APPENDIX

A.1.1 Tree Selection Criteria

By using the list of trees provided and planting the streets according to the Specific Plan, Whittier will achieve consistent visual unity, block by block, without sacrificing variety. Selection was influenced by a number of pertinent factors and objectives:

- **Environmental Suitability:** Trees that thrive in Whittier and the region;
- **Sustainability Concerns:** California natives or trees closely resembling them, including their drought-resistance, in appearance and function shall be used;
- **Street Tolerance:** A variety of street trees that perform well in urban environments are proposed. Automobile exhaust, dust, and small planters narrows the range of species appropriate for curbs;
- **Variety:** Within all of these factors is embedded the goal of species variety: Leaf color in autumn and spring, the scent of evergreens and cedars, and a kaleidoscope of branching patterns and shadow play; Vertical nature of palms and skyline view.
- **Scale and Transparency-Street:** Trees at maturity should begin branching above commercial signage and allow buildings to be seen through the canopy. Medium sized trees are reserved for narrow streets and alleys that can not accommodate big trees.

A. Street Tree Guidelines

- Eliminate unnecessary curb cuts for a continuous line of trees at the street edge;
- Tree wells are approximately 7' x 7' with structural soil beneath for root aeration and growth for canopy trees and located within parking area; palm trees are 4' x 4' wells' in retail areas. Tree wells in residential neighborhoods to be located in street parking areas and shall be 6'x 6' curbed wells.
- Automatic irrigation to be maintained for tree establishment and drought;
- Spacing (typical 30') should depend on tree type, visual unity and adequate canopy coverage;
- Substitutes only if disease or pests render the selected species unsuitable;
- Commit to long-term maintenance to optimize health and aesthetic qualities.

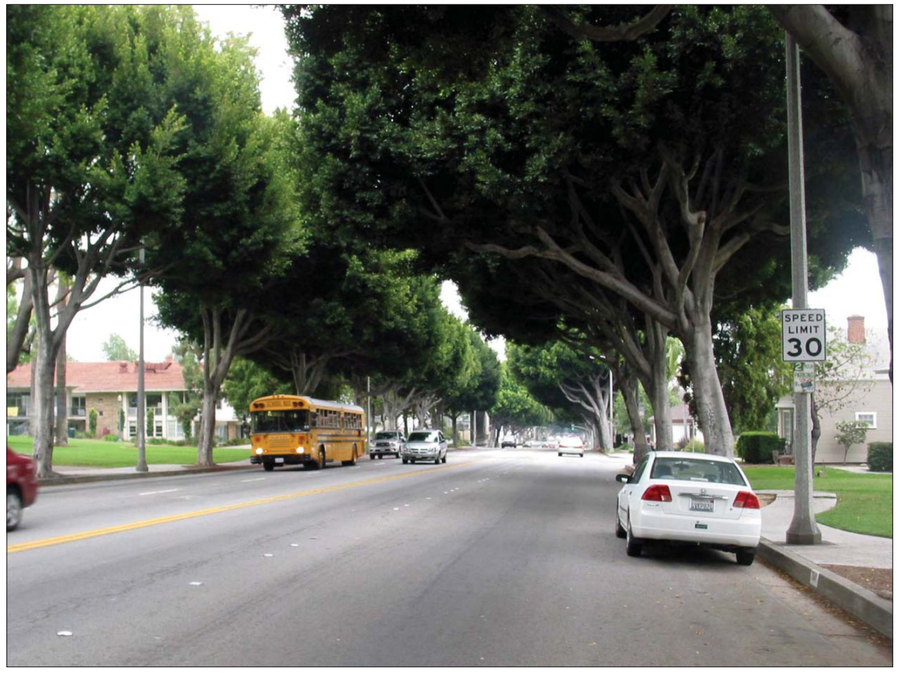
Above: The ficus trees are aesthetically striking and an integral part of Uptown's character, yet they pose serious challenges such as their age and deteriorating condition. One such challenge is the effect their roots have on nearby sidewalks and curbs, including the cracks and upheaval seen in the image above. This Specific Plan proposes a two-fold approach to address these challenges: a tree-succession plan over time, and a structural soil system for the future planting of trees. Both solutions may be costly in terms of time and resources, but are necessary and beneficial to the future of Uptown.

Below: Street trees are a dominant component of the urban landscape, for they contribute to the urban form (e.g. in the shape of a canopy), and also provide both aesthetic (e.g. the welcome sight of greenery) and utilitarian (e.g. providing shade) pleasure to residents and visitors. Trees also complement other public realm features, such as shrubs, planters and benches--all of which transform streets in pleasing public open spaces.

Right: Painter Avenue, on the eastern end of Uptown, is an excellent example of the manner in which intensive planting of street trees can help define the edge and transform an area into a distinctive destination. In order to accomplish this task, trees must be of the same or similar species, be planted in relatively close proximity to each other, and establish a clear geometric shape (e.g. a virtual wall, an overhead canopy, a colonnade) that is legible to passers-by.

Left: Apart from aesthetic considerations, trees must also be selected for their maintenance implications, especially in an urban setting with road pavement, curbs, sidewalks, and buildings in close proximity. Uptown faces a number of challenges in this regard, such as the small planting space and subsequent damage to the curb seen this the adjoining photograph.

