fill in gaps where shade is needed.
2. Plant new trees near trees that are in "declining" condition to minimize gaps in the future.
3. Add trees that will make the most impact toward the 30-year vision.

Other things to consider as you plan for the first round of planting are:

- Group each year's new trees together so they're easier to water and care for while they establish.
- The schedule is only a suggestion and you can take your time to plant trees at a pace that aligns with the capacity to provide establishment care.

SYMBOL	LATIN NAME	COMMON NAME	#
AR	*Acer rubrum*	**Red Maple**	3
AL	*Amelanchier laevis*	**Allegheny Serviceberry**	5
CL	*Celtis laevigata*	**Sugarberry**	1
CC	*Cercis canadensis*	**Eastern Redbud**	2
CV	*Chionanthus virginicus*	**Fringetree**	2
CK	*Cladrastis kentukea*	**Yellowwood**	1
CP	*Crataegus phaenopyrum*	**Washington Hawthorn**	1
GD	*Gymnocladus dioicus*	**Kentucky Coffeetree**	3
LS	*Liquidambar styraciflua*	**Sweetgum**	1
LT	*Liriodendron tulipifera*	**Tuliptree**	2
MA	*Magnolia acuminata*	**Cucumbertree**	1
PO	*Platanus occidentalis*	**Sycamore**	1
QB	*Quercus bicolor*	**Swamp White Oak**	1
QM	*Quercus macrocarpa*	**Bur Oak**	1
QMo	*Quercus montana*	**Chestnut Oak**	1
QSt	*Quercus stellata*	**Post Oak**	2
SA	*Sassafras albidum*	**Sassafras**	1
TA	*Tilia americana*	**American Basswood**	4
UA	*Ulmus americana*	**American Elm**	2

Phase 1 Total **= 35**

Average number of trees to plant per year for the first 5 years **= 7 / year***

Legend



Existing trees classified as "good" or "stable" in the condition assessment



Trees classified as "declining" in the condition assessment

* The schedule is only a suggestion and you can take your time to plant trees at a pace that aligns with the capacity to provide establishment care.

PHASE 2 PLANTING PLAN



PHASE 2: 5-10 YEARS

The planting strategy for this phase should be to:

1. Plant new trees near trees that appear to be nearing the end of their life. Many of these are noted as being in “stable” condition in the condition assessment.
2. Plant trees that will advance toward the 30 year vision.

The Phase 2 planting plan and schedule are provided as a guide to help the Friends group decide on new tree planting over the next 10 years. Friends groups should adjust planting as needed to respond to unexpected events that can affect trees like storms or new pests or diseases.

SYMBOL	LATIN NAME	COMMON NAME	#
AL	*Amelanchier laevis*	**Allegheny Serviceberry**	2
CL	*Celtis laevigata*	**Sugarberry**	1
CC	*Cercis canadensis*	**Eastern Redbud**	2
CF	*Cornus florida*	**Flowering Dogwood**	2
HC	*Halesia carolina*	**Carolina Silverbell**	3
LS	*Liquidambar styraciflua*	**Sweetgum**	1
LT	*Liriodendron tulipifera*	**Tuliptree**	3
MA	*Magnolia acuminata*	**Cucumbertree**	2
MV	*Magnolia virginiana*	**Sweetbay Magnolia**	3
NS	*Nyssa sylvatica*	**Blackgum**	1
PO	*Platanus occidentalis*	**Sycamore**	1
PV	*Prunus virginiana*	**Chokecherry**	1
QM	*Quercus macrocarpa*	**Bur Oak**	1
QPh	*Quercus phellos*	**Willow Oak**	3
SA	*Sassafras albidum*	**Sassafras**	2

Phase 2 Total **= 28**

Average number of trees to plant per year for the following 5-10 years **= 5-6 / year***

Legend

Existing trees classified as “good” in the condition assessment

Locations of trees from Phase 1 planting

Trees classified as “stable” in the condition assessment

* The schedule is only a suggestion and you can take your time to plant trees at a pace that aligns with the capacity to provide establishment care.

TREE PLANTING GUIDE

For an easy guide for planting trees please use the Yard Tree Planting and Care Guide provided by TreePhilly. You can view and download a version of this guide at this link:

tinyurl.com/
TreePhillyGuide

Note: If trees are not being planted through a Love Your Park event, a Park Activity Permit from Philadelphia Parks & Recreation is required prior to planting.



TREE PLACEMENT CONSIDERATIONS

The phasing plans provide general guidance on where to plant which trees, however there are some additional things to consider when you are picking the exact spot for your tree.

