

# Street Design 101

# Welcome



# Active Transportation

Active transportation is any self-propelled, human-powered mode of transportation, such as walking or bicycling.



# Urban Greening



Urban Greening refers to public landscaping and urban forestry projects that create mutually beneficial relationships between city dwellers and their environments.



## Overview

# ChAT & ChUG: Chinatown Complete Streets Project

**Project Types:** ATP (ChAT) and Urban Greening (ChUG)

**Applicant/Implementer:**  
City of Fresno

**Location: Chinatown 93706**  
**F Street:** Fresno to Ventura  
**Kern:** G to E  
**Mariposa:** E to G  
**China Alley:** Tulare to Ventura

**TCC Funding:** \$3.7M ATP (ChAT)  
\$4M UG (ChUG)

**Match Funding:** \$TBD

**Total Budget:** \$ 7.7M

*The project is scalable.*



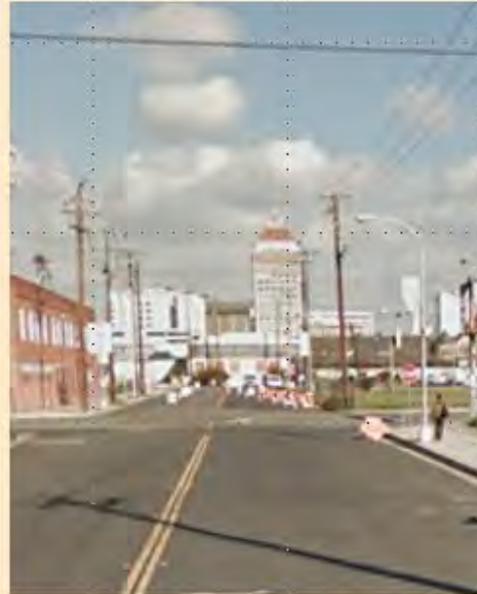
Project Area Map

## Benefits and Impacts

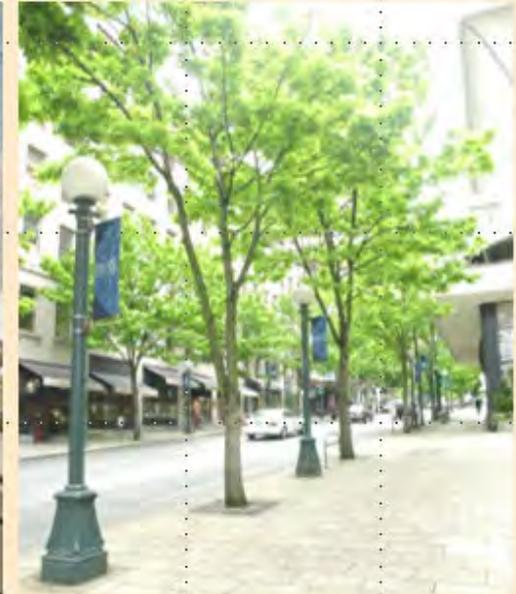
### Proposed improvements:

Sidewalks, street trees, lighting, curb ramps, bulbouts, green alley & parklets

- ATP project elements improve the walkability, visibility and accessibility of the area
- Urban greening elements provide shade and encourage active transportation
- Improvements support economic revitalization in Chinatown