Above: Appropriately selected and planted street trees help frame views and soften the sometimes hard edges of urban form, as seen above on Greenleaf Avenue in Uptown. The selection of tree species, including their urban form and long-term maintenance implications, is a crucial decision-making process in the attractiveness and viability of a district such as a town center.



A.1.2 Reforestation Guidelines and Sustainability

A. Tree Evaluation, Inventory and Assessment

- Evaluation for Hazard
  - Injured Trees
  - Unhealthy Trees
- Inventory Healthy Trees and Economic Value
  - Recommendation for sustaining trees during reforestation
- Qualified Arborist
  - Certified Arborist/Plant Pathologist conducts tree evaluation

B. Plan with a Vision

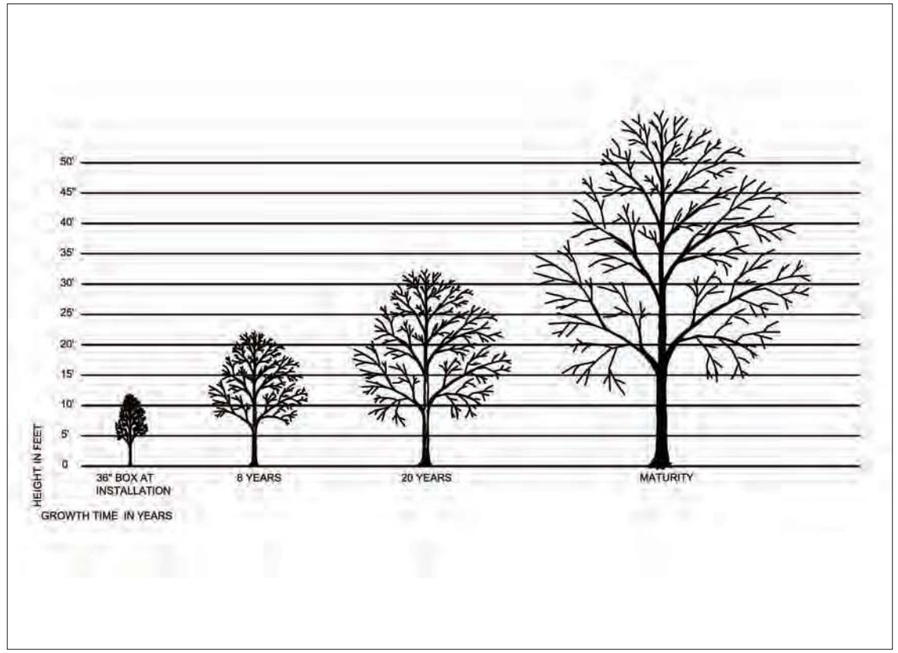
- Adjust Reforestation Program based on Tree Evaluation
- Implement Reforestation Plan

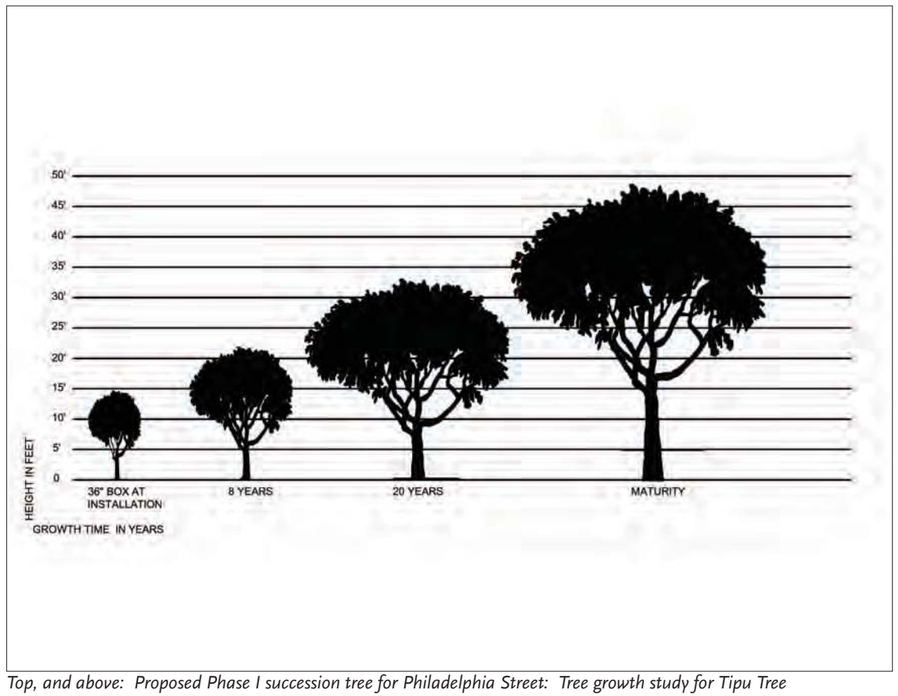
C. Tree Protection During Reforestation / General Construction

- Activities During Construction for Protection of Urban Forest
  - Tree Fencing Plan
  - Soil Compaction over Rootball and Dripline Plan
  - Erosion Control Plan
  - Tree Pruning Plan
  - Grade Fills
  - Grade Cuts
  - Root Severance
  - Excavation Plan
- Contractors / Owners subject to penalties for damage to trees
- Employees subject to discipline for damage to trees