- **Distance from paving:** try to keep all trees at least 10 feet from edges of paving. Smaller flowering trees might be able to get closer but tree species that get large can lift the pavement with their roots over time.
- **Overhead wires, lighting, or structures:** The phasing plans should avoid these conflicts but always double check that the area overhead is clear and does not block park lights.
- **Visibility and safety:** The phasing plans consider this but make sure that the tree location does not block any critical sight lines.



ESTABLISHMENT CARE

New trees need special attention for the first 3 years after planting to improve their chance of surviving to maturity. Once a tree is established it needs very little maintenance. Below are some of the key things you need to know about caring for your newly planted tree.



Protecting young trees

There are multiple ways of protecting young trees. If you are receiving trees from a program like Love Your Park or TreePhilly, ask the program manager about what methods they will be using to protect the trees. If you have had experiences with young trees being damaged in the past, tell the program manager and ask if there is additional protection they can provide such as fencing around the tree.



Watering

Watering is the most important aspect of establishment care and one of the most difficult to do. Trees need 15-20 gallons of water every week during the growing season (spring through fall).

Trees need “deep watering” which means watering slowly so that the water penetrates the soil and does not run off. There are multiple methods for this that use some water-holding device that can be filled with a hose and releases water over time like a Gator Bag. This can also be done with a simple 5 gallon bucket with small holes drilled in the bottom. If you are using a 5 gallon bucket you need to fill it 3 times a week at a minimum. This is most important during a drought and when the temperatures are very high.

Not all parks have a water supply. Philadelphia Parks & Recreation may be able to help provide support for watering. Talk to your contact at the Stewardship Office at Philadelphia Parks & Recreation. If you do not know who your contact is or if you don’t have a contact person then reach out to the Stewardship Office at (215) 683-3679 or PPRstewardship@phila.gov.

EXISTING TREES 2026



SYMBOL	LATIN NAME	COMMON NAME	NATIVE	# in park
AN	*Acer nigrum*	River Maple	X	1
AP	*Acer platanoides*	Norway Maple		8
AR	*Acer rubrum*	Red Maple	X	12
AS	*Acer saccharinum*	Silver Maple	X	5
AO	*Aesculus octandra*	Yellow Buckeye	X	2
AC	*Aesculus X carnea*	Red Horse Chestnut		1
CC	*Cercis canadensis*	Eastern Redbud	X	2
CCa	*Carpinus caroliniana*	American Hornbeam	X	1
CS	*Catalpa speciosa*	Northern Catalpa	X	2
CJ	*Cercidiphyllum japonicum*	Katsura Tree		2
CK	*Cladrastis kentukea*	Yellowwood	X	3
CP	*Crataegus phaenopyrum*	Washington Hawthorn	X	7
CSp	*Crataegus Species*	Hawthorn - mixed species		4
FA	*Fraxinus americana*	White Ash	X	9
GT	*Gleditsia triacanthos*	Honey Locust	X	7
KP	*Koelreuteria paniculata*	Goldenraintree		1
LS	*Liquidambar styraciflua*	Sweetgum	X	1
LT	*Liriodendron tulipifera*	Tulip Poplar	X	2
MA	*Magnolia acuminata*	Cucumber Tree	X	2
MG	*Magnolia grandiflora*	Southern Magnolia	X	3
MS	*Magnolia soulangeana*	Saucer Magnolia		7
MSp	*Malus Species*	Crabapple - mixed species		4
PS	*Pinus strobus*	White Pine	X	1
PA	*Platanus X Acerifolia*	London Planetree		16
PSp	*Prunus Species*	Ornamental Cherry - mixed species		1
PSu	*Prunus subhirtella*	Winter-Flowering Cherry		1
PC	*Pyrus calleryana*	Callery Pear		2
QA	*Quercus alba*	White Oak	X	1
QB	*Quercus bicolor*	Swamp White Oak	X	1
QM	*Quercus macrocarpa*	Bur Oak	X	1
QP	*Quercus palustris*	Pin Oak	X	4
QR	*Quercus rubra*	Red Oak	X	4
TD	*Taxodium distichum*	Bald Cypress	X	1
TA	*Tilia americana*	American Basswood	X	2
TC	*Tilia cordata*	Littleleaf linden		14
UA	*Ulmus americana*	American Elm	X	1
ZS	*Zelkova serrata*	Japanese Zelkova		2

Legend



Existing trees classified as “good” in the condition assessment



Trees classified as “declining” in the condition assessment



Trees classified as “stable” in the condition assessment


PHILLY
TREE COALITION
FAIRMOUNT PARK
CONSERVANCY
hinge
collective
SAVATREE
FIND YOUR PATH
PHILADELPHIA
PARKS &
RECREATION