Mariposa currently lacks trees



Bulbout reconstruction will increase pedestrian access



## TCC Goals and Criteria

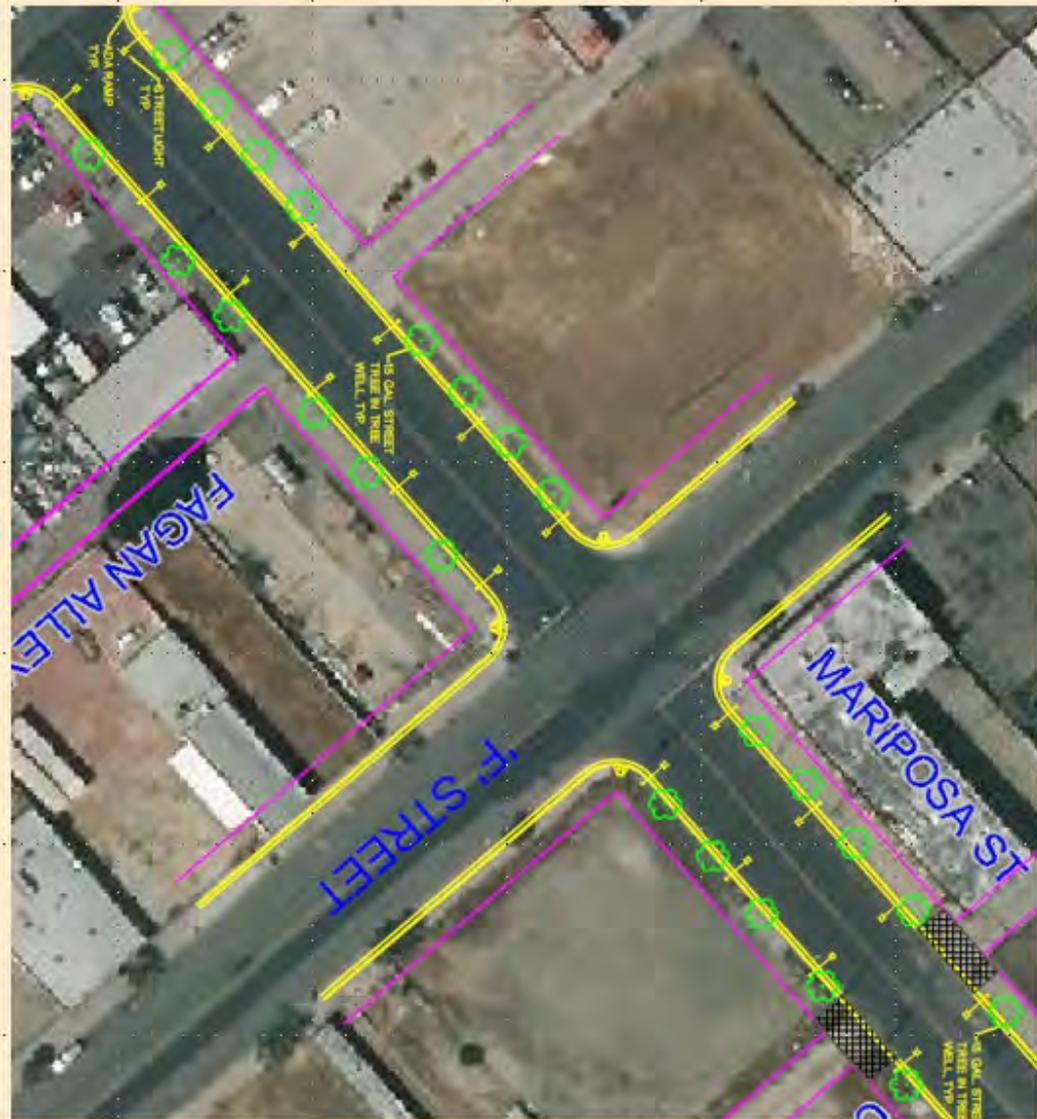
- Fulfills **GHG emission reduction goals** through active transportation and urban greening
- Fulfills **transit access and mobility goals** by providing pedestrian facilities for active transportation
- Fulfills **urban greening goals** by increasing the urban tree canopy & establishing a green alleyway

Street trees will provide shade for active commuters and help to cool nearby buildings while water permeable alley surfaces will reduce the risk of stormwater runoff and recharge groundwater



## Readiness

- Fulfills TCC readiness requirements for Active Transportation Projects per appendix D
- CEQA clearance needed
- Preliminary Engineers Estimates and Exhibits prepared for scoping and costing purposes
- Site control for urban greening



Excerpt from conceptual drawing, Mariposa Street

## Close

This project was initiated by Chinatown property and business owners, with a transformative vision for the area.

