



FINAL PLAN REPORT

23rd Avenue Streetscape Improvements

CITY OF OAKLAND
Oakland, California

September 2006



CITY OF OAKLAND

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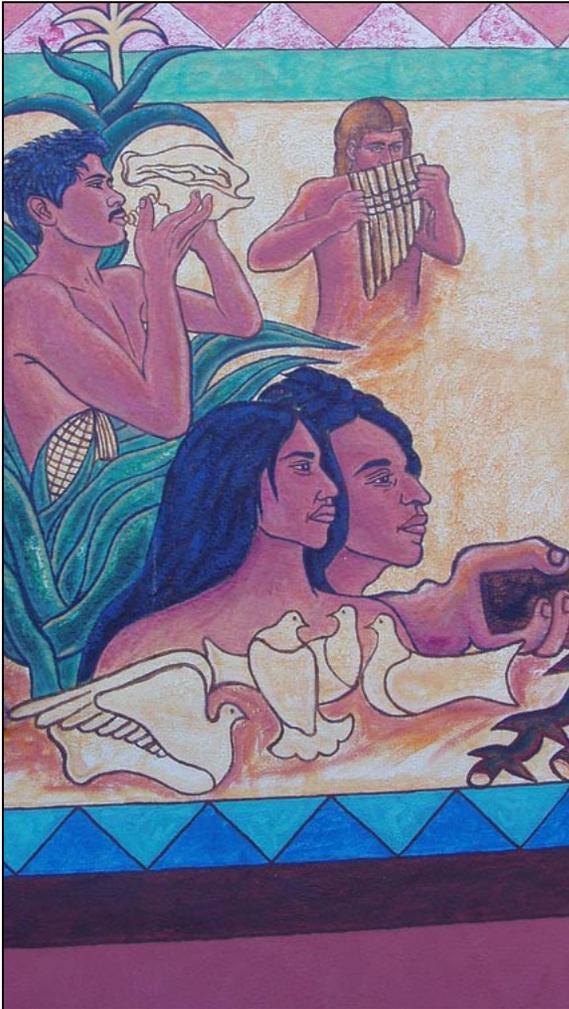


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introduction



1.1 PROJECT AREA

The project area includes 23rd Avenue between 12th Street and Foothill Boulevard, and Foothill Boulevard between 23rd and 22nd Avenues.

1.2 PROJECT GOALS

In May of 2005 City of Oakland Community and Economic Development Agency staff invited PGAdesign to prepare a conceptual design and pricing documents for San Antonio's historic 23rd Avenue Commercial District, as part of the Central City East Project Area streetscape development process. The goals of the assignment were first, introduce pedestrian safety improvements and second, make recommendations that would improve the physical appearance of the neighborhood and create a unique identity.

Crime, illicit activities, traffic accidents, sideshows, lack of maintenance, few street trees and blight all plague the project area. Residents, business and property owners want change and are committed to working to achieve it. They are supported by their council representatives and city staff in all departments.

The *23rd Avenue Community Action Plan*, prepared by Urban Ecology in 2005 based on a series of community workshops, was provided to the design team as a starting point. The plan states:

"Residents, merchants and neighborhood-serving organizations of the 23rd Avenue neighborhood share a common dream for 23rd Avenue's future, despite coming from remarkably diverse backgrounds. They believe in 23rd Avenue's potential to become a safe and bustling neighborhood center, alive with opportunities for shopping, arts, learning and cultural exchange. The 23rd Avenue Community Action Plan is a road map to achieving that vision."

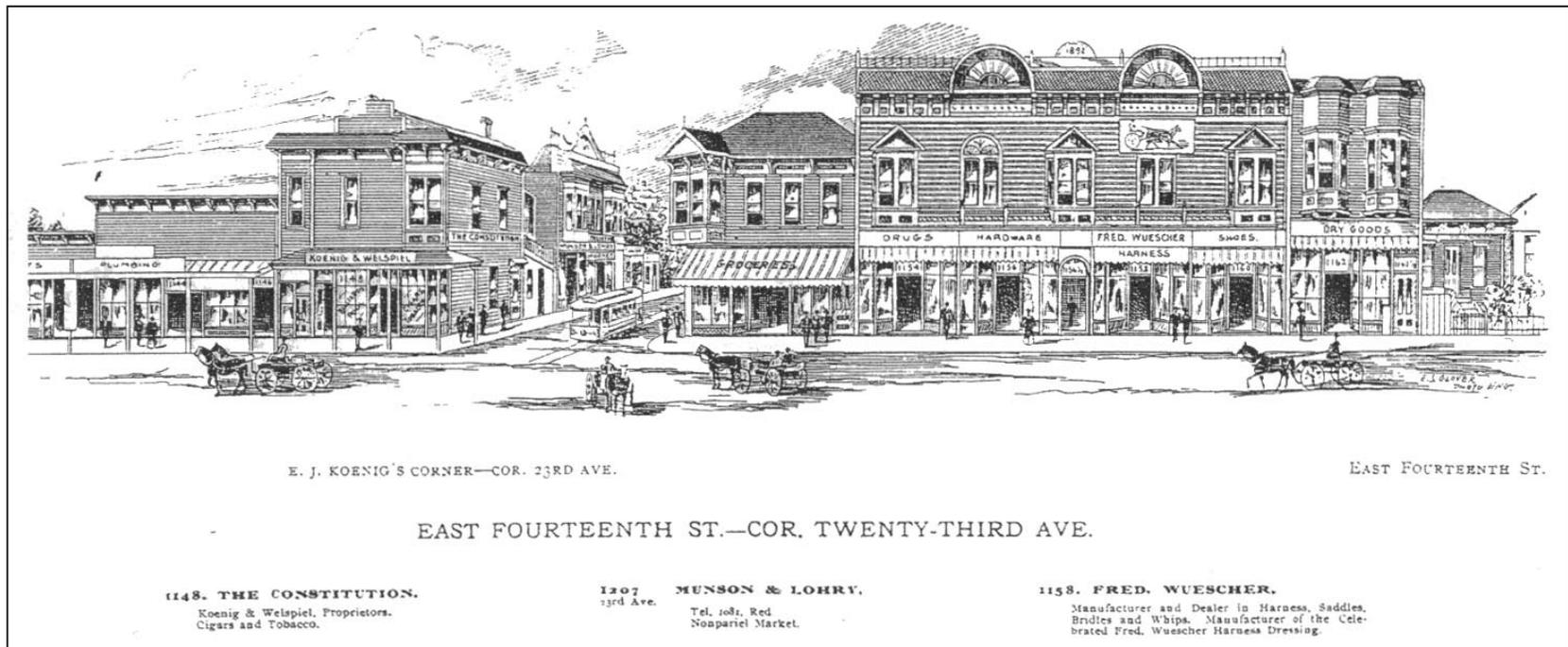
This report, along with the pricing documents (preliminary plans and construction cost estimate), summarizes the results of the planning process and community workshops.



1.3 PROJECT AREA HISTORY

The project area forms the core of the 23rd Avenue Commercial District historic district, which was documented by the Oakland Cultural Heritage Survey in 1996. The 23rd Avenue Commercial District is a turn of the century commercial district of 35 buildings on 5 whole or partial blocks. 16 historic buildings are within the project area and were built in the 1890s through the early 1900s. All are contributors to the historic district.

The district's period of significance is 1889 to 1931. According to the survey form, "It lies at the far east edge of the town of Brooklyn, which was incorporated in 1870 from the three early settlements of Clinton, San Antonio, and Lynn, and annexed to Oakland in 1872." The survey notes that, "Twenty-third Avenue was the last commercial crossroads inside the Oakland city limits. Referring to 23rd Avenue, it notes, "this street became a streetcar route by about 1890 and has scattered commercial nodes of a store or two at car stops." 23rd Avenue was one of only two East Oakland business districts featured in the "1896 *Illustrated Directory of Oakland, California*."



Early 1900s view of corner of East Fourteenth and Twenty Third Avenue. Street car running down 23rd Avenue.

1.4 PROJECT AREA DESCRIPTION

Today 23rd Avenue remains a predominately commercial district with a few single-family buildings interspersed. Current uses include a mixture of commercial and community services.

These properties have undergone varying degrees of change since their construction. The survey rates most properties as having a "fair" degree of integrity. A few are rated "poor" or "good".

Buildings are predominantly two-story with a range of architectural types that reflect their periods of construction. There are a few vacant lots and fenced-in paved lots on either side of 23rd at 12th Street, but otherwise lots are occupied by existing businesses.

Foothill Boulevard is not included in the historic district. Garfield Elementary School and Garfield Park occupy the north side of Foothill. School buildings occupy the west side of the block and the ballfield is on the east portion. This field serves primarily as a play area for students. The field is fenced with a tall chain link fence atop a concrete retaining wall along Foothill and 23rd Avenue. The field is in good condition and includes facilities for softball. Improvements to Garfield School buildings and grounds are nearing completion.



clockwise from top left: 1254-23rd Ave. (Oakland Bank, 1923-24), 1432-23rd Ave. (1920s), 1424-23rd Ave. (The Art Club, 1906), 2278-86 East 14th (Koenig Drugstore Building, 1903).

The south side of Foothill is bisected midway by Munson Way, which provides access to alley ways in this neighborhood. These alleys are unique in Oakland. Property between 22nd and Munson is exclusively single-family homes. Between Munson and 23rd, one half is occupied by single-family homes and the remainder is commercial, including the Loa Family Building and a tire shop. The single-family homes appear to be primarily early 1900s, i.e. 1920s and 1930s.

1.5 NEIGHBORHOOD ASSETS

Many original architectural details remain providing a rich palette of materials, colors & ornamentation.



top to bottom, left to right: Window grill work, decorative medallions, decorative scroll work, decorative columns, glazed tile work at entryways, tile paving.

existing conditions



2.1 INFRASTRUCTURE

23rd Avenue is a two-lane collector with parallel parking on both sides, providing approximately 40 foot (curb to curb) of asphalt pavement. The posted speed limit between East 12th Street and Foothill Boulevard is 30 mph and carries approximately 7,000 vehicles per day. Foothill Boulevard is a four-lane arterial with parallel parking on both sides, providing approximately 42 feet of asphalt pavement and 16 feet of concrete paved parking strips, for a total roadway width of 58 feet curb to curb. There is a small triangular island at the intersection of 23rd Avenue/16th Street and Foothill with vehicular traffic between Foothill and 23rd and from 16th/23rd onto Foothill. The island accommodates AC Transit users.