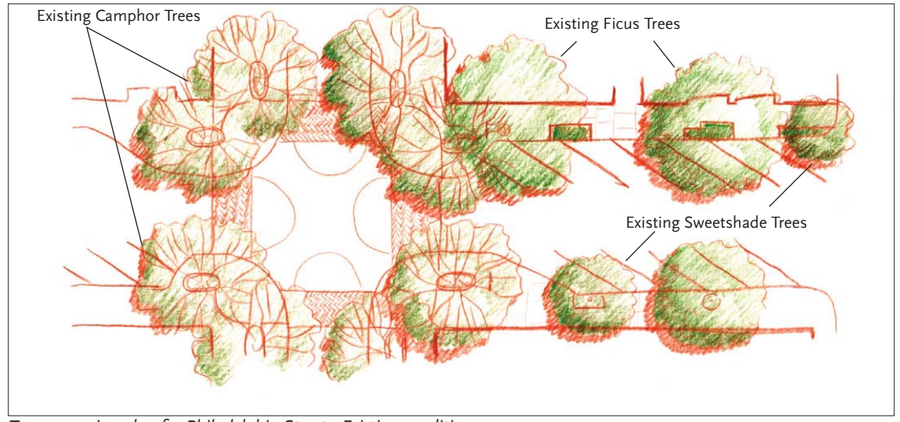
D. Tree Installation/Sustainability of Existing/Proposed Urban Forest

- Planting Medium and Strategies for Urban Landscape Planting within paved areas
  - Root Trenches for trees in paved areas of uncompacted soil. Sustainable soil volumes of 900-1,000 square feet.
  - Bridging pavement sections over uncompacted soil trenches.
  - Alternate: Structural soil system or gap graded soil to maintain compaction while allowing root penetration.
- Drainage and Aeration
  - Provide sub-drainage system and aeration through perforated pipes
- Irrigation Practices
  - Provide ongoing irrigation and supplementation of water during establishment period and as ongoing maintenance
- Pruning Practices
  - Timing of pruning based on tree type
  - Pruning of Young Trees
  - Excessive Pruning
  - Topping of trees prohibited
- Fertilization, Insect and Disease Control
  - Fertilizing standards and Mycorrhizae Treatments of young and existing trees
  - Mulching to reduce thermal buildup in soil and maintain even moisture
  - Provide program review for disease and insect control
- Training Material / Education Program for Maintenance Staff
  - Provide ongoing education and training materials to staff and public on sustaining the Urban Forest.
- Public and Private Urban Forest Commission
  - A joint venture between the City and Uptown Area stakeholders to review and develop policy for Uptown Urban Forest

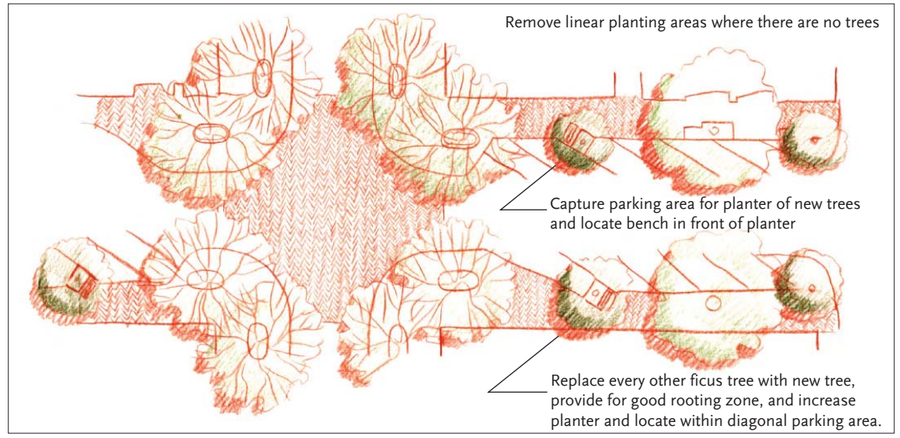




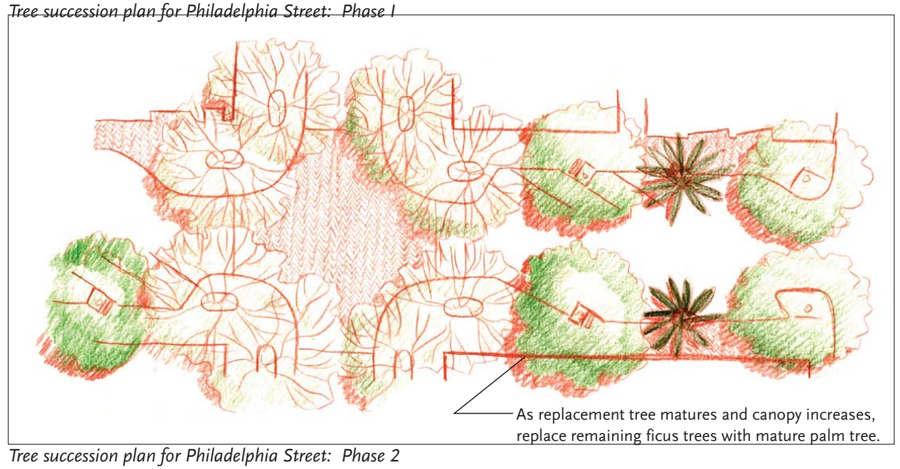
Top, and above: Proposed Phase I succession tree for Philadelphia Street: Tree growth study for Tipu Tree



Tree succession plan for Philadelphia Street: Existing conditions



Tree succession plan for Philadelphia Street: Phase I



Tree succession plan for Philadelphia Street: Phase 2

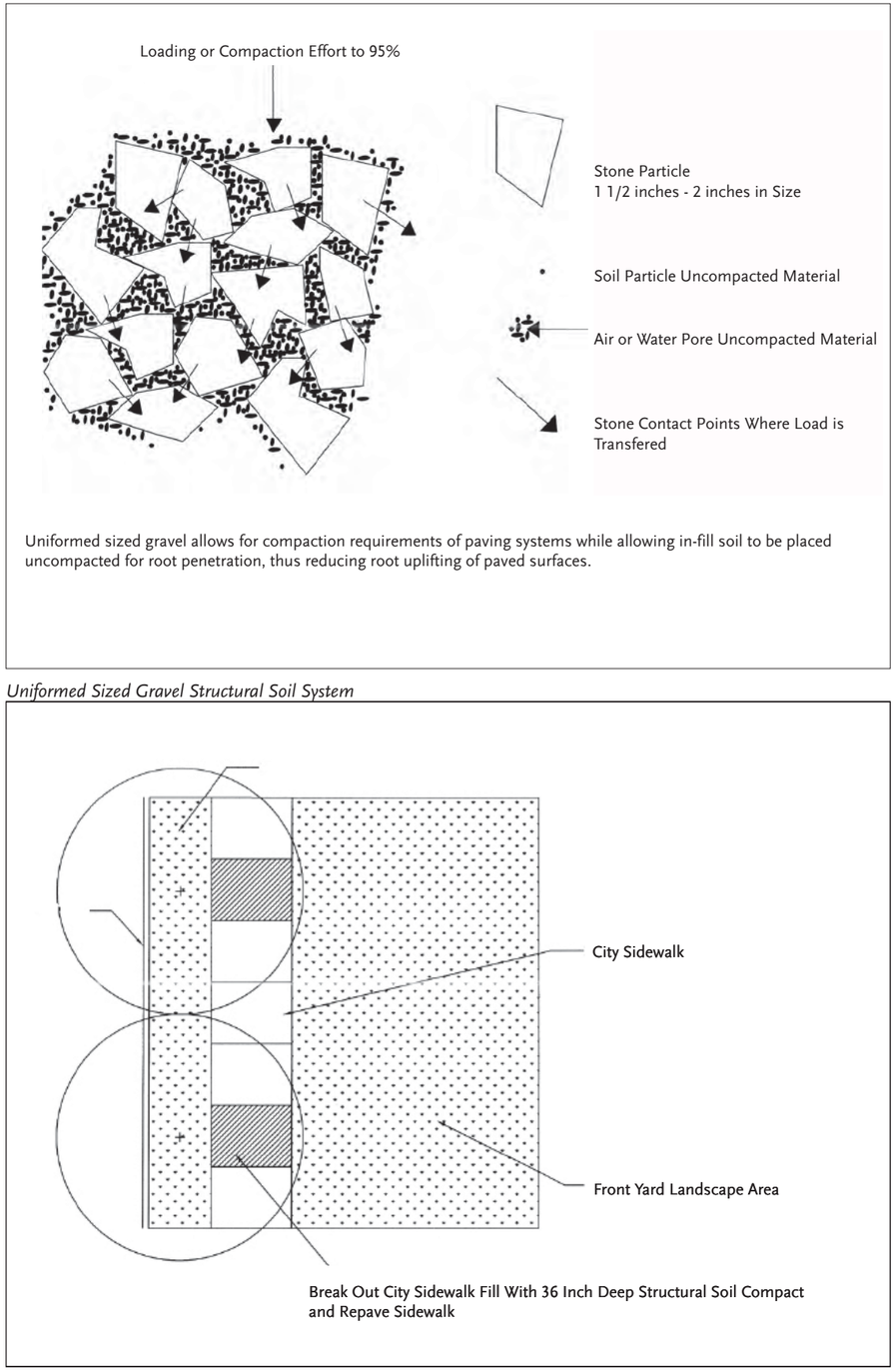
A.1.3 Planting, Irrigation, and Structural Soil System

The most common cause of young tree failure is planting too deep. In most instances , the point where the top most root in the roo ball originates from the trunk referred to as the root flare zone or root collar) should be located 1-2" above the soil surface. If there is a nursery soil over this area, scrape it off. Never place any soil over the root ball. The planting hole should be at least twice the width of the root ball, preferably wider because roots grow best in loose soil. Depth of tree pit should be to the depth of root ball of proposed tree size. In all but exceptional circumstances where the soil is very poor, extensive research clearly shows that there is no need to incorporate any amendments into the backfill soil. Simply use the loosened soil that came out of the planting hole.

Apply a 3 inch thick layer of mulch to at least six foot diameter circle around the tree. This area should be at least two feet in diameter for each inch of tree trunk diameter and maintained during the establishment period. Apply a thinner layer of mulch directly over the root ball but keep it at least 10 inches from the trunk. This allows rainwater, irrigation and air to easily enter to root ball and keeps the trunk dry.

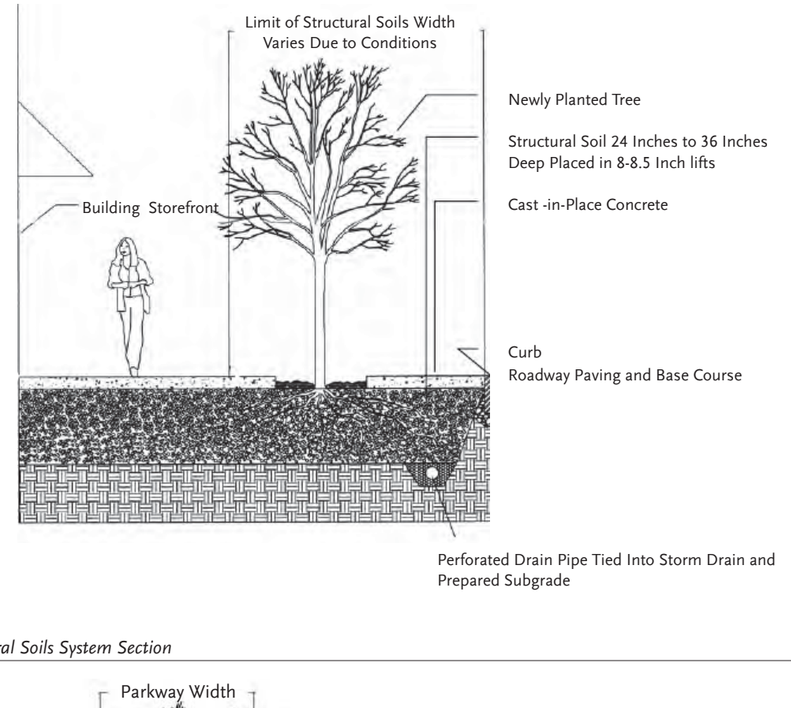
Regular irrigation after planting encourages rapid root growth that is essential for tree establishment. Trees with regular irrigation through the first growing season after planting require about 3 months or more per inch of trunk diameter to fully establish roots in the landscape soil. Trees in drier climates may take longer to establish. Trees that are under irrigated during this establishment period (and most trees are) often require additional time to establish because roots grow more slowly.

Unlike established plants, which do best with deep, infrequent irrigation, research clearly shows that recently planted trees and shrubs establish quickest with light, frequent irrigation. For planted trees daily irrigation provides the quickest establishment. Following the initial few months of frequent irrigation, provide weekly irrigation until plants are fully established. With every irrigation cycle, apply tow gallons of water per inch trunk diameter (e.g. 2 to 4 gallons for a 2 inch tree) over the root ball only. Never add water if the root ball is saturated.

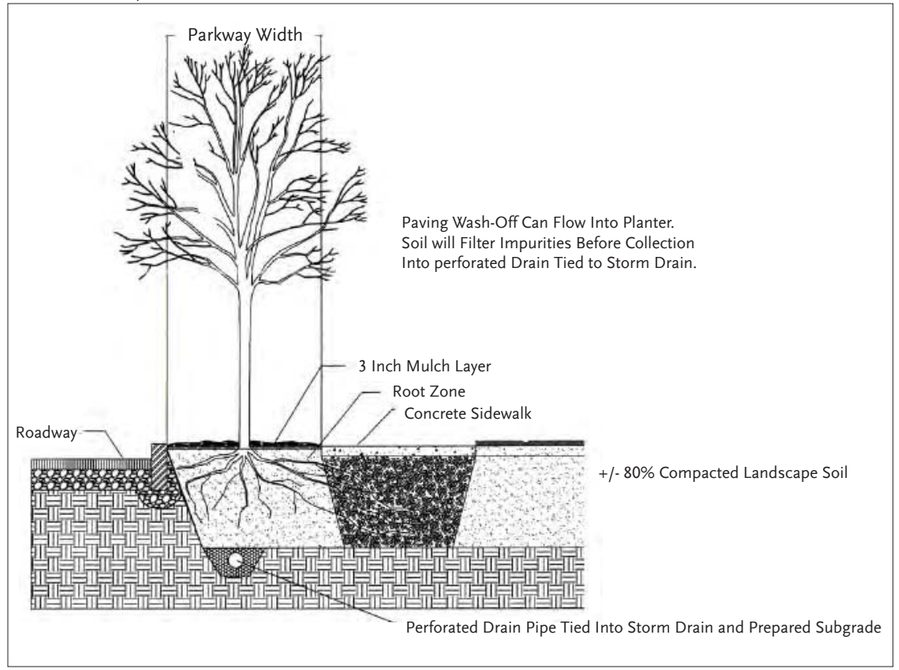


Uniformed sized gravel allows for compaction requirements of paving systems while allowing in-fill soil to be placed uncompacted for root penetration, thus reducing root uplifting of paved surfaces.

Uniformed Sized Gravel Structural Soil System



Structural Soils System Section

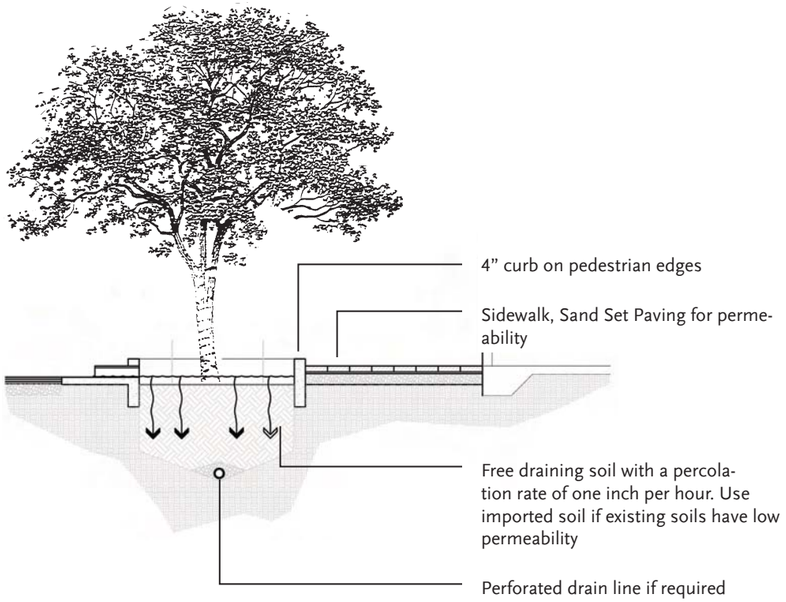


A.1.4 Storm Water Guidelines and Sustainability

Soils and plant materials can successfully filter pollutants from water. Bio-retention is a soil and plant-based storm water best management practice employed to filter runoff from developed communities.

Various grasses, shrubs, and trees are established to promote evapotranspiration, maintain soil porosity, encourage biological activity, and promote uptake of some pollutants. Runoff from an impervious area is directed into the bio-retention facility. The water infiltrates through the plant/mulch/soil environment, providing the treatment.

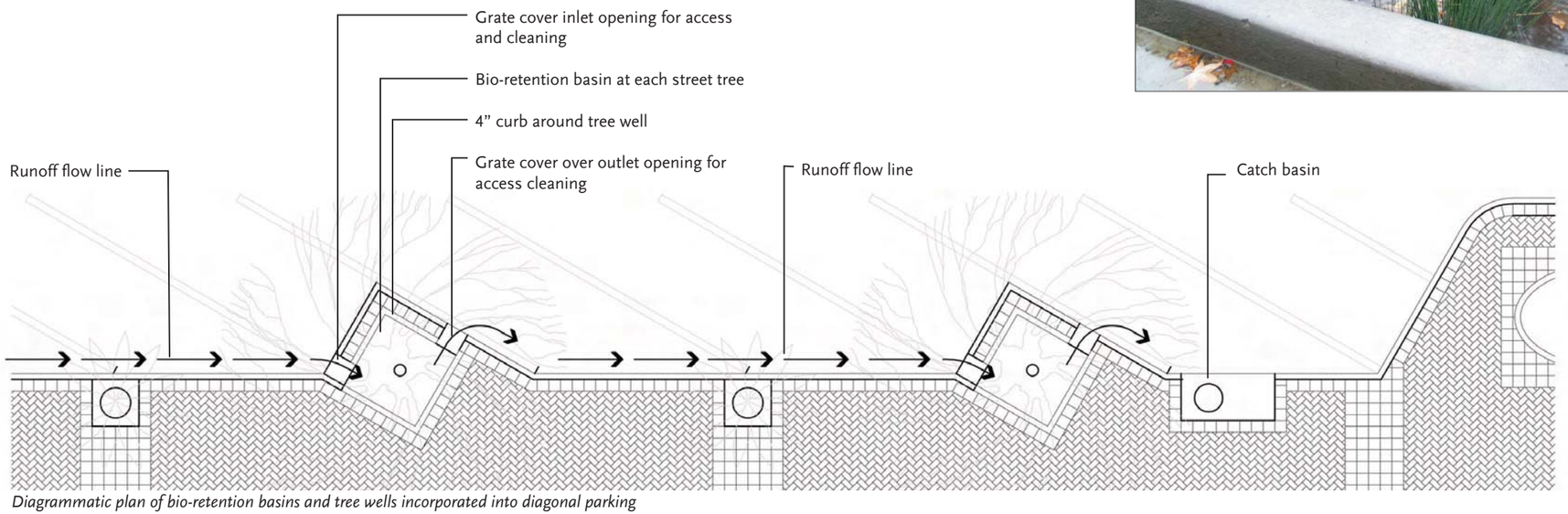
Green space is made functional to keep storm water on-site, to minimize runoff by maximizing infiltration, and to employ natural processes for water quality improvement. This is accomplished by running the storm water collected from the sidewalks and streets in the gutter through the street tree planters. The soil level in the planters is six inches lower than the street gutter. Runoff is directed into the planter through a slot into the tree well. The pollutants are caught by the landscape filter and some water is percolated into the soil. Runoff is thus filtered prior to discharge into storm drain line.



Section of bio-retention basin incorporated into tree well

Right: Bio-retention has multiple utilitarian benefits, including filtering pollutants from stormwater runoff and serving as a landscape buffer to the road pavement. The stormwater collection area is also used for aesthetic purposes, to plant grasses, flowers, and trees.