The project will result in:

- A reduction of GHG emissions
- Chinatown revitalization
- Increased economic prosperity

Proposed improvements will enhance the vibrant history and cultural experience Chinatown offers



# Street Trees

- E Street – *Sapium sebiferum* (Chinese Tallow Tree)
- F Street – *Magnolia glandiflora* (Southern Magnolia)
- G Street – ALT *Quercus virginiana* (Southern Live Oak and *Zelkova serrata* “Village Green” (Japanese zelkova)
- Fresno Street ALT *Ginkgo biloba* “Autumn Gold” or “Fairmont” (Maidenhair Tree) and *Magnolia glandiflora* (Southern Magnolia)
- Mariposa Street – *Koelreuteria paniculate* (Goldenrain Tree)
- Tulare Street – ALT *Quercus virginiana* (Southern Live Oak) and *Pistacia chinensis* (Chinese Pistache); ACCENT *Lagerstroemia indica* “Indian Varietals” (Crape Myrtle “Indian Varietals”)
- Kern Street *Celtis senensis* (Chinese Hackberry)
- Inyo Street – *Fraxinus Americana* ‘Autumn Applause’ (Autumn Applause Ash)
- Mono Street – *Nyssa sylvatica* (Black Tupelo)
- Ventura Street – *Zelkova serrata* “Green Vase” (Sawleaf Zelkova)

# Street Trees



**Botanical name**

*Cedrus deodara*

**Common name**

Deodar Cedar

**Description**

This fast-growing, coniferous evergreen is capable of reaching a size of 80' high by 40' wide. Its plural needles will show a light, silvery green color.

**Urban form**

Pyramidal



**Botanical name**

*Celtis sinensis*

**Common name**

Chinese Hackberry

**Description**

This deciduous tree grows 50' or taller and nearly as wide. The branches and leaves create a canopy which offers moderate shade in spring and summer. The leaves are bright green, oval, and 2"-5" long with finely toothed edges.

**Urban form**

Rounded, spreading



**Botanical name**

*Cercis canadensis 'Oklahoma'*

**Common name**

Oklahoma Redbud

**Description**

This deciduous tree with a rounded head is covered with small flowers of a rose pink color in the spring before the appearance of heart-shaped leaves. It can grow to 25' tall with an equal spread, a low-branching habit with a rounded form. Leaves turn yellow-green in the fall. Prefers neutral to acidic soils.

**Urban form**

Rounded, vase



**Botanical name**

*Fraxinus americana 'Autumn Applause'*

**Common name**

American Ash

**Description**

This tree is a dense, oval, male selection with good branch structure which exhibits beautiful reddish maroon fall color on narrow leaflets. It reaches 40' high x 25' wide with dark green color and fine texture.

**Urban form**

Oval, rounded



# Street Trees



**Botanical name**  
*Ginkgo biloba* 'Autumn Gold'

**Common name**  
Ginkgo

**Description**  
This deciduous tree can grow to 30' in height. It is symmetrical in shape, with a broadly conical habit; it has fan-shaped leaves that maintain a good fall color. This tree is tolerant of urban conditions.

**Urban form**  
Pyramidal



**Botanical name**  
*Koeleruteria paniculata*

**Common name**  
Goldenrain Tree

**Description**  
This is a medium-sized tree which grows 30'-40' tall with a 35-40' spread. It produces lacy foliage and upright yellow flower clusters in the summer. It is tolerant of urban conditions and various soil types. This is an excellent street tree for retail areas due to its open lacy nature.

**Urban form**  
Rounded, vase



**Botanical name**  
*Lagerstroemia indica* 'Indian Varietals'

**Common name**  
Crape Myrtle

**Description**  
This is one of the longest blooming tree varieties, with a season of 2-4 months long. Flowers usually appear in the summer and could be red, rose, pink, purple, or white. The Crape Myrtle variety to select is an upright tree. Some varieties are fast growing and mildew resistant. Some species have exfoliating bark that exposes a lovely cinnamon or gray colored bark.

**Urban form**  
Rounded, spreading



**Botanical name**  
*Laurus nobilis* 'Saratoga'

**Common name**  
Sweet Bay

**Description**  
Slow grower 15 to 25 feet tall and wide. Large, leathery dark green leaves and highly aromatic. Clusters of small yellow flowers in spring are followed by dark purple berries in fall. The 'Saratoga' variety has a more tree-like habit than the Mediterranean Sweet Bay that is used for cooking.

**Urban form**  
Rounded, spreading



# Street Trees



**Botanical name**  
*Magnolia grandiflora*

**Common name**  
Southern Magnolia

**Description**  
This is a large tree that can reach up to 80 feet tall with a 60 foot spread when mature. Flowers are powerfully fragrant white blossoms at the end of spring through the beginning of summer. Seed cones are large with bright red seeds that are often used for decoration.

**Urban form**  
Oval, spreading



**Botanical name**  
*Malus Hopa*

**Common name**  
Flowering Crabapple

**Description**  
This deciduous tree grows to a height of about 25' and has a rounded shape with spreading branches and oval, green leaves that emerge just after the flower buds. In mid-spring, the buds, which are red, arise all along the bare branches and open to pink, fragrant blossoms.

**Urban form**  
Rounded, Oval



**Botanical name**  
*Nyssa sylvatica*

**Common name**  
Sour Gum

**Description**  
This deciduous, fast-growing, moderate to large tree produces foliage about 4" long and 1.5" wide. Sour Gum is one of the most consistent to color in the fall, turning a deep red.

**Urban form**  
Oval, pyramidal



**Botanical name**  
*Pinus canariensis*

**Common name**  
Canary Island Pine

**Description**  
This graceful, slender-growing pine has a pyramidal form to about 70' in height. Its needles are long and drooping in bundles of 3. The foliage is a blue-green color, maturing to a dark green shade.

**Urban form**  
Narrow, pyramidal



# Street Trees



**Botanical name**  
*Pistacia chinensis*

**Common name**  
Chinese Pistache

**Description**  
This deciduous tree has broad, spreading growth to 50' in height. Its leaves have 10-16 leaflets, and the fall coloring arrives in beautiful shades of red, orange and yellow. The young trees are often gawky, but become shapely with age.

**Urban form**  
Umbrella



**Botanical name**  
*Platanus acerifolia* 'Columbia'

**Common name**  
Columbia Plane Tree

**Description**  
This deciduous tree is fast growing and reaches a size 40'-80' high by 30'-40' wide. Its leaves are 3-5 lobed, with a width of 4"-10". This plant is tolerant of most soils, smog, dust and reflected heat.

**Urban form**  
Oval, pyramidal



**Botanical name**  
*Podocarpus gracilior*

**Common name**  
Fern Pine

**Description**  
This evergreen tree grows up to 30'-50' tall with a branch spread of 25'-35' wide. It has bright green new growth and dark green mature leaves. With lower limbs removed it grows in a rounded vase or oval shape creating dense shade beneath and is well adapted to Downtown, restricted-soil planting sites.

**Urban form**  
Rounded, Vase



**Botanical name**  
*Pyrus Calleryana*

**Common name**  
Callery Pear

**Description**  
This deciduous tree grows up to 49'-66' tall, often with a conic to rounded crown. The leaves are oval, 1.6-2.8" long, glossy dark green above, and slightly paler below. The white, five-petaled flowers, about 0.8-1.2" in diameter, are produced abundantly in early spring, before the leaves expand fully.