23rd Avenue has an 85th percentile speed of 32.7 mph at E. 19th Street. Foothill has an 85th percentile speed of 35.5 mph at 17th Avenue and 31.9 mph at 26th Avenue.

2.2 PARKING

On street parking is present on all streets within the project limits. All parking is parallel to the curb lines, and parking meters are present on 23rd Avenue between International Boulevard and E. 15th Street as well as along International Boulevard.

2.3 CURBS & GUTTERS

Most of the project area contains standard curb and gutter sections with the curb height at about 6 inches. There are conditions, however, where the curb height has been reduced to 2-3 inches most likely due to asphalt overlays being placed over a number of years without improvements to the curbs. This condition is most prevalent along 23rd Avenue between E. 12th Street and International Boulevard.

2.4 SIDEWALKS

Sidewalks in the project area are generally ten feet in width. There are numerous areas where sidewalks are in need of cleaning and/or repair; some due to utility relocations with unfinished patching, and others due to the occurrence of tripping hazards most likely caused by underlying soil settlements.



top to bottom: Looking south on 23rd Ave. towards BART; Looking north on 23rd Ave. with distant view to Oakland Hills.



2.5 PAVEMENT CONDITIONS

The pavement within the project area is asphalt concrete (AC) with areas of Portland Cement Concrete (PCC) for parallel parking along Foothill Boulevard. The pavement is in good condition for the most part, with little rutting or potholes present. There are areas, however, where cracking has developed and/or utilities have been trenched that produce an aesthetically unpleasing appearance.

2.6 CROSSWALK MARKINGS

All intersections are marked with standard 12 inch thermoplastic white or yellow pavement markings with the exception of the southern and eastern portion of the 23rd Avenue/E. 15th Street intersection.

2.7 ADA COMPLIANCE

No curb ramps exist at the intersections of 23rd Avenue/E. 12th Street, 23rd Avenue/E. 15th Street or 23rd Avenue/E. 16th Street. In addition, the signalized intersections in the project area do not contain audio indicators for visually impaired users. As mentioned above, the existing sidewalk widths do appear to meet ADA requirements for clearance to obstacles.

2.8 PUBLIC TRANSIT

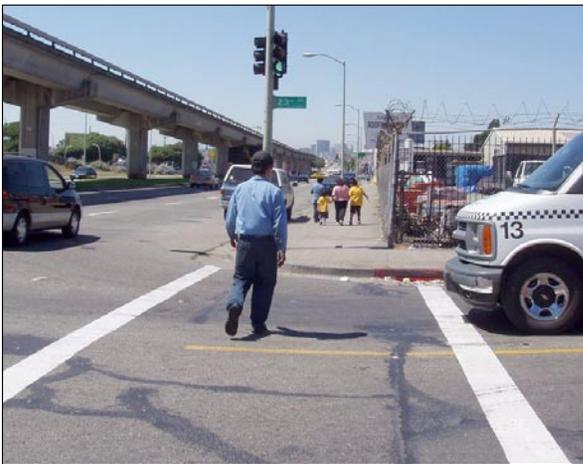
AC Transit bus lines exist on 12th Street, 23rd Avenue, International Boulevard, and Foothill Boulevard. The number 62 runs on 12th Street south of 23rd Avenue, where it then turns up 23rd Avenue. The number 82 line runs on International Boulevard, while the numbers 40 and 43 lines run on Foothill Boulevard. There is also a special school route (line 640) that runs along Foothill Boulevard while school is in session.

2.9 BIKE LANES

Foothill Boulevard is recommended to be part of the bikeway network in the 1999 Bicycle Master Plan. Separate, additional studies will be needed on this.

2.10 INTERSECTION CONTROLS

All intersections within the project limits are controlled by signals, with the exception of 23rd Avenue/E. 15th Street and 23rd Avenue/E. 16th Street. These two intersections are controlled by stop signs on E. 15th/16th Streets, while 23rd Avenue traffic does not stop.



top to bottom: Existing paving conditions showing cracked paving; Existing crosswalk markings marked with standard thermoplastic.

2.11 UTILITIES

Typical urban area utilities exist in the project vicinity, including electric, gas, telephone, cable television, and water. Utility providers include Pacific Gas and Electric (PG&E), SBC, Comcast, and East Bay Municipal Utility District (EBMUD). Approximate locations of these utilities are being requested from the various providers and will be shown on the layout sheets during development of the Preliminary Plans.



2.12 SANITARY SEWER

There is an 8 inch City of Oakland sanitary sewer line that runs down the center of 23rd Avenue and a large trunk line (22" x 33") that runs down the center of Foothill Boulevard.

2.13 STORM DRAIN

There is a 57 inch reinforced concrete pipe (RCP) storm drain on 23rd Avenue between E. 15th Street and Foothill Boulevard. At E. 15th street this RCP becomes 63 inches in diameter.

2.14 STREET LIGHTING

All of the existing luminaires within the project area are high-pressure sodium cutoff type with lamp sizes ranging from 100W to 200W. The luminaries wattage at the signalized intersections are:

- East 12th Street - 23rd Avenue: a mixture of 1-200W and 2-250W.
- International Blvd. - 23rd Avenue: a mixture of 1-100W, 1-150W and 3-200W.
- Foothill Blvd. - East 16th Street - 23rd Avenue: mixture of 2-100W, 5-150W and 2-200W.
- 22nd Avenue - Foothill Blvd.: all 200W.
- Along the mid-blocks of 23rd Avenue, from East 12th Street to Foothill Blvd.: the placement of electroliers is staggered and the luminaries vary from 100W to 200W.
- Along Foothill Blvd.: the electroliers are also staggered from 22nd Avenue to 23rd Avenue and all of the luminaries are 200W.



top to bottom: Many utility boxes are set within sidewalks; patched sidewalk.

2.15 LIGHTING LEVELS

Based on the Illuminating Engineering Society Handbook, the Average Illuminance in terms of Foot-candles (fc) for the various street classifications are:

Major Street:

Commercial	1.2 fc
Intermediate	0.9 fc
Residential	0.6 fc

Collector Street:

Commercial	0.8 fc
Intermediate	0.6 fc
Residential	0.4 fc



Standard City bus shelter and ornamental lights.

Calculating the lighting level for the project streets, the overall average illuminance for 23rd Avenue, classified as a "Collector," is over 1.1 fc. The average illuminance for the cross streets (all are "Major" except for East 15th) of East 12th, International Boulevard, East 15th and Foothill Boulevard is over 2.0 fc.

2.16 TRAFFIC SIGNALS

The results in the field inventory of the above ground traffic signal equipment, especially for pedestrian use are:

- East 12th & 23rd Avenue at southwest corner
No Ped Signal facing pedestrian crossing south across 23rd Avenue.
- East 12th & 23rd Avenue at northeast corner
No Ped Signal facing pedestrian crossing north across 23rd Avenue.
- International Boulevard & 23rd Avenue
Ped Signals exist for all crossings within intersection.
- Foothill Blvd. & East 16th Street & 23rd Avenue
Ped Signals exist for all crossings within intersection.
- 22nd Avenue & Foothill Blvd.
Ped Signals exist for all crossings within intersection.
Rotate two Ped Push Buttons 180 degrees, mounted on poles at the northeast and southwest corners, to face towards marked crosswalks.

2.17 ACCIDENT DATA

Collision diagrams collected from October 1, 1999 through September 30, 2004 from the City of Oakland and are summarized as follows:



Location	Number and type of collision					
	Property Damage Only	Injury	Fatal	Total	No. with Pedestrians involved	No. with Bicycles Involved
23rd Ave & E. 12th St	36	15	0	51	0	0
23rd Ave & International Blvd.	22	6	0	28	0	0
23rd Ave & E. 15th St	8	4	0	12	1	0
23rd Ave & E. 16th St	7	0	0	7	0	0
23rd Ave & Foothill Blvd.	15	6	0	21	0	1
Foothill Blvd. & 22nd Ave	20	2	0	22	0	0

2.18 LANDSCAPE IMPROVEMENTS

Between International Boulevard and East 15th Street there are 3, relatively young Purple-leaf Plum Trees (*Prunus cerasifera*). Perennials have been planting within the tree well under these trees. Additional trees were planted in Spring 2006.

On Foothill Boulevard there are 8 trees (Ash, Crape Myrtle and Hornbeam) along the school property and park. On the south side of the street there is one street tree at the Loa Building, but no other street trees. The front yards of the single family homes are all landscaped.

There is very little street furniture within the project area. A single bench is located at 23rd and International on the southeast corner. This bench is associated with a bus stop. It is a 6', backless bench placed close to the adjacent building. There is one bench on Foothill also provided by AC Transit. Standard City of Oakland seeded aggregate concrete trash receptacles existing within the project area.



top to bottom: Existing purple-leaf plum trees; current sidewalk conditions.

workshops & meetings



3.1 TECHNICAL ADVISORY COMMITTEE

Meetings were held with members of the Technical Advisory Committee (TAC) who reviewed and provided input to the design consultants during each task. TAC members were asked to review and comment on draft documents. They provided valuable guidance on the status of similar projects in the area and of regional planning efforts that impact the project area. This input has been incorporated into the plan documents.

3.2 COMMUNITY WORKSHOPS

Initially, the design team was provided with a copy of 23rd Ave Community Action Plan and directed to apply the design concepts from that planning document to the project area. With this as a guide, three community workshops were conducted to solicit additional input on the elements and details of what was needed. Each meeting built on what had been learned from the previous session.

This listing of agenda items summarized what occurred during each workshop.

3.3 WORKSHOP 1 – NOVEMBER 12, 2005

- Reviewed recommendations from the 23rd Ave Community Action Plan
- Presented slide show of existing conditions
- Reviewed traffic and civil design issues
- Presented preliminary design concepts
- Directed group breakout by language
- Solicited feedback
- Guided site walking tour
- Gathered opinion survey of programmatic elements



SUMMARY OF SURVEY RESULTS FROM WORKSHOP 1

There were twelve survey questions on various topics. Responses are summarized below.

