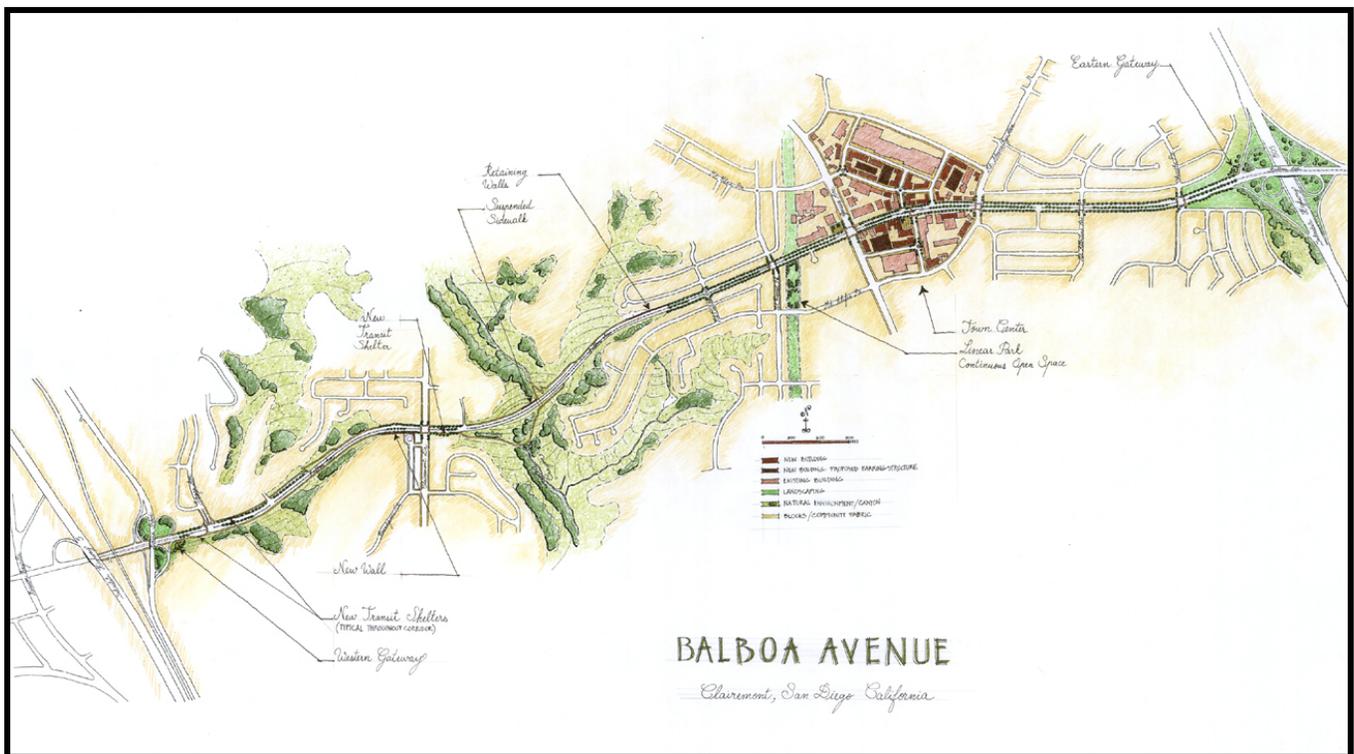


Balboa Avenue

REVITALIZATION ACTION PROGRAM



ADOPTED
SEPTEMBER 12, 2005



THE CITY OF SAN DIEGO



THE CITY OF SAN DIEGO

Balboa Avenue Revitalization Action Program

Adopted September 12, 2005

CITY OF SAN DIEGO

DEPUTY MAYOR

Toni Atkins

COUNCIL

Scott Peters

Tony Young

Brian Maienschein

Donna Frye

Jim Madaffer

CITY ATTORNEY

Michael Aguirre

CITY MANAGER

P. Lamont Ewell

Special Thanks

The City of San Diego would like to thank those citizens involved with the Balboa Avenue Citizens Advisory Committee, Clairemont Action Committee, Clairemont Mesa Planning Committee, and Clairemont Town Council whose support made the Balboa Avenue Revitalization Program a success. To Congresswoman Susan Davis for obtaining state resources and establishing a foundation of political support for the program. To Assemblyman Howard Wayne for initiating the project and securing the funds for the beautification of the project to take place. To Councilwoman Donna Frye for ensuring that the project would meet the community's expectations and championing the effort of the Balboa Avenue Citizens Advisory Committee. To Clairemont High School for its involvement in the design efforts to beautify the fencing on Clairemont Drive. To SANDAG for its contribution and support of the project by awarding funds toward the goal of a walkable community. To CALTRANS for its support in transferring the program to the City and ensuring a smooth transition. And finally, to members of the community who were instrumental in helping to shape the direction of the program. Without them, the Balboa Avenue Revitalization Program would not have become a reality.

BALBOA AVENUE CITIZENS ADVISORY COMMITTEE

Arlene French	Elliot Hurwitz
Tom Schmidt	Billie Hame
Tom Alspaugh	Billy Paul
Beverly Boys	Janet Davé
Chales Kokes	Eleanor Mang
Dan Hildebrand	Butch Biendara
Dave Wilhite	Lynn Little
Kathy Reagan	Dave Schumacher
Sally Kaufman	Martin Schmidt
Don Steele	Glen Schmidt



COUNCIL DISTRICT 6

Steven Hadley, Chief of Staff
Keith Corry, Council Representative

Mary Ann Kempczenski, Council Representative

CITY OF SAN DIEGO STAFF

S. Gail Goldberg, Planning Director
Betsy McCullough, Deputy Planning Director
Bob Manis, Planning Dept. Program Manager
Brian Schoenfisch, Senior Planner
Kevin Guy, Associate Planner
Theresa Millette, Associate Planner

Jennifer Cordeau, Assistant Planner
Siavash Pazargadi, Senior Traffic Engineer
Nicholas Abboud, Associate Traffic Engineer
Abi Palaseyed, Associate Engineer
Mike Arnold, Associate Engineer
Richard Leja, Senior Engineer

CONSULTANTS

Walkable Communities, Inc.
Dan Burden, Director
Michael Wallwork, P.E.
Alan Fujimori, AICP

Trias & Associates
Ramon Trias, AICP, Town Planner
Celine Harden

Community Partners, LLC
Sue Newberry, Principal

Disclaimer:

The contents of this report represent the knowledge, experience, and expertise of the citizens and authors in providing ideas and concepts to improve safety, access, mobility and livability through streetscaping, transit, walking, bicycling enhancements and other traffic management strategies. This report does not constitute a standard, specification, or regulation, and is not intended to be used as a basis for establishing civil liability. The decision to use any particular measure should be made on the basis of engineering studies of the location. This report is not a substitute for sound engineering judgment. Adherence to the principles found in this report can lead to an overall improvement in neighborhood and community livability and traffic.



Table of Contents

INTRODUCTION	1
<i>Background and context</i>	
VISION PLAN PROCESS	2
<i>Review of the community visioning process and the concerns raised through the Focus Groups, Community Meetings, Walking Audits, and Design Tables</i>	
ANALYSIS	3
<i>Description of current conditions, opportunities, and concepts for the Balboa corridor</i>	
DESIGN CONCEPTS	8
<i>Ideas that should shape the corridor</i>	
RECOMMENDATIONS	12
<i>Specific recommendations that should be considered for each of the four segments along the corridor</i>	
IMPLEMENTATION AND FUNDING STRATEGIES	34
<i>Overview of implementation and of Federal, State, and Local funding sources</i>	
APPENDIX A	38
<i>Minutes of Focus Group sessions</i>	
APPENDIX B	50
<i>Balboa Avenue Corridor Study Phase 1 Slides</i>	
APPENDIX C	61
<i>Prioritized recommendations for Balboa Avenue</i>	

Introduction

Balboa Avenue is a public right-of-way traversing the communities of Clairemont and Kearney Mesa in the City of San Diego. In 1996, State Legislators representing San Diego formed the Balboa Avenue Citizens Advisory Committee (BACAC) as the officially recognized community liaison with Caltrans during a repaving project along Balboa Avenue. More than a simple repaving was desired, and community lobbying for additional improvements resulted in partially completed median enhancements. Following the partial completion of the enhancement project in 1999, TEA-21 funds were designated (in 2000) to complete the median enhancements and landscape the Clairemont portion of the corridor. During the same time period, the State negotiated the relinquishment of Balboa Avenue to the City of San Diego. With the relinquishment came an opportunity to obtain pedestrian-oriented improvements that had not been possible under State Highway Code.



The BACAC asked the City to apply for a SANDAG Walkable Communities Demonstration Program grant in order to create a vision plan that included pedestrian-oriented improvements for the Clairemont portion of Balboa Avenue. By late 2001, the City accepted the route from the State, the State provided additional funds to bring Balboa Avenue up to City standards, and the Walkable Communities grant was awarded. The consultant team of Walkable Communities, Inc. was contracted by the City's Planning Department to implement the SANDAG award and to create the Vision Plan for Balboa Avenue. The consultants conducted an intensive collaborative design effort, which consisted of a five-day "charrette" that developed a high degree of public involvement in the planning process for future improvements. The Team also completed a Walkability Study which is used as a base document for this Revitalization Action Program (RAP). This RAP has been developed by the City of San Diego with the support and cooperation of the BACAC. It describes the events of the charrette, examines the current conditions of the corridor, and discusses design concepts that form the basis of the recommendations made. Bold numbers that appear in parenthesis in the text, i.e. **(S4-S3)** refer to the table in Appendix C beginning on page 61, which provides prioritized recommendations for Balboa Avenue. Additional engineering evaluation that considers more detailed information will be necessary before preliminary plans are developed.

Analysis

Current Conditions



A transit stop at this site was eliminated as a method to reduce mid-block crossing. The new stop is not convenient to the shopping that riders want to access.



Long distance between signalized crosswalks prompt people afoot to seek more convenient crossing.



A typical intersection in the Balboa Corridor.

Balboa Avenue is a public right-of-way stretching between the east and west boundaries of the Clairemont Mesa community planning area in the City of San Diego. Right-of-way width varies from approximately 84 feet to 120 feet. The route has evolved over the years from a rural road into a street treated primarily as a passage connecting heavily congested streets and freeways on either end of the corridor. Street sections vary from two to four lanes, in each direction, throughout the corridor. Drivers pass through natural, commercial, and residential areas adjacent to the street. High speeds promoted by the design of the entry and exit points, big box retailers set back from the street, nondescript strip malls, extended fences, and widely spaced intersections help make Balboa Avenue an environment that is suboptimal for safety and aesthetic reasons.

The overall appearance of the street does not suggest that Balboa Avenue is the heart of a community. Land development patterns do not provide many connections between the natural, commercial, and residential areas or to other sections of the Clairemont community near Balboa Avenue. The street itself creates a divider between neighborhoods because of the difficulty in crossing the street and the lack of continuous sidewalks along the corridor. The street generates traffic noise that disturbs adjacent neighborhoods. The canyon areas are highly valued by the community, but there is poor access to the area, and traffic travels through the canyons often at speeds over 55 mph. The numerous skid marks along the corridor suggest some drivers must stop unexpectedly, possibly because of their high speed. There is no experience of place for those passing through the corridor. The Balboa Avenue corridor has no distinguishing characteristics that highlight its unique identity as a place where people live, work, and play.

Analyses of traffic conditions are based on the limited data available and field observations of traffic conditions during different times of day. “Peak hour flow” means the number of vehicles passing along a road during its busiest hours, usually during the morning and evening commutes. Typically, this number represents ten percent of the average daily traffic count. The peak hours usually reflect normal traffic and high levels of commute trips.



People outside of cars have a variety of needs for safe access.

Although the volumes are quite high, the traffic is distributed throughout the day. Instead of the typical ten percent peak flow during the peak periods, Balboa Avenue is operating at approximately six to eight percent. The road is not as congested as a road carrying the full ten percent during the peak hour. The relative lack of congestion results in higher speeds. Balboa Avenue has some spare capacity as it currently is configured. A road with fewer lanes will carry the traffic without congestion. Providing an excess number of lanes over its traffic-carrying needs generates something akin to a free flow condition. This condition tends to encourage much higher speeds than are desirable, especially in the off-peak periods.

Opportunities

Streets comprise a large percentage of any community’s public space. Streets that are built only to provide access and mobility to vehicles thwart the purpose of communities by isolating and segregating people. Great streets facilitate people acting and interacting, and are desirable places to spend time.

The transfer of ownership from Caltrans to the City of San Diego creates a great opportunity to transform Balboa Avenue into a street that better meets the needs of the community. Funding is available for upgrades to the street, and representatives of the City want to know how area residents would like the funding to be spent. Participants of the charrette asked for a safer, more aesthetically pleasing street. They asked for a sense of unity along the corridor, and for better conditions for those not driving in cars. They asked that the street serve the community first, and drivers passing through secondarily.



The location of pedestrian push buttons and the design of ramps along Balboa Avenue often inconvenience walkers.

The corridor has the elements necessary for the transformation from merely another state highway to a great community street. Streets of any size can be great streets, serving as vital connections, rather than barriers, for people traveling and living along the corridor. Balboa Avenue is rich with opportunity. Its width, excessive for the vehicle volume, holds the promise of safety and convenience for those walking. Its commercial core has the potential of a great stage for activities that bring people together and create a sense of place. Its proximity to Tecolote Canyon allows a glimpse of a zealously guarded natural habitat surrounded by urban development.

Segments

The vision and conceptual designs that resulted from the charrette are depicted in the Vision Map below. For simplicity, the corridor has been divided into four segments starting in the east. Each segment contains unique opportunities to realize the overall goal of creating a great boulevard that better serves its community.



Segment One: Eastern Gateway (I-805)



This segment starts along the eastern boundary of the Clairemont community beginning at I-805. There is an opportunity to reduce street width in this segment. The space gained could be used to create an aesthetically pleasing entrance designed to reduce speed. Landscape and streetscape elements to identify the boundary of the community could begin near the ramps. A significantly visible gateway at this eastern border would introduce a theme that could continue through the corridor, creating a unified look.

Segment Two: Community Core



This commercial area on Balboa Avenue is referred to as the Community Core.

The shopping center area that begins at Mt. Abernathy Avenue is central to the entire Clairemont community. Although every community needs a town center, the commercial district does not feel like one now, in part because the traffic patterns have no clear and readable order. However, the large asphalt parking lots create opportunities for private property owners to develop a pedestrian scale environment where foot traffic takes precedence over motor vehicle traffic.

There is adequate acreage to accommodate the buildings needed to create a vital center. Balboa Avenue's wide street section continues through this segment, providing the potential for reallocation of public space to create a more comfortable, slower speed environment. A narrower roadway could accommodate planter strips, rows of trees, and enhanced pedestrian facilