III. Corridor Improvement Plan

Basic Concept

The “Concept Design Plan” on the facing page illustrates proposed streetscape improvements in the basic 14th Avenue and 12th Street Project Area. Three categories of improvements are identified: 1) Pedestrian streetscape improvements, which are proposed throughout the project area; 2) a Green Triangle Park and related roadway reconfiguration along 14th Avenue between Foothill Boulevard and E. 19th Street; and 3) a Gateway Park and related roadway reconfiguration on E. 12th Street between 13th Avenue and 14th Avenue. Pedestrian streetscape improvements along 14th Avenue from E. 19th Street to E. 27th Street are recommended as an extension to the basic Project Area.

Streetscape elements fall into the following four types: Roadways & Medians, Sidewalks & Pedestrian Crossings, Landscaping & Stormwater Management, and Design Materials. These elements and their locations are described below. Detailed recommendations to improvements for the Green Triangle Waterfront, Gateway Park, and 14th Avenue Extension are described later in this chapter. Phase I improvements are described in Chapter IV, First Phase Project Improvements.

Roadways & Medians

Bicycle Facilities - Bicycle facilities should be provided in accordance with the Bicycle Master Plan wherever possible. Class 3A “sharrow” bike routes should be provided along 14th Avenue between 12th Street and Foothill Boulevard, and Class 2 bike lanes should be provided along 12th Street from 13th Avenue to 16th Avenue.

Eliminate Slip Lanes - In order to facilitate pedestrian movement across intersections and to slow the speed of right-turn traffic, slip lanes should be eliminated wherever possible, as promoted by the Pedestrian Plan. In the 14th Avenue Project area, the slip lane at
the northern corner of 14th Avenue and Foothill Boulevard should be eliminated.

**Expand/Improve Existing Median Islands** - Existing medians should be widened and lengthened where possible. Larger medians provide more space for plantings, as well as the opportunity for new or widened pedestrian refuges at crosswalks.

The median located between the northbound and southbound segments of 12th Street should be widened from approximately 6.5 feet to 13 feet, and lengthened from 80 feet to 100 feet. The medians between 15th Street and Foothill Place should be lengthened from 80 feet to 115 feet and from 105 feet to 115 feet, respectively.

**Create New Median Islands** - New medians should be added where possible to create a consistent streetscape along the length of the corridor. A new 8 foot wide median should be added along 14th Avenue between E. 12th Street and E. 15th Street.

**Sidewalks & Pedestrian Crossings**

**Widen Sidewalks to the Right-of-Way** - Widening sidewalks is recommended in areas with narrow existing sidewalks and available right-of-way. Where sidewalks are completely replaced, new sidewalks should include a 6 foot porous paving band and/or structural soil trench to accommodate new street trees. On the north side of 14th Avenue, sidewalks should be widened to 14 feet between 12th Street and 15th Street, and to 10 feet from 18th Street to 19th Street where the sidewalk is currently 8 feet wide. On the south side of 14th Avenue, sidewalks should be widened to 14 feet from International Boulevard to Marin Way, and from 15th Street to Gleason Way. Along 15th Avenue from Foothill Boulevard to 19th Street, all sidewalks should be widened to 14 feet. Where necessary, existing fences and parking areas should be relocated out of the right-of-way.
Streetscape Improvement Concept
Chapter III: Corridor Improvement Plan

14th Avenue - Proposed Cross Sections

December 2009
Chapter III: Corridor Improvement Plan

Typical Streetscape Improvements
Replace Damaged Paving - Sidewalk areas with cracked or damaged pavement should be repaired, and missing or damaged curbs should be replaced. Sidewalk areas that are completely repaved should include a 6 foot porous paving band and/or structural soil trench to accommodate street trees, as noted above.

Driveways - Steep non-ADA-compliant driveways should be replaced. Redundant and/or unnecessarily wide driveways and sidewalk crossings should be considered for removal, especially where they interfere with other streetscape improvements such as corner crossing bulb-outs and street trees.

Narrow sidewalks and proximity to parking lots create unpleasant conditions for pedestrians.
**Bulb-Outs** - Bulb-outs are recommended at all feasible street corners to shorten crossing distances, improve visibility, and provide additional sidewalk space for pedestrians and for furnishings. They are also a means to accommodate expanded ADA-compatible ramps and to prevent illegal parking. Bulb-outs are especially effective at improving pedestrian safety and accommodation when combined with refuge islands. In general, bulb-outs should be constructed in existing no parking areas. Bulb-outs should extend 6 feet from existing curb lines when adjacent to parallel parking in order to maintain space for bicycle maneuvering at street corners. Corner curb radii should generally be 15 feet or larger, subject to City review, and internal radii should be 10 feet to accommodate...
street sweeping vehicles. Bulb-outs should be inserted at all feasible crosswalk locations within the project area.

*Pedestrian Refuge Islands* - Pedestrian refuge islands are recommended for crosswalks at major intersections where feasible, given existing landscape median and/or painted median conditions. Refuge islands provide a safe waiting area for pedestrians, allowing them to cross only half the street to wait for the next crossing signal phase or gaps in traffic. Refuges are recommended at the intersections of 14th Avenue with 12th Street, International Boulevard, 15th Street, 15th Avenue, and 19th Street.

*Narrow sidewalks, cracked or damaged paving, and steep, unnecessary driveways create tripping hazards and may be non-ADA-compliant.*
"High-visibility" or "Zebra" Crosswalks - These specially painted high-contrast crosswalks are more visible and alert motorists to high pedestrian activity areas more effectively than painted bars. They also help pedestrians with visual impairments to find and remain in crosswalk areas. As part of “high-visibility” or “zebra” crosswalk painting, “advance limit lines” are recommended to mark stop location for vehicles when pedestrians are in the crosswalk. High-visibility crosswalks shall be painted per City of Oakland standards and should be located at all unsignalized pedestrian crossings.
Chapter III: Corridor Improvement Plan

14th Avenue at International Boulevard (Facing Southwest): Existing

December 2009

Existing conditions along 14th Avenue between International Boulevard and 12th Street include three travel lanes in each direction, narrow sidewalks on the north side of the street, and long crossing distances for pedestrians.
Proposed streetscape improvements along this section of 14th Avenue include new planted and cobbled medians, bulb-outs, street trees, pedestrian-oriented ornamental street lights, improved bus stops, and Class III “sharrow” bikeways.
Landscaping & Stormwater Management

Street Trees - Deciduous shade trees are recommended to provide shade, buffer pedestrians from the roadway, and create a more attractive and inviting streetscape. Street trees should be planted at intervals of 35 to 50 feet on center in sidewalks, and 25 to 35 feet on center in landscaped medians; infill trees are recommended in medians where mature trees currently exist. Trees should be planted at 36” box size to maximize aesthetic impact and minimize the effects of vandalism. An irrigation system is recommended for areas where funding allows for extensive and consistent planting. Where sidewalks are narrow, e.g., less than 8 feet in width, Title 24-compliant tree grates should be considered for installation.

Several tree species were considered for the project area, including the Thornless Honey Locust, Chinese Pistache, Red Oak, and Scarlet Oak. The preferred species chosen for the area are the Trident Maple (Acer buergeranum) and the London Plane tree (Platanus acerifolia). The London Plane tree is recommended as the predominant street tree. Its open, spreading branching characteristics are particularly well-suited to selective pruning as needed to clear utility lines and/or trucks, buses, and other large vehicles. The Trident Maple has a smaller canopy, and is recommended in locations where utility lines are particularly low or otherwise constraining.

Porous Paving Bands / Structural Soil Trenches - In order to minimize stormwater runoff and irrigation requirements, a 6 foot wide porous concrete band and/or structural soil trench should be installed in the street tree zone of the sidewalk in areas where sidewalks are replaced. This will also provide a better growing environment for street trees. Where sidewalks are not replaced, a new 24 foot by 6 foot area with porous paving and structural soil should be installed at all street tree locations.

Median Fill - Drought-tolerant ground-cover and/or low-growing shrubs were originally recommended for planting within medians. Due to City concerns regarding maintenance, however, a porous paving surface is recommended in all new medians instead. In order to promote stormwater infiltration, porous paving should also be used to replace the concrete fill in existing medians.
Stormwater Infiltration in the Green Triangle - Stormwater infiltration and collection mechanisms should be considered as design plans for the Green Triangle area are developed. Stormwater management efforts are a State of California policy objective, and SB 790-related C.3 Technical Guidelines require biofiltration of roadway runoff under certain conditions.

Streetscape Design Materials

Pedestrian-Oriented Street Lights - City of Oakland double-head candelabra lights are recommended for installation at street corners. Approximately seventeen lights are anticipated in the first phase. These are placed at key locations along the Green Triangle and at the intersections of 14th Avenue and 12th Street, International Boulevard, and 15th Street. New luminaires are recommended around the Green Triangle and along 14th Avenue and E. 12th Street, especially at key intersections. Where new street lights are to be added at a signalized intersection, a new double-head candelabra light with a traffic signal arm should replace the existing traffic signals.

Improved Bus Stop Areas - Widened sidewalks will provide space to accommodate new bus shelters at all bus stops along 14th Avenue. In general, walks need to be a minimum of 9 feet to accommodate the shelter structure, anchoring, and pedestrian access clearances. Traffic conditions permitting, bus bulb-outs may be possible at some locations, offering an opportunity for additional lighting, seating, trash receptacles, and other amenities.
The Green Triangle

Existing Conditions- The “Green Triangle” actually consists of 7 different traffic islands of various sizes, as well as a relatively large central green. The larger islands contain turf and mature trees; the small islands are concrete “pork chops” that channel traffic movements. The fragmented nature of the islands and roadway segments, combined with fast-moving traffic and discontinuous sidewalks and crosswalks, deters pedestrians from accessing or crossing the area. As a result, the Green Triangle is not regarded or planned to function as an open space resource, despite its proximity to adjacent neighborhoods.

The isolated and fragmented nature of the Green Triangle is a result of the split nature of 14th Avenue. Between Foothill Place and E. 19th Street, 14th Avenue splits from a two-way street into two one-way segments. The southbound segment runs along the west side of the Green Triangle, and the northbound segment runs along the east side. The one-way streets encourage faster traffic along this portion of 14th Avenue, especially as traffic surges around the bend in the northbound segment.

Left turn lanes cut through to allow traffic on E. 17th Street and E. 18th Street to connect to both segments of 14th Avenue. These cuts feature wide turning radii with a sliplane-like configuration, thus contributing to the problem of fast-moving traffic.
Alternative 1: Neighborhood Park - Alternative 1 would consolidate through traffic to the east side of the Green. The layout maximizes the amount of park area, but would require the removal and re-placement of five existing mature trees. 15th Avenue would be restored as a local street, which would provide shorter crossings for pedestrians accessing the park from the residential neighborhoods to the south. A new signalized intersection would be constructed at 18th Street, which would simplify the intersection and slow traffic while still providing a connection across 14th Avenue. A stub-end street condition with emergency access would be created at the intersection of 15th Avenue and 19th Street.

Pros:
- Largest amount of park area
- 15th Street configured as local street, easing pedestrian access to park and providing direct traffic calming benefits for frontage properties.

Cons:
- Removal of five existing mature trees
Alternative 2: Parkway - In this alternative through traffic is also consolidated on the east side of the Green, but a new median is incorporated to preserve existing mature trees, creating a parkway along 14th Avenue. The triangle park would be smaller than in Alternative 1, but the new median islands would preserve the majority of the existing trees. As with Alternative 1, restoring 15th Avenue as a local street and constructing a new signalized intersection at 18th Street are recommended to increase pedestrian access to the Green and improve the environment for frontage properties.

Pros:
- Majority of existing trees preserved
- 15th Street restored as local street, easing access to park.

Cons:
- Less park area
Alternative 3: Expanded Green - Alternative 3 retains the through traffic couplet that encircles the green, and all existing mature trees. As in Alternative 2, the park area is smaller than in Alternative 1. In this option, traffic flow along 14th Avenue would follow the existing pattern. However, reconfigured and narrowed intersections at Foothill Boulevard and Independence Way, a signalized intersection at 18th Street, elimination of the 17th Street cut-through, and related pedestrian improvements would facilitate and increase pedestrian access to the green.

Pros:
- Existing trees preserved
- Lower cost
- Improved pedestrian access at Foothill Blvd and 18th Street

Cons:
- Less park area than other alternatives
- One-way couplet retains through-traffic impact on frontage properties
- Configuration continues to isolate the Green Triangle from the neighborhood
Urban Mini-Park Concept - A mini-park design concept was evaluated and endorsed by workshop participants. The basic program could be applied to any of the Green Triangle alternatives, with variations to accommodate the different sizes and shapes of the main green area. The concept includes two main areas within the mini-park: a paved plaza area and a lawn or garden area. The plaza area could include a mix of amenities including a fountain, planters, and seating areas. New infill street trees would be added around the periphery of the park.

Planting strips are recommended along 14th Avenue and Foothill Boulevard to separate the park from traffic along these roads. Along 15th Avenue, parallel parking would create a buffer from the street and would provide parking with easy access to the park. Other recommended amenities within the park include new benches and street lights. The park could also accommodate a new bus stop and bus shelter.

These photographs illustrate existing parks with uses similar to those suggested as part of the mini-park concept.
Green Triangle Mini-Park Concept
(Alternative 2 Depicted)
12th Street Improvements

14th Avenue Intersection - In the short term, relatively minor changes could be made. To shorten pedestrian crossing distances, full bulb-outs should be added to the northeast and southeast corners of the intersection; a half bulb-out should be added to the northwest corner of the intersection. Pedestrian refuges should also be added along 14th Avenue by expanding the existing median south of the intersection and installing a new median north of the intersection. Adding pedestrian refuges would require narrowing travel lanes from 12 feet to 11 feet. A landmark sign indicating the Gateway to the waterfront could also be placed at the corner of 12th Street and 14th Avenue.

16th Avenue Intersection - Traffic calming measures should be implemented at this intersection to slow traffic over the 16th Avenue overpass bridge. Full bulb-outs should be added to the north, east, and west corners of the intersection; a half bulb-out could be added to the south corner. Additional potential improvements include a widened sidewalk leading up to the intersection along the southern side of 12th Street; a relocated crosswalk for pedestrians crossing the ramp allowing southbound 12th Street traffic onto the overpass; and a landmark sign at the western corner of the intersection.

12th Street between 14th and 16th - A variety of streetscape improvements could be made to this portion of 12th Street. Regularly spaced street trees and street lights could be added to both sides of the street. Bulb-outs could be added to the intersections of 12th Street with 15th Avenue and 16th Avenue. Roadway improvements could include a northbound bike lane, which would connect to the bicycle boulevard along 16th Avenue and to bike lanes further north on 12th Street. Accommodating the bike lane would require restriping the roadway to narrow travel lanes from 12 feet to 11 feet and parallel parking areas from 8 feet to 7.5 feet.

Gateway Park / 12th Street between 13th and 14th Avenues - In the long term, the portion of 12th Street between 13th and 14th Avenues could be converted to a two-way street. The existing south-
bound segment of 12th Street between 13th Avenue and 14th Avenue would be vacated, and the northbound segment of 12th Street would be widened and reconfigured to accommodate two-way traffic. At the intersection of 12th Street and 14th Avenue, southbound traffic would make a right turn onto 14th Avenue followed by a left turn onto the existing southbound segment of 12th Street. This reconfiguration would allow the two green spaces currently split by the southbound segment of 12th Street to be joined into one larger Gateway Park. The park would provide easier access to waterfront views and would act as a gateway to the waterfront area. A gateway landmark could be installed in the park at the corner of 12th Street and 14th Avenue.
The park would also include a southbound bike lane that would connect to the existing southbound segment of 12th Street south of 14th Avenue. Routing the southbound bike lane through the park would allow bicyclists to avoid potentially dangerous traffic movements as southbound traffic turns along 14th Avenue to follow 12th Street. Northbound bike lanes would remain in the roadway. Other proposed streetscape improvements to this area include new infill street trees along 12th Street, as well as new pedestrian-oriented street lights.
Chapter III: Corridor Improvement Plan

Gateway Park / 12th Street and 14th Avenue Intersection Reconfiguration Concept

Partial Reconfiguration of 12th Street from 13th Avenue to 14th Avenue.

Full Reconfiguration of 12th Street from 13th Avenue to 19th Avenue. Graphic by DMJM Harris / AECOM.
The intersection of 12th Street and 14th Avenue currently has long pedestrian crossing distances, no crosswalk connecting the southern corner of the intersection to Vantage Point Park, and no street trees or pedestrian-oriented street lights.

14th Avenue at 12th Street (Facing North): Existing
Proposed intersection improvements at 12th Street and 14th Avenue include new planted and cobbled medians, combined traffic lights and pedestrian-oriented ornamental street lights, new bulb-outs and ADA-compliant pedestrian ramps, a new crosswalk across 14th Avenue linking areas to the south to Vantage Point Park, Class III “sharrow” bikeways, and a waterfront gateway sign at the western corner of the intersection.

14th Avenue at 12th Street (Facing North): Proposed
14th Avenue Extension

The following streetscape improvements are recommended for an expanded Project Area, extending from 19th Street to 27th Street:

**Street Trees** - Sidewalk street trees could be planted along the west side of 14th Avenue, and along the east side between 19th Street to 22nd Street. Sidewalks in these areas are 8 feet wide and able to accommodate sidewalk street trees while leaving sufficient sidewalk space. Sidewalks on the east side of 14th Avenue between 22nd Street and 27th Streets are only 5 feet wide and are not wide enough to accommodate sidewalk street trees. One option for this area would be to locate street trees in the parking zone. Between existing driveways this would result in a loss of some on-street parallel parking spaces. Alternatively, this portion of the east side of 14th Avenue could be left as is, with no street trees. Community Meeting participants recommended planting street trees in the parking zone.

**Median Improvements** - The concrete fill in existing medians should be replaced with cobbles or other porous paving surfaces, which would be easier to maintain than earth-filled or landscaped medians. Existing trees in the median should be preserved and infill trees should be added to create a consistent and attractive streetscape.

**Intersection Improvements** - Existing crosswalk striping at unsignalized intersections should be replaced with new high-visibility crosswalks. Where feasible, new crosswalks could be added to locations without existing crosswalks and pedestrian refuges should be provided at crosswalks by lengthening existing medians.
Chapter III: Corridor Improvement Plan

Street Trees Located in Parking Zone
(5' Sidewalks Too Narrow for Street Trees)

- Existing Signalized Intersection
- Existing Crosswalk
- Existing Crosswalk Upgraded to High-Visibility "Zebra" Crosswalk
- New/Additional High-Visibility "Zebra" Crosswalk
- New Pedestrian Refuge