- There was strong support for all proposed pedestrian safety improvements. These included:
 - a. Adding bulb-outs at crosswalks even if it meant removal of some parking.
 - b. Designing and installing more attractive crosswalk pavements.
 - c. Installing countdown heads at pedestrian crossings.
 - d. Adding continental style crosswalks to alert drivers to the presence of pedestrians.
- Strong support for increasing pedestrian lighting levels on 23rd Avenue.
- 40% of respondents felt it was “very important” to increase light on Foothill Boulevard, while 60% checked “somewhat” important or “not important”.
- 72% said it was “very important” to provide at least one covered bus shelter in the new transit plaza. Participants were equally divided on the question of whether they’d like to see a standard or custom designed shelter.
- Several suggestions were offered for how to integrate art into the redesigned streetscape. All ideas were strongly supported. The following ideas are in order of highest to fewest votes of support:
 - a. Tiles inlaid on seating elements at 23rd / International and 23rd / 15th
 - b. Special finishes and/or inlaid art tiles in new sidewalks
 - c. Decorative site furnishings such as lights, trash receptacles, bollards
 - d. New fencing at 23rd Avenue and 12th Street
 - e. Banners on light poles
 - f. Vertical elements (pylons) at 23rd / International and 23rd / 15th
 - g. Art applied to the BART structure at 12th Street



3.4 WORKSHOP 2 – JANUARY 12, 2006

The second workshop was an evening meeting and attracted a larger percentage of business owners.

- Presented and voted on street tree layout and species choices
- Explained bulbout layout and impacts to parking
- Reviewed 3 design alternatives for the transit plaza
- Showed site furnishings alternatives
- Solicited feedback



3.5 WORKSHOP 3 – JUNE 29, 2006

- Summarized the planning process.
- Identified elements from the 23rd Ave Community Action Plan that are included in the final plans.
- Explained changes to the street trees driven by subsurface utilities.
- Reviewed lighting approach and fixture alternatives.
- Offered draft plan set available for review.
- Presented preliminary construction cost estimate.

design concepts



4.1 INTRODUCTION

Specific design changes are recommended as a result of this planning effort. These changes address the need to improve pedestrian safety and/or improve the physical appearance of the project area. Specifically, the recommended changes are intended to create a unique identity for the historic 23rd Avenue commercial district. An overriding theme is that the district history be reflected in the project. A strong preference for engaging local artists came up in the community workshops.

4.2 COUNTDOWN HEADS

Description

Electronic pedestrian signal heads will be mounted to traffic lights to tell pedestrians how much time is available to safely cross the street.

Location

At all signalized pedestrian crossings.

Purpose

Improve pedestrian safety.

4.3 BULB OUTS

Description

Elongated bulb outs varying in length from 35' to 42', depending on existing constraints at each location, are proposed. They will shorten the crosswalk widths from:

- 38' to 26' on 23rd Avenue
- 58' to 46' at International
- 48 to 36' at E. 15th Street
- 48' to 42' on the east side of 23rd Avenue at Foothill
- 48' to 42' crossing Foothill at 22nd Avenue
- 57' to 45' at 22nd Avenue

Note: On the west side of 23rd at Foothill, a bulb out is added on the NW corner, but this shortening is offset by an increase in the turning radius at the bus transit plaza, so there is no net reduction in the length of the crosswalk.

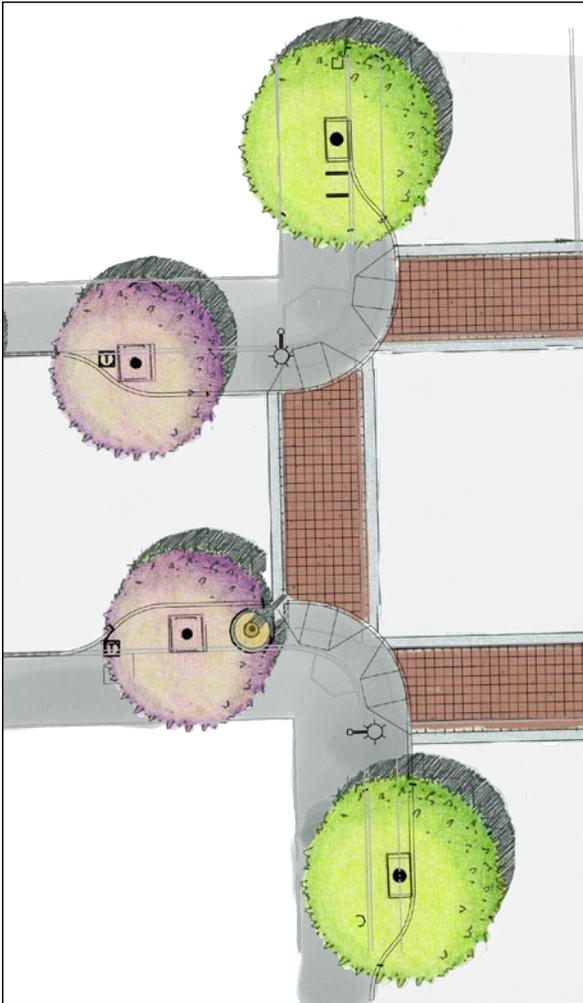
Location

Bulb outs are proposed in the locations noted above plus at Munson Way, off Foothill.

Purpose

To shorten crosswalks (shorten the distance that pedestrians are crossing driving lanes) and to enable pedestrians to gain improved visual access beyond parked cars, prior to stepping off the curb. This improves pedestrian safety.

The elongated bulb outs also provide physical space within the pedestrian area where new street trees and site furnishings can be installed. These will improve the appearance and shading in the project area.



4.4 ENHANCED CROSSWALKS

Description

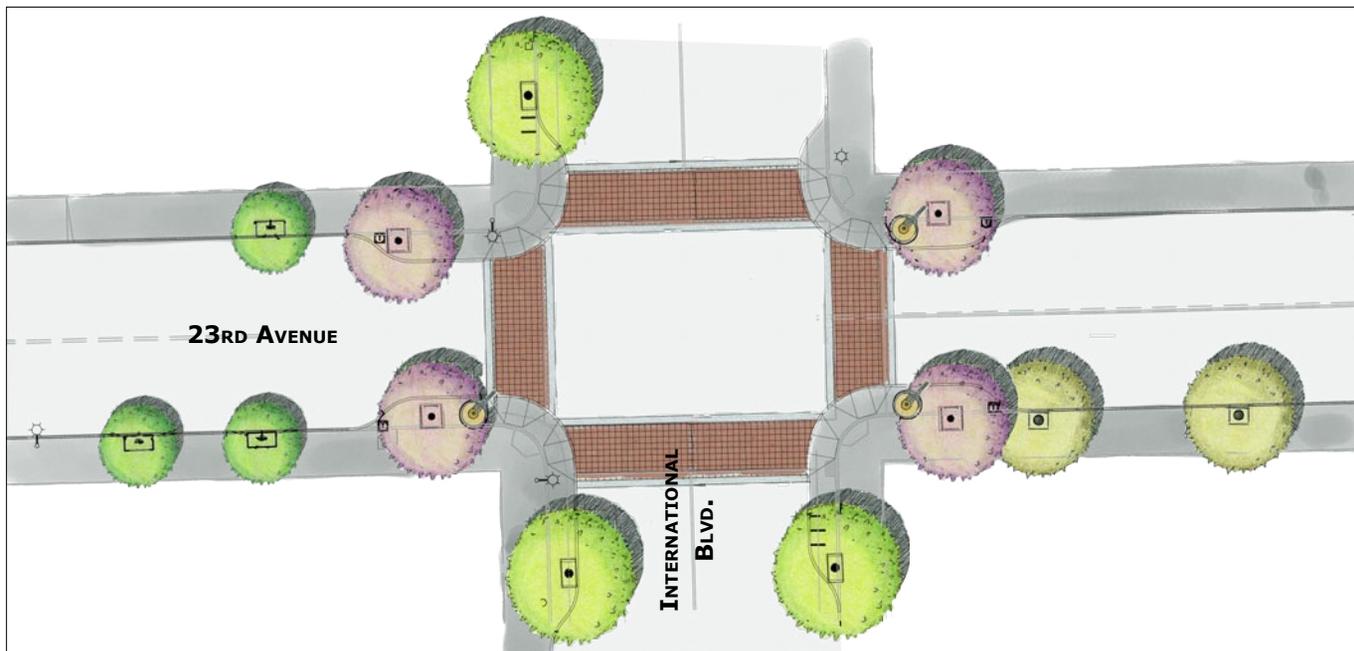
Colored, scored concrete paving with a smooth surface is proposed for crosswalks. Charcoal color with gray and red highlights to provide a mottled affect that will reduce the visibility of stains. Crosswalks will be defined and highlighted by standard 12" white, thermoplastic pavement markings.

Location

This treatment will be applied to all crosswalks crossing 23rd Avenue, International Boulevard, East 15th Street, Foothill at 23rd, Foothill at 22nd, and on 22nd Avenue on both sides of Foothill.

Purpose

To improve pedestrian safety, to enhance the appearance and to contribute to the district's unique identity.



left to right: Intersection of 23rd and International; Example of "mottled" concrete finish.

4.5 LIGHTING IMPROVEMENTS

Description

The project area is currently illuminated with city standard cobra-head fixtures. Lighting levels do not meet current city standards. The plan proposes to modify all existing light standards by adding a bracket-mounted fixture. This would occur along 23rd Avenue and Foothill. Examples of period and modern fixtures were shown. Those in attendance voted a slight preference for period fixtures. Fixture style to be determined during final design.

In addition, on 23rd Avenue new, pedestrian-scale light standards (12 – 15' height) will be installed between the existing cobra-heads. 3 additional pedestrian-scale lights are proposed for the transit plaza. Ornamental lighting will be provided within the planters in the transit plaza to feature the Redwood tree. In addition, provisions are shown to enable holiday lights to be put on the tree.

Locations

As described above, throughout the project area.

Purpose

To increase lighting levels within the entire project area and particularly within the commercial segment. To facilitate creating a festive atmosphere for holidays or other special events at the transit plaza.



4.6 NEW PEDESTRIAN PAVING

Description

The plan calls for the replacement of much of the existing sidewalk paving throughout the project area. In addition, an asphalt concrete (AC) overlay or slurry seal will be used and 23rd Avenue will be restriped. All sidewalks on 23rd Ave. will be replaced with colored, scored concrete with banding in a contrasting color.

Concrete bands and art medallions are proposed for the transit plaza. The medallions may be tile, concrete, metal, etched or another durable material. The intent is that local artists will be selected to design these elements. Additional medallions are shown in the sidewalks along 23rd Avenue. The exact number and locations to be determined. On Foothill new concrete paving is proposed wherever needed to bring the surface to an acceptable and safe standard.

Location

Throughout the project area.

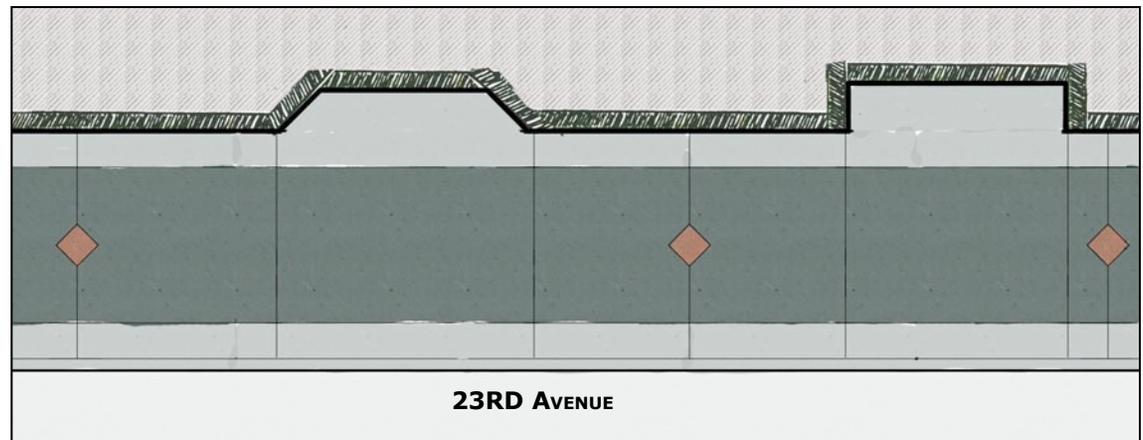
Purpose

To improve pedestrian safety by eliminating tripping hazards and to improve the appearance of the neighborhood. The medallions are an important component of the neighborhood identity.



Above, top to bottom, Colored Concrete Paving: Color A: Dark grey (Davis Dark Grey); Color B: Light Grey (Davis Silversmoke); Color C: Red (Davis Sangria.)

Right: Typical Sidewalk plan showing light grey banding at buildings and curbs, dark grey field with red accents or medallions.



4.7 TEXTURED PAVING AT INTERSECTION

Description

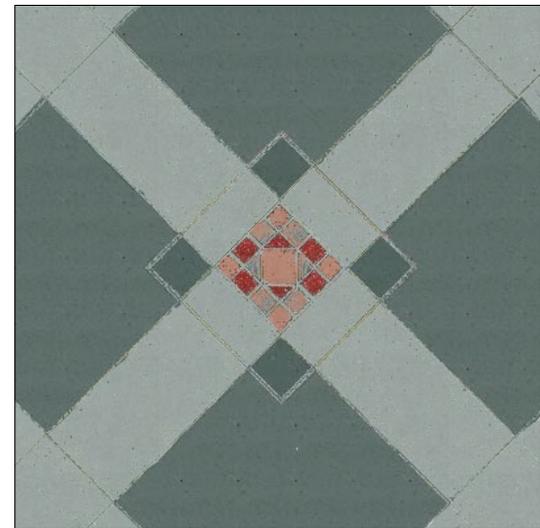
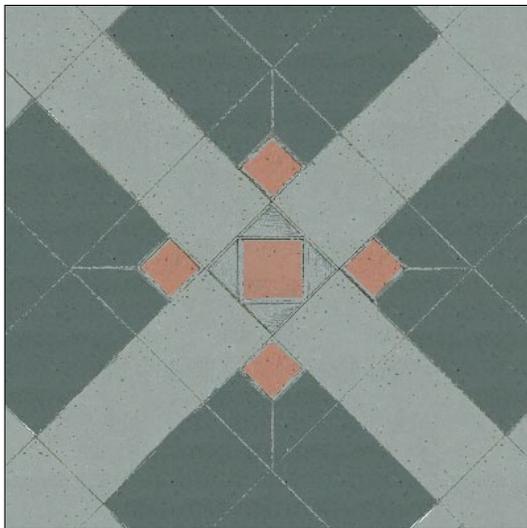
Colored, highly-textured, stamped asphalt paving intended to discourage sideshow activity. Note: This approach was reviewed with the Oakland Police Department officer who deals with sideshow auto activity.

Location

This material will fill the intersection at 23rd Avenue and East 15th Street. Limits will be defined by the crosswalks on 3 sides and a 12" wide concrete band on the north side of the intersection.

Purpose

To increase pedestrian safety by eliminating sideshows at this intersection.



left to right: Paving medallion ideas for plaza and 23rd Avenue sidewalks.



4.8 TRANSIT PLAZA

Description

A triangular shaped area 180' long and averaging 50' wide is being created by closing a short, and somewhat hazardous, segment of 16th Street (see Appendix A). Four 11' diameter, circular planters with seat-height walls will buffer pedestrians from Foothill traffic. A fifth larger planter will contain a specimen Redwood and other plants. A narrow, linear planter is proposed at the base of the mural on the façade of the Loa Family Building. A bus shelter, new lighting, site furnishings and special paving is shown in the plaza.

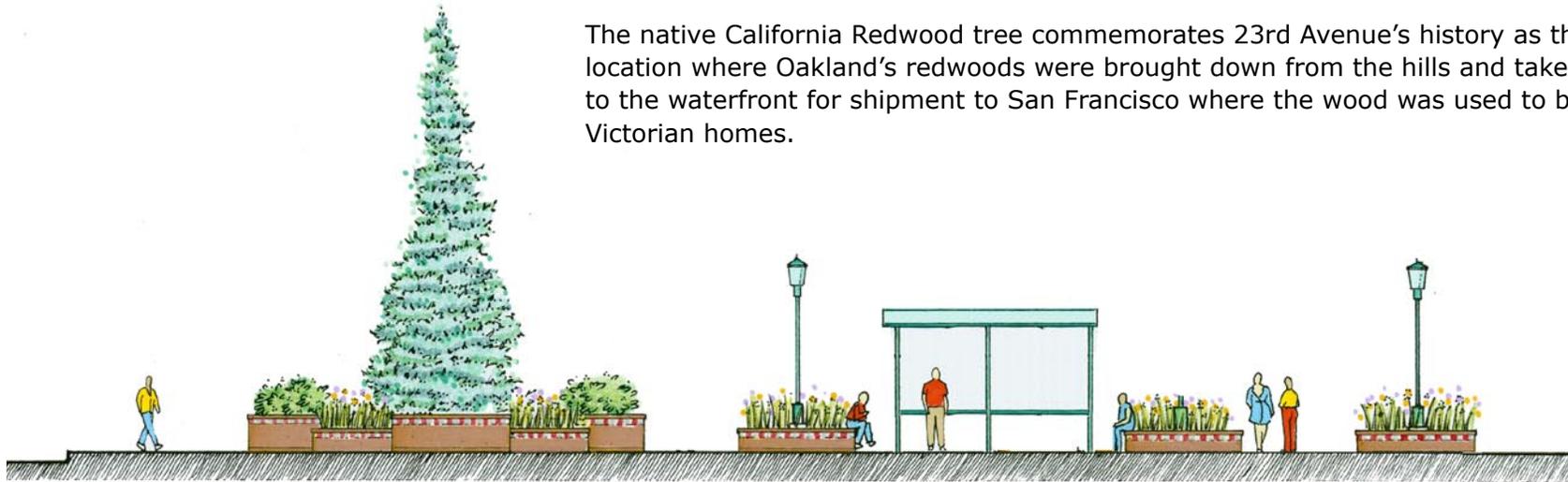
Location

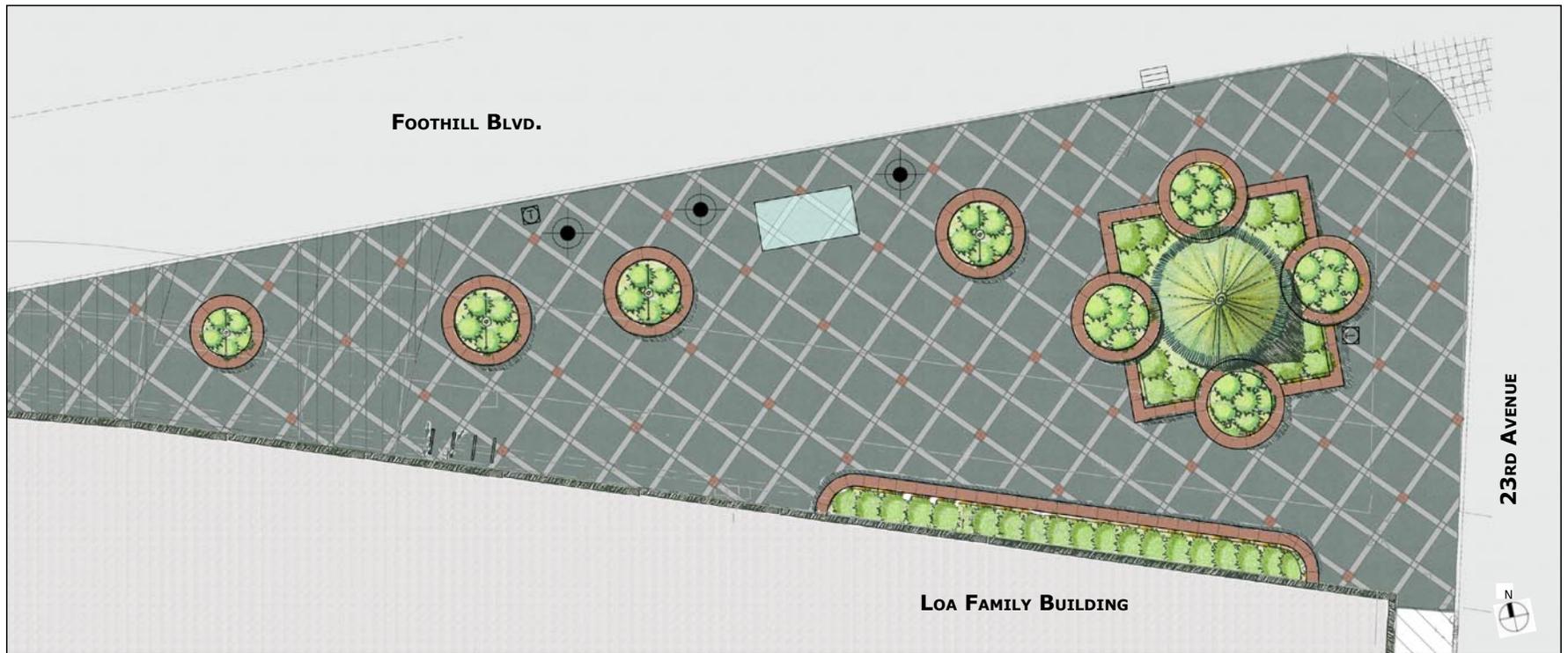
Southwest corner of 23rd Avenue and Foothill where 16th Street meets 23rd Avenue.

Purpose

The transit plaza will centralize bus transfers on Foothill and 23rd Avenue, and provide a safe and sheltered island for waiting passengers. The plaza will also provide a much needed space for neighborhood events where farmers markets, weekly events and special celebrations can occur. This is an important component of creating a new / unique identity for the 23rd Avenue Commercial district.

The native California Redwood tree commemorates 23rd Avenue's history as the location where Oakland's redwoods were brought down from the hills and taken to the waterfront for shipment to San Francisco where the wood was used to build Victorian homes.





Transit Plaza: Dark grey concrete field overlaid with light grey diagonal lines. Red squares within the paving are art medallions. Round circular planters cast in red colored concrete with decorative tiles will be planted with shrubs. The large planter with square and round shapes will be planted with a redwood tree.

4.9 SITE FURNISHINGS

Description

Given the narrow sidewalk widths space for new site furnishings is limited. Elongated bulb-outs will provide some additional area for these improvements. The types of site furnishings being proposed include bicycle racks, custom trash receptacles, planters, new pedestrian-scale light standards, one city standard bus shelter, and art pylons or vertical elements on a tiled, base that will double as a sitting area and possibly as a kiosk.

All site furnishings are intended to be extremely durable, cleanable and have readily available replacement parts.

Location

Throughout the project area. See the plan sheets for specific locations of each element.

Purpose

All of the proposed site furnishings have a functional role, and collectively they will contribute to the unique neighborhood identity and enhance the neighborhood appearance.



Sample vertical elements.



Suggested bike rack and an example of a custom trash receptacle.

4.10 STREET TREES AND OTHER PLANTS

Description

The plan shows a variety of 24" box size trees planted in new, appropriately sized, tree wells. One species is planted at all intersections. On 23rd Avenue a second species is planted between intersection trees. A third species denotes the cross streets at International Blvd. and E. 15th Street.

On Foothill, different species are proposed for the two sides of the street; one for the residential properties and an alternate choice for Garfield School and Garfield Park.

Residents have recently researched and installed a butterfly garden on E. 15th Street. See Appendix B for the plant list. Some of these species will be used in the transit plaza.

Location

Throughout the project area wherever it is possible to plant new trees. Existing driveways, lights, utilities, intersections and other site elements limit where new trees can be planted.

Purpose

To enhance the appearance of the district, to help slow traffic and thus improve pedestrian safety, and to improve the environment by providing shading and reducing carbon dioxide levels.



left to right: *Acer rubrum* (Red maple), *Carpinus betulus* 'fastigiata' (European hornbeam), *Quercus rubra* (Red oak), *Koelreuteria paniculata* (Golden Chain tree), *Sequoia sempervirens* (Coast redwood), *Tristania laurina* (Swamp tree)

additional recommendations



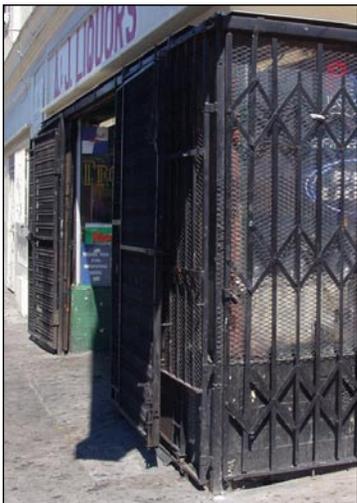
5.1 ADDITIONAL RECOMMENDATIONS

Throughout the planning / community process several additional suggestions were made regarding ways to expand the revitalization of the 23rd Avenue Commercial and neighborhood district.

- **Improved Fencing:** On both sides of 23rd Avenue at 12th Street these properties are fenced with chain link and barbed or razor wire. This intersection is an important gateway into the 23rd Avenue neighborhood. The presence of these fencing materials conveys a negative message. It is strongly recommended that the existing fencing be removed or replaced with well-designed ornamental iron fencing. Ideally, new uses for these properties would be sought.
- **12th Street Open Space:** A small “park” area exists on the south side of East 12th Street at 23rd Avenue. Redesign this open space to create an enhanced green space. This area coupled with the new transit plaza would anchor both ends of the 23rd Avenue commercial district with new gathering areas: one urban and one green.
- **Murals at BART:** Overhead BART tracks run down a landscape median on 12th Street. Piers for the overhead structure frame 23rd Avenue forming another opportunity to create a gateway. The addition of murals or other artwork applied to both the vertical piers and the horizontal structural member is recommended.



- Façade Improvement Program: Actively promote the city’s existing façade improvement program with local business and property owners to set up a coordinated improvement effort.
- Local Art: The likely success of any revitalization effort will be greatly enhanced if its residents and property owners take “ownership” of the plan and improvements. Proactively and consistently developing buy-in by business owners, local artists, students and teachers from Garfield school and others is essential.
- Maintenance: Often overlooked and rarely funded, the lack of maintenance from day one will lead to failure. New plants are fragile. They will require watering, training, protection and immediate replacement if they fail. 10% loss of trees should be anticipated and addressed as part of by the installation contract. Two years is included in the construction cost estimate. A long-term maintenance period, i.e. 1-2 years, as part of the installation contract, is strongly recommended. After that, provisions need to be made to ensure that on-going maintenance of all improvements is planned for.





6.1 BIBLIOGRAPHY

1. 23rd Ave Speed Survey Recommendations, City of Oakland
2. Oakland Cultural Heritage Survey of 23rd Avenue Commercial District, City of Oakland, 1996
3. 23rd Ave and Foothill Blvd. Collision Diagram, City of Oakland
4. 23rd Avenue & International Collision Diagram, City of Oakland
5. 23rd Ave and E. 15th Street Collision Diagram, City of Oakland
6. 23rd Ave and E. 16th St Collision Diagram, City of Oakland
7. 23rd Ave and Foothill Blvd. Collision Diagram, City of Oakland



7.1 TRAFFIC IMPACT ANALYSIS OF EAST 16TH STREET CLOSURE

The design team was asked to investigate whether the proposed closure of East 16th Street, north of 23rd Avenue to create a transit plaza, would cause any adverse traffic impacts. Turning movement counts and a traffic analysis was done by CHS Consulting. The study demonstrates that the intersection would operate at an acceptable level of service (LOS) with the closure. The plan would maintain 2 driveways, therefore no access impacts would be created. The closure would result in the loss of 5 parking spaces, but this is not considered a significant impact.



TECHNICAL MEMORANDUM

TO: Chris Patillo
FROM: Chi-Hsin Shao
DATE: April 14, 2006
SUBJECT: Traffic Impact Analysis of Closure of East 16th Street

The purpose of this study is to investigate whether the proposed closure of East 16th Street north of 23rd Avenue (Proposed Project, Figure 1) would cause any adverse traffic impact. This technical memorandum presents the traffic analysis conducted by CHS Consulting Group (CHS).

PROPOSED PROJECT

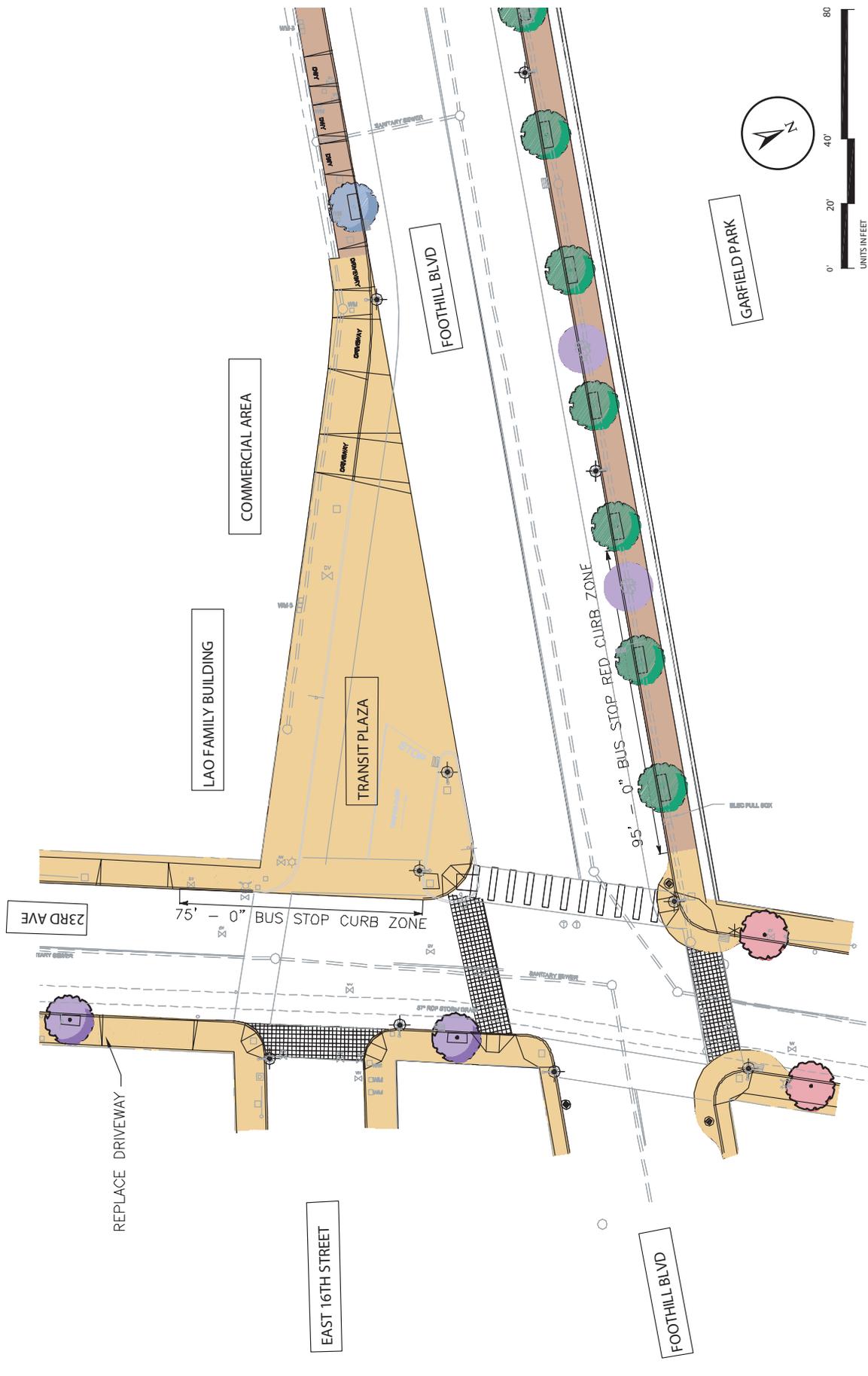
The Proposed Project is located in the San Antonio neighborhood in the City of Oakland. The 23rd Avenue Streetscape Improvements Project proposes to close East 16th Street between Foothill Boulevard and 23rd Avenue, so a transit plaza can be created on the triangular parcel bounded by Foothill Boulevard, East 16th Street, and 23rd Avenue. Closure of this block of 16th Street would cause diversion of exiting traffic on this street to 23rd Avenue and Foothill Boulevard. The two intersections that would potentially be impacted are Foothill Boulevard/23rd Avenue and 23rd Avenue/East 16th Street.

EXISTING CONDITIONS

Street Description

East 16th Street is a local street and the subject block (between Foothill Boulevard and 23rd Avenue) intersects Foothill Boulevard at an acute-angle. This block is short (approximately 175 feet long on the west side and only 37 feet long on the east side). There is no on-street parking on the east side of East 16th Street. However, there are six on-street parking spaces on the west side of this street with two driveways. One driveway leads to the Garfield Elementary School parking lot and the other one leads to an automobile tire store. Most of these parking spaces were occupied during weekday midday.

Foothill Boulevard is a north-south arterial road with four travel lanes (two lanes in each direction). It travels between Lakeshore Avenue by Lake Merritt and Macarthur Boulevard in the Eastmont District. It is also identified as a Regional Transit Street in the City of Oakland



23rd Avenue Traffic Study

Figure 1
Proposed Project



General Plan Land Use and Transportation Element, a City Route in the City of Oakland *Pedestrian Master Plan's* Pedestrian Route Network, and part of the Alameda County Congestion Management Program (CMP) network. A Class II bicycle lane has been recommended in the City's *Bicycle Master Plan*.

23rd Avenue is an east-west roadway that generally located between East 12th Street and MacArthur Boulevard. In the vicinity of the Project study area, it is a two-lane, two-way roadway with on-street parking on both sides.

The intersections of Foothill Boulevard/23rd Avenue and 23rd Avenue/East 16th Street are signalized and the intersection of Foothill Boulevard/East 16th Street is unsignalized, with East 16th Street intersects Foothill Boulevard at an acute angle. Traffic along Foothill Boulevard is uncontrolled, and East 16th Street approach is controlled by a STOP-sign. The two signalized intersections are controlled by one controller and the east-west movement along 23rd Avenue is synchronized.

Data Collection

Intersection turning movement counts for the intersections of Foothill Boulevard/23rd Avenue and 23rd Avenue/East 16th Street were collected on April 6, 2006 during AM (7:00 - 9:00) and PM (4:00 - 6:00) peak periods. The number of vehicles turning into the school parking lot off East 16th Street and their origins was also noted.

Existing Traffic Analysis

Based on the intersection turning movement counts, the AM peak hour for both Foothill Boulevard/23rd Avenue and 23rd Avenue/East 16th Street was identified as 8:00 to 9:00 AM. The PM peak hour for Foothill Boulevard/23rd Avenue and 23rd Avenue/East 16th Street was identified as 5:00 to 6:00 PM and 4:30 to 5:30 PM, respectively.

East 16th Street north of 23rd Avenue currently carries low traffic volumes, with 58 vehicles southbound and 31 vehicles northbound during the AM peak hour, and 70 vehicles southbound and 28 vehicles northbound during the PM peak hour. Most of these vehicles are through traffic. There were four vehicles entering East 16th Street from Foothill Boulevard (two each in the northbound and southbound directions) that destined to the Garfield Elementary School parking lot during the AM and there were two vehicles exiting the parking lot to East 16th Street and then right turn to 23rd Avenue.

Traffic signal timing at the two study intersections are provided by the City of Oakland Public Works Agency's Transportation Services Division. The data shows both traffic signals are actuated, have a 60-second cycle. The actuation sequence allows East 16th Street traffic to travel north and southbound while all approaches of Foothill Boulevard/23rd Avenue traffic are stopped, and then allows 23rd Avenue traffic to follow through the two study intersections.

Traffic operating characteristics of intersections are described by the concept of level of services (LOS). LOS is a qualitative description of an intersection’s performance based on the average delay per vehicle, and ranges from LOS A (free flow or excellent conditions with short delays) to F (congested or overloaded conditions with extremely long delays). LOS is the most commonly used method by local jurisdictions to assess intersection operating conditions. The LOS is based on average control delay per vehicle (seconds) for the various movements within the intersection. Table 1 presents the LOS definitions.

This report uses the *Highway Capacity Manual 2000 (HCM 2000)* methodology, published by the Transportation Research Board, which calculates vehicle delay-based LOS. The Synchro software, which implements the HCM 2000 methodology, is used in this analysis.

Table 1 – Levels of Service for Signalized Intersections

Level of Service	Control Delay (sec./veh.)	Qualitative Traffic Description
A	0 – 10	Excellent, Light Traffic
B	10 - 20	Good, Light to Moderate Traffic
C	20 – 35	Moderate Traffic, with Insignificant Delay
D	35 – 55	Heavy Traffic, with Significant Delay
E	55 – 80	Severe Congestion and Delay
F	> 80	Failed, Indicated Levels Cannot Be Handled

Source: Highway Capacity Manual, 2000 (HCM2000), Transportation Research Board, Washington D.C.

Intersection LOS analysis was performed for the existing AM and PM peak hour conditions. Table 2 shows the results of the analysis. The results show the intersections at Foothill Boulevard/23rd Avenue and 23rd Avenue/East 16th Street both operate at acceptable LOS of A and B for both existing AM and PM peak hours.

Table 2 – Existing Intersection Level of Service

Intersections	Existing AM Peak Hour		Existing PM Peak Hour	
	Delay	LOS	Delay	LOS
Foothill Boulevard/23 rd Avenue	12.3	B	11.1	B
23 rd Avenue/16 th Street	6.5	A	7.3	A

Source: CHS Consulting Group

Notes: HCM2000 control delay presented in seconds per vehicle. It is calculated from data collected and not field-measured.

TRAFFIC AND PARKING IMPACT ANALYSES

Intersection LOS Impacts

The Proposed Project would close East 16th Street north of 23rd Avenue and 23rd Avenue/East 16th Street would become a T-intersection. Table 3 presents AM and PM Peak hour intersection LOS with and without the Proposed Project. Table 3 shows that the two study intersections would operate at acceptable LOS A and B with and without the closure of East 16th Street, north of 23rd Avenue.

Table 3 – Existing and Project Intersection Level of Service

Intersections	AM Peak Hour				PM Peak Hour			
	Existing		Proposed Project		Existing		Proposed Project	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Foothill Boulevard/23 rd Avenue	12.3	B	12.3	B	11.1	B	11.1	B
23 rd Avenue/16 th Street	6.5	A	4.4	A	7.3	A	5.1	A

Source: CHS Consulting Group

Notes: HCM2000 control delay presented in seconds per vehicle.

The LOS analysis was performed with the following two assumptions:

- Traffic volumes along East 16th Street would be reassigned to Foothill Boulevard and 23rd Avenue. Specifically:
 - East 16th Street southbound traffic would be diverted to Foothill Boulevard. This traffic would then turn right onto 23rd Avenue, and
 - East 16th Street northbound traffic would be diverted to 23rd Avenue. This traffic would then use 23rd Avenue to access Foothill Boulevard and continue on Foothill Boulevard to their destinations.

Local Business Access

There is one parking lot and one business currently relies on East 16th Street for vehicular access. The Proposed Project would create new driveways to access the parking lot and the tire store. Therefore, no access impacts would be created.

Parking Impacts

The Proposed Project would cause a loss of five on-street parking spaces. The space between Garfield Elementary parking lot and the tire store can be restored along Foothill Boulevard when the proposed transit plaza is constructed. These five spaces would be lost under the Proposed Project condition. Field review shows that parking occupancy is generally high along 23rd Avenue, but spaces are usually available along Foothill Boulevard during weekday midday. Therefore, the loss of five parking spaces is not considered a significant impact.

CONCLUSIONS

This study concluded that the Proposed Project would not cause significant traffic, nor parking impacts. Both Foothill Boulevard/23rd Avenue and 23rd Avenue/16th Street intersections would operate at acceptable LOS of A and B with and without the closure of East 16th Street between 23rd Avenue and Foothill Boulevard.

Access to the Garfield Elementary School parking lot on East 16th Street would be changed from East 16th Street to Foothill Boulevard. The change of parking lot access and the loss of five on-street parking spaces are not significant impacts.

appendix B



7.2 BUTTERFLY GARDEN PLANT LIST

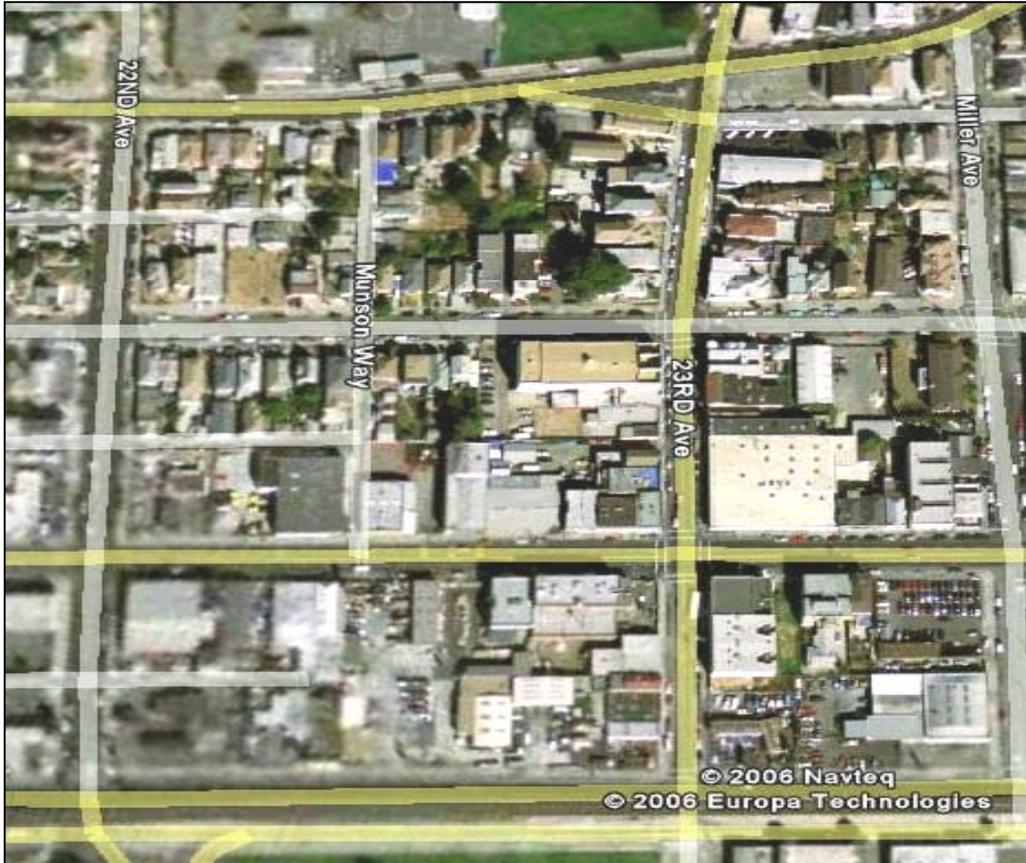
Botanical Name	Common Name
Coreopsis auriculata 'Nana'	Mouse Ear
Bulbine frutescens	Snake Flower
Rosmarinus officinalis 'Prostratus'	Dwarf Rosemary
	Arp Rosemary
Lavendula stoechas 'Otto Quast'	Lavender
Lavandula stoechas 'Spanish Eyes'	Lavender
	Various Lavenders
Limonium	Statice
Artemisia	Sagebrush
Buddleia 'Pink Delight'	Butterfly Bush
Iris douglasiana purple	Pacific Coast Iris
Helianthemum 'Laura's Pink'	Sunrose
Helianthemum 'Belgravia Rose'	Sunrose
Ceanothus griseus horizontalis 'Yankee Point'	Wild Lilac
Artemisia californica	California Sagebrush
Salvia leucantha	Mexican Sage
Salvia elegans	Pineapple Sage
Salvia	Mexican Limelight Sage
Rhamnus californica	Coffeeberry
Arctostaphylos	Manzanita
Romneya coulteri	Matilija Poppy
Asclepias syriaca	Milkweed
Echium fastuosum	Pride of Madeira
Penstemon	Beard Tongue
Mimulus aurantiacus	Sticky Monkey Flower
Centaurea cyanus	Bachelor's Button
Alcea	Hollyhock



7.3 PRELIMINARY CONSTRUCTION COST ESTIMATE

Mack5 has prepared an estimate of the cost of construction. It assumes a start date of August 2007 and a three month construction period. Gross square footage within the project area is 98,636 SF. Assigning an average per square foot cost of \$20 indicates a total budget, exclusive of soft costs of \$2,002,000.

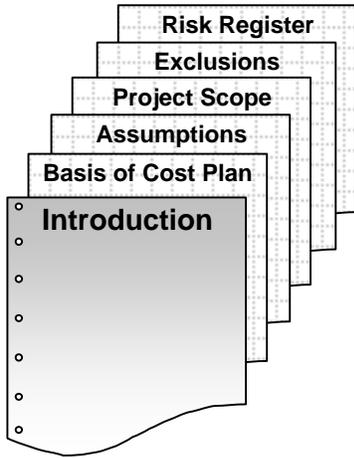
See the complete estimate and supporting documentation attached.



35% Construction Document
Cost Estimate
for
23rd Ave Improvement Project
Oakland

September 25, 2006

	Page
Commentary.....	1 - 6
Gross Floor Areas.....	7
Overall Cost Estimate Summary.....	8
Site Development Summary.....	9
Site Development Graph and Ratios.....	10
Site Development Estimate Breakdown.....	11 - 13

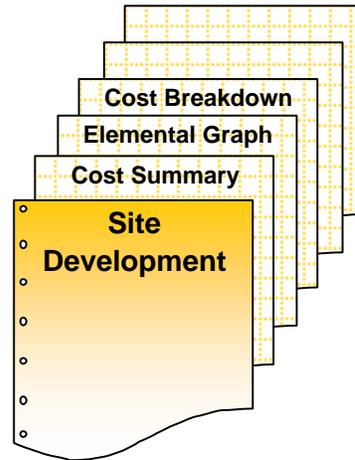
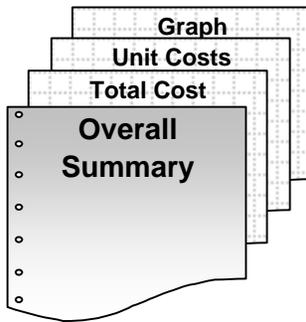


Mack5 was requested to prepare a 35% Construction Document Cost Estimate for the proposed City of Oakland 23rd Avenue Improvement Project.

The first part of the Report contains the basis of the report, the assumptions made, description of the project scope, exclusions to the costs and a risk register which contain items that may cause exposure at some future point.

The Report is split into sections (color coded for reference).

Each section contains a Cost Summary, Graph and Breakdown of Costs.



**PROJECT
INTRODUCTION:**

The project consists of improvements to 23rd Avenue in Oakland from Foothill to E12th Street junction and improvements along Foothill from 22nd Street to 23rd Street.

**ITEMS USED FOR
COST ESTIMATE:**

civil drawings	11 sheets by HQE, Inc. containing layout and demolition plans, issued by PGA design on May 9, 06
landscaping drawings	PGA Design drawings L1.1 - 1.3, L2.1 - 2.4 and L3.1 dated April 28, 06
architectural drawings	None
structural drawings	None
mechanical drawings	None
plumbing drawings	None
electrical drawings	None
specification	None
design team meetings	Meeting with PGA on 5/5/06, conversations and e-mail communication with Chris Pattillo regarding changes made to final plans.
Others	Estimate revised again based on comments from City of Oakland dated 8/23/06

ASSUMPTIONS

- (a) A start date of August 2007
- (b) A construction period of 3 months
- (c) The general contract will be competitively bid with qualified contractors.
- (c) There are no phasing requirements for the construction.
- (d) The general contractor will have full access to the site at hours permitted by law.
- (e) No volunteer work is included

PROJECT SCOPE

The following contains a general description of the scope of work included in each element of the estimate.

sitework and landscaping

Sitework includes demolition and removal of sidewalks and asphalt paving, removal of asphalt top, new concrete sidewalks, curb and gutter, colored and scored concrete paving, concrete seat walls and planter walls in plaza and asphalt overlay on 23rd avenue between Foothill and E12th Street and on Foothill and 22nd Street junction.

Landscaping includes new trees, trash receptacles, bike racks, art pylon and irrigation. An allowance is included for planting area and maintenance.

site utilities

Electrical work includes uplights and new street lights in plaza, new traffic controller, upgrade of existing traffic controller, removal of traffic lights and street lights, painting of existing street lights, countdown lights, pedestrian audible units and emergency vehicle pre-emption units.

Also included is relocation of storm drain manholes, drain inlets, adjusting grade of manholes and new storm drain. An allowance is made for replacing/adjusting utility vaults.

alternates

None

EXCLUSIONS

- (a) Volunteer work, services and products
- (b) Utility poles, cables, transformers
- (c) Communication connections
- (d) Work beyond project boundaries
- (e) Compression of schedule, premium or shift work, and restrictions on the contractor's working hours
- (f) Design, testing, inspection or construction management fees
- (g) Permit fees, utility fees and all utility work
- (h) Scope change and post contract contingencies
- (i) Assessments, taxes, finance, legal and development charges
- (j) Builder's risk, project wrap-up and other owner provided insurance program
- (k) Cost escalation beyond a start date of August 2007

risk register

- (a) An allowance is included in the estimate for street signal work. When further developed during final design this cost may increase.
- (b) Conflict with existing utilities and structures will increase the cost.

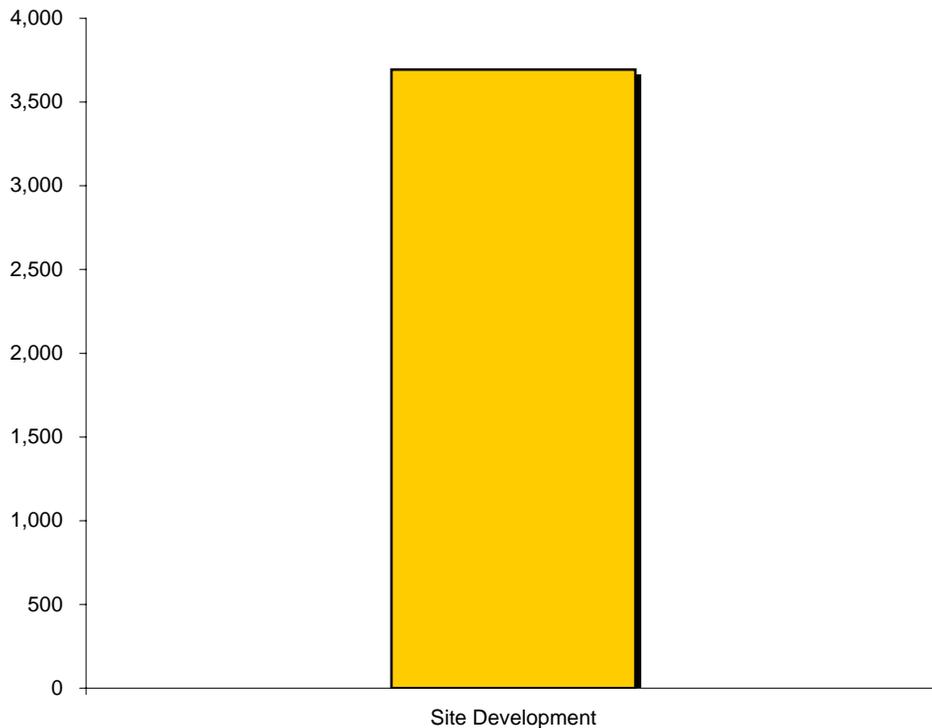
SITE DEVELOPMENT

	Enclosed	Covered	Covered (included at 50%)	Sub-Total	GFA
Site	98,636	0	0	98,636	
	<hr/> 98,636	<hr/> 0	<hr/> 0	<hr/> 98,636	98,636 SF

TOTAL GFA

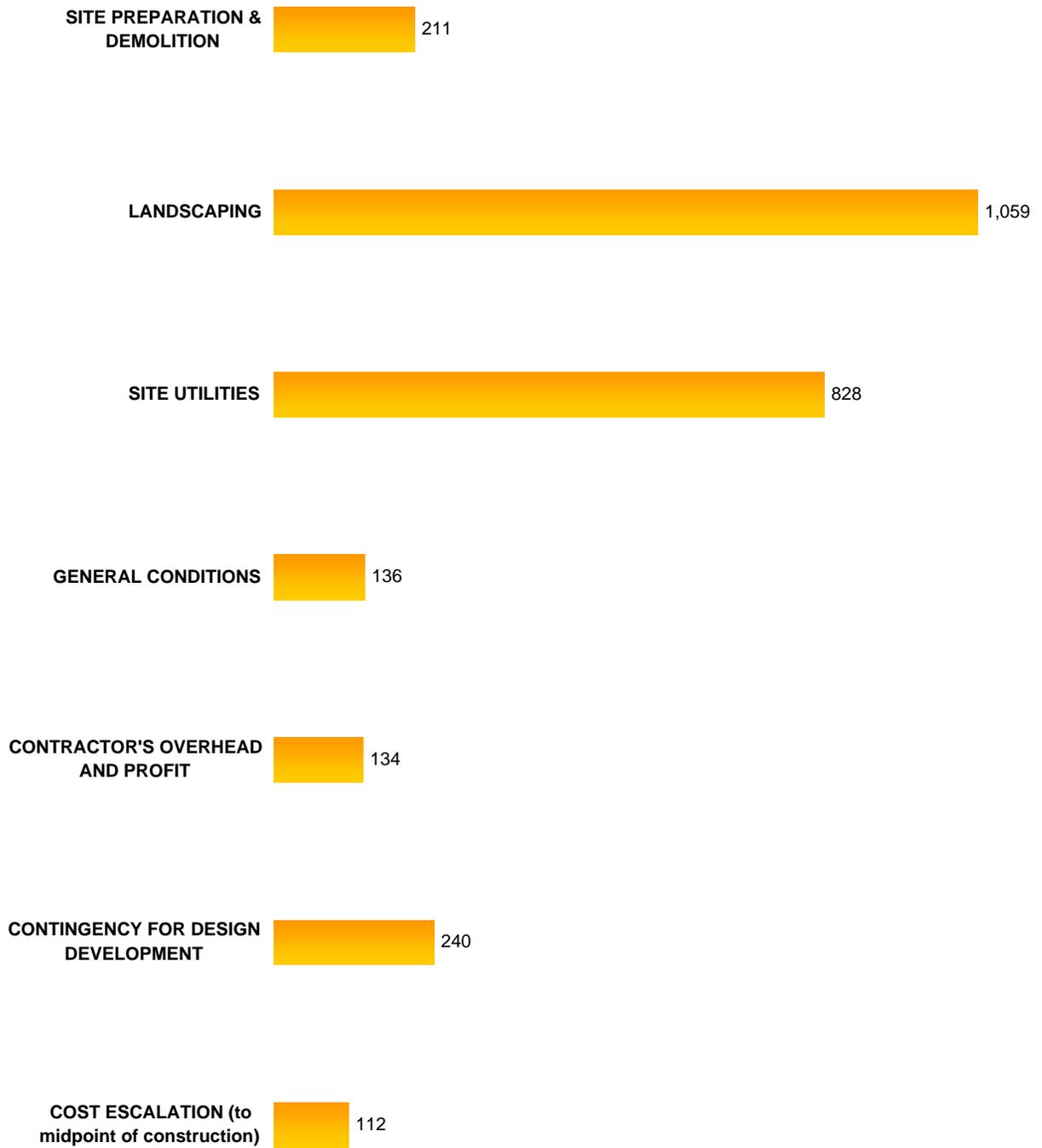
98,636 SF

	GFA	\$/SF	\$,000
Site Development	98,636	28	2,757
TOTAL CONSTRUCTION			2,757
<u>Allowances as per City</u>			
Construction Contingency @ 10%			276
Maintenance Cost for 2 years			15
Construction Management, Survey & Testing @ 10% of Construction Cost			276
Engineering & Design Project Management Reviews and Document Preparation @ 10% of Construction Cost			276
Advertising, Printing, Contract Administration @ 4% of Construction Cost			110
GRAND TOTAL			3,710



	GFA: 98,636 SF	%	\$/SF	\$,000
Site Preparation & Demolition		8%	2.14	211
Site Development		38%	10.74	1,059
Site Utilities		30%	8.39	828
Sub-total - Sitework		76%	21.27	2,098
Total - Construction and Sitework		76%	21.27	2,098
General Conditions		5%	1.38	136
Contractor's Overhead, Fee & Insurance	6.00%	5%	1.36	134
Performance Bond	1.50%	1%	0.36	36
Sub-total		87%	24.38	2,404
Contingency for Design Development	10.00%	9%	2.44	240
Cost Escalation (to start of construction)	4.25%	4%	1.14	112
TOTAL CONSTRUCTION BUDGET	August, 2007	100%	27.95	2,757

NOTE: Inclusions and Exclusions.



SITE PREPARATION & DEMOLITION	Quantity	Unit	Rate	Total (\$)
Selective Demolition and Removal				
Asphalt concrete paving	10,117	SF	1.25	12,646
Concrete sidewalk, roadway etc	22,753	SF	2.50	56,883
Concrete curb and gutter	2,873	LF	7.50	21,548
Grind asphalt	60,478	SF	0.60	36,287
Sawcut asphalt	2,615	LF	4.00	10,460
Sawcut concrete	798	LF	7.50	5,985
Soil preparation	1,453	SF	1.00	1,453
Rough grade	93,348	SF	0.15	14,002
Protect existing trees, utility meters, structures etc - allowance	1	LS	7,500.00	7,500
Traffic control - allowance	1	LS	15,000.00	15,000
Survey - allowance	1	LS	5,000.00	5,000
Erosion Control - allowance	93,348	SF	0.05	4,667
Allowance for miscellaneous site preparation and demolition works	1	LS	20,000.00	20,000
Sub-Total for Site Preparation & Demolition:				211,431

SITE DEVELOPMENT	Quantity	Unit	Rate	Total (\$)
Vehicular Paving				
Asphalt paving	438	SF	5.00	2,190
Stamped asphalt	2,042	SF	7.50	15,315
Asphalt overlay	49,773	SF	2.00	99,546
Concrete curb and gutter	3,317	LF	25.00	82,925
Striping	52,253	SF	0.15	7,838
Pedestrian Paving				
Colored concrete paving with scored bands and sand blast finish in plaza	5,986	SF	15.00	89,790
Colored concrete sidewalk with 10" band	30,719	SF	12.00	368,628
Scored concrete paving	8,225	SF	12.00	98,700
Thermoplastic band	1,603	LF	7.50	12,023
Concrete band, 12"	36	LF	10.00	360
Sidewalk ADA ramp, premium	30	EA	450.00	13,500
Decorative medallion in plaza - allow	46	EA	250.00	11,500
Structures				
Planter wall, 1.5' high, 1.5' wide with tile band on side and tile on top	400	LF	145.00	58,000
Art pylon wall, 1.5' high, 1.5' wide with tile band on side and tile on top	95	LF	145.00	13,775
Art pylon (by artist) - allow	5	EA	3,500.00	17,500
Trash receptacle - custom	10	EA	1,250.00	12,500
Bike rack	13	EA	750.00	9,750
Bus shelter	1	EA	7,500.00	7,500
Mural - allowance	1	EA	20,000.00	20,000

Landscape Planting				
Planting area - allowance	1,453	SF	15.00	21,795
Tree, 24" box	52	EA	450.00	23,400
Tree, 60" box	1	EA	3,500.00	3,500
Irrigation	1,453	SF	7.50	10,898
Controller	1	EA	5,875.00	5,875
Stainless steel enclosure	1	EA	2,100.00	2,100
Concrete curb boxes - allowance	1	LS	25,000.00	25,000
Traffic control - allowance	1	LS	15,000.00	15,000
Allowance for miscellaneous site development works	1	LS	10,000.00	10,000
Sub-Total for Site Development:				1,058,907

SITE UTILITIES

	Quantity	Unit	Rate	Total (\$)
Electrical				
Plaza				
Remove existing traffic light	2	EA	2,500.00	5,000
Remove existing street light	1	EA	1,500.00	1,500
Signal light controller	1	EA	21,375.00	21,375
Electrical service location	1	LS	20,625.00	20,625
Planter uplights	4	EA	1,250.00	5,000
Pedestrian light (countdown) including poles	3	EA	8,000.00	24,000
Pedestrian audible units (polaras)	1	LS	24,000.00	24,000
Receptacle-weatherproof	1	EA	750.00	750
Bus kiosk connection	1	LS	4,500.00	4,500
Traffic control	1	LS	20,000.00	20,000
Video detection cameras	4	EA	10,000.00	40,000
Modify existing signal poles	1	LS	40,000.00	40,000
Electrical conduit work	1	LS	50,000.00	50,000
Emergency vehicle pre-emption units	1	LS	12,000.00	12,000
23rd Avenue				
Paint existing street light head	20	EA	1,075.00	21,500
Pathway light on existing pole	20	EA	3,000.00	60,000
Pedestrian light (countdown) mounted on existing poles	24	EA	2,825.00	67,800
Pedestrian audible units (polaras)	1	LS	72,000.00	72,000
Traffic control	1	LS	50,000.00	50,000
Replace lighting pull box	20	EA	580.00	11,600
Modify base and pole	20	EA	3,500.00	70,000
Add street luminaire to existing system	10	EA	7,500.00	75,000
Signal controller upgrade	1	LS	20,000.00	20,000
Storm Drain				
Maintaining (E) drainage	1	LS	5,000.00	5,000
Protect (E) drainage	1	LS	5,000.00	5,000
Examine (E) conditions	1	LS	5,000.00	5,000

Conflict w/ (E) utilities	1	LS	5,000.00	5,000
Demo (E) MH	1	EA	2,728.00	2,728
Adjust (E) MH	1	EA	845.00	845
Install (N) MH; to 10' invert	1	EA	9,539.85	9,540
Demo (E) DI	8	EA	1,364.00	10,912
Adjust (E) DI	2	EA	786.00	1,572
Instal (N) DI; to 8' invert	7	EA	2,256.50	15,796
AC pavement cut and replace (w/dowels)	420	SF	38.80	16,296
12" dia storm piping w/excavation; to 10'	195	LF	124.69	24,314
Connect to (E) MH	2	EA	316.00	632
Connect to (E) SD	4	EA	316.00	1,264
Traffic control - allow	1	LS	7,500.00	7,500

Sub-Total for Site Utilities:

828,048