**Urban form**  
Rounded, conic



# Street Trees



**Botanical name**

*Quercus ilex*

**Common name**

Holly Oak

**Description**

This evergreen oak has a moderate growth rate up to 30'-60' tall and as wide. The leaves are 1.5"-3" long, .5"-1" wide, and either toothed or smooth-edged. It has a rich, dark green leaf color.

**Urban form**

Rounded



**Botanical name**

*Quercus robur 'Fastigiata'*

**Common name**

English Oak

**Description**

This slow growing deciduous tree with simple deep green almost bluish leaves and little fall color, has a narrow columnar form reaching a height 50'-60' with a width 10'-15'. The elongated columnar form with a short trunk makes a striking landscape specimen. Leaves can persist into winter.

**Urban form**

Columnar



**Botanical name**

*Quercus virginiana*

**Common name**

Southern Live Oak

**Description**

This normally evergreen oak tree is native to the southeastern United States. The bark is dark, thick, and furrowed longitudinally. The leaves are stiff and leathery, with the tops shiny dark green and the bottoms pale gray. Typical open-grown trees reach 60 feet in height, with a limb spread of nearly 80 feet.

**Urban form**

Rounded, spreading



**Botanical name**

*Sapinum sebiferum*

**Common name**

Chinese Tallow

**Description**

This deciduous tree with a roundish head grows up to 35', exhibits light green leaves that are 2" in length, and are similar to those of the poplar. Beautiful colors such as red, plum, purple, oranges, and yellow are seen during the fall season.

**Urban form**

Oval



# Street Trees



**Botanical name**  
*Sophora japonica* 'Regent'

**Common name**  
Japanese Pagoda

**Description**  
This deciduous tree grows to 50'-60' tall with a round head and green bark. In the late summer, lovely panicles of white flowers will be seen. This plant is a dependable shade tree, should be grown under sunny conditions, and it is very drought- and heat-tolerant.

**Urban form**  
Rounded



**Botanical name**  
*Tilia cordata* 'Greenspire'

**Common name**  
Little-leaf Linden

**Description**  
This large deciduous tree can reach 30'-50' tall, and creates a dense pyramid that can be used as a screen. It blooms with white fragrant flowers and does well in urban settings. Should the native soil be of a clay-like nature, plant the tree high to allow for drainage.

**Urban form**  
Oval, pyramidal



**Botanical name**  
*Ulmus parvifolia* 'Drake'

**Common name**  
'Drake' Chinese Elm

**Description**  
A fast-growing, nearly evergreen tree, 'Drake' Chinese Elm forms a graceful, spreading, rounded canopy of long, arching, and somewhat weeping branches which are clothed with 2"-3" long, shiny, dark green, leathery leaves. It typically grows to a height of 40'-50', but can reach as high as 80'.

**Urban form**  
Umbrella



**Botanical name**  
*Zelkova serrata* 'Green Vase'

**Common name**  
Sawleaf Zelkova

**Description**  
This moderately growing deciduous tree mimics the American Elm. It has a narrower vase shape and usually reaches a size 50'-60' high and as wide. Its elm-like leaves are 2"-2" long and 1-1/2" wide, the fall foliage colors range from yellow to red shades and it is very drought, heat, and pollution tolerant.

**Urban form**  
Vase



**Botanical name**  
*Zelkova serrata* 'Village Green'

**Common name**  
Japanese Zelkova

**Description**  
This moderately growing, deciduous tree usually reaches a size 50'-60' high and as wide. Its elm-like leaves are 2"-2" long and 1-1/2" wide. The fall foliage color ranges from yellow to red shades.

**Urban form**  
Vase



# Bicycle Infrastructure

Buffers



Speed bumps, obstructions  
and roundabouts



# Bicycle Infrastructure



# Park spaces



# Park spaces



# Lighting



# Lighting



# Street Design 101

Thank you