Right: Water flows from the street into the bio-retention planter to be filtered before draining into the soil and a perforated drain line, if necessary.

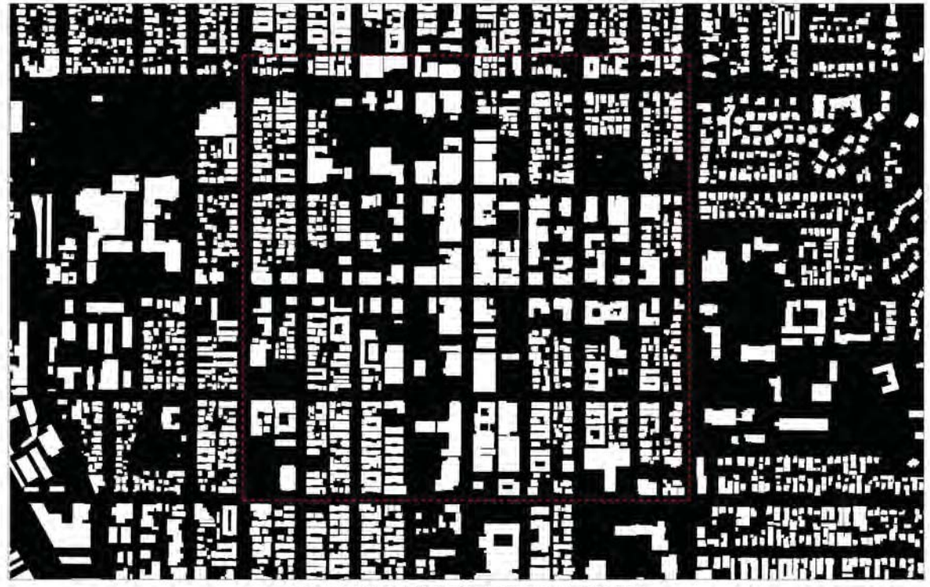


Diagrammatic plan of bio-retention basins and tree wells incorporated into diagonal parking

UPTOWN: LOCAL CONTEXT

UPTOWN WHITTIER SPECIFIC PLAN
CITY OF WHITTIER, CALIFORNIA

MOULE & POLYZOIDES
ARCHITECTS AND URBANISTS
JUNE 2006



UPTOWN: REVERSE FIGURE FIELD

UPTOWN WHITTIER SPECIFIC PLAN
CITY OF WHITTIER, CALIFORNIA

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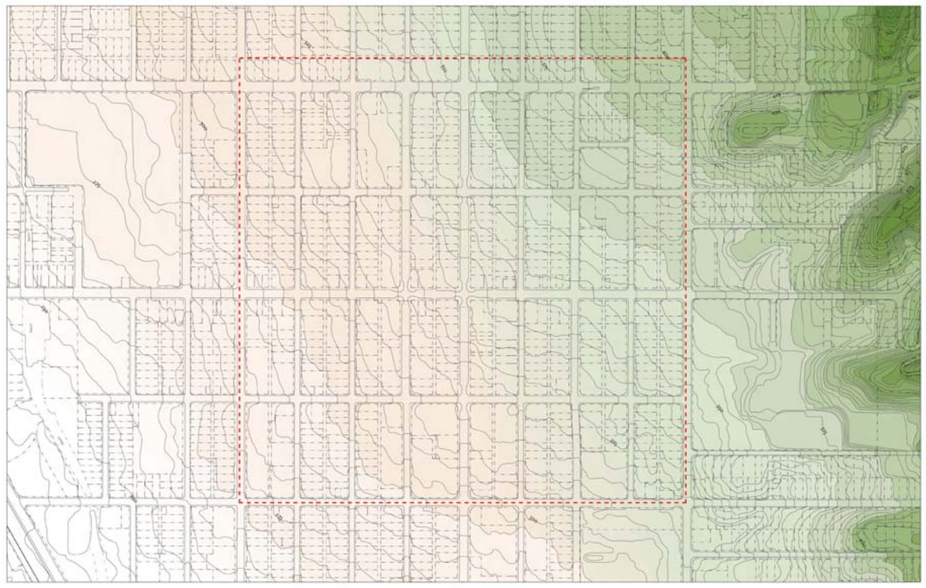

UPTOWN: TOPOGRAPHY

UPTOWN WHITTIER SPECIFIC PLAN
CITY OF WHITTIER, CALIFORNIA

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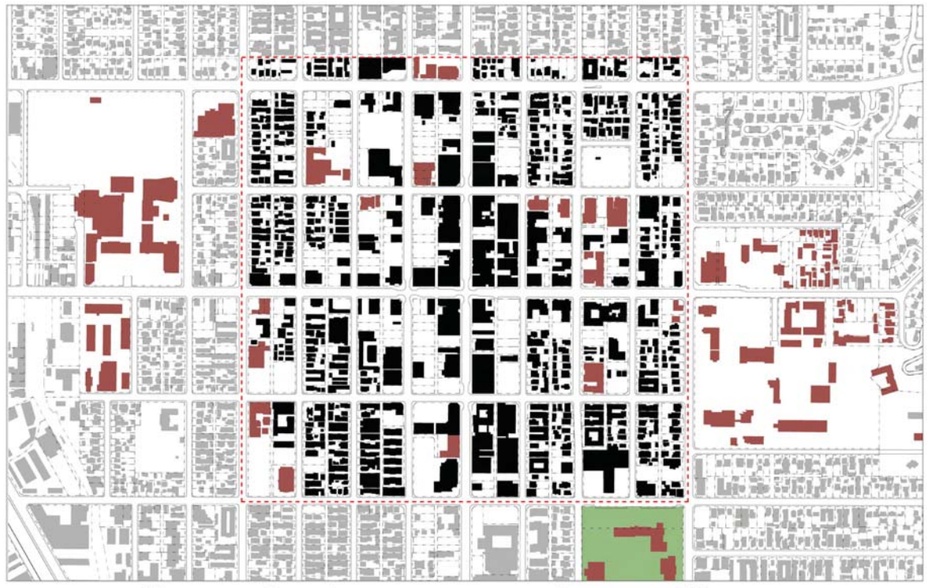

UPTOWN: CIVIC, INSTITUTIONAL AND PLACES OF WORSHIP

UPTOWN WHITTIER SPECIFIC PLAN
CITY OF WHITTIER, CALIFORNIA

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Uptown: Districts and Boundaries

Uptown Whittier Specific Plan
City Of Whittier, California

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June 2006

Uptown: Parking Network

Uptown Whittier Specific Plan
City Of Whittier, California

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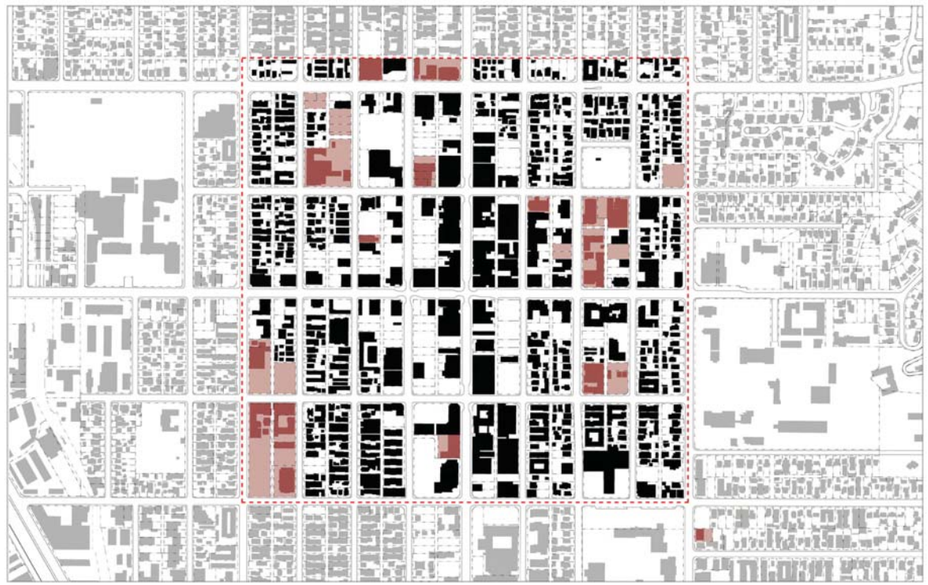

Uptown Whittier: Churches

Uptown Whittier Specific Plan
City Of Whittier, California

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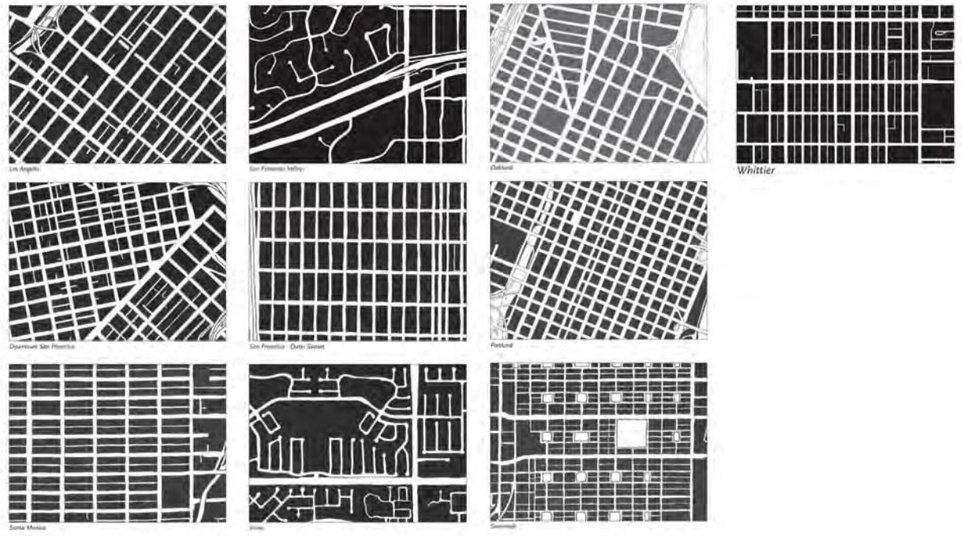

Town Comparisons

Uptown Whittier Specific Plan
City Of Whittier, California

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May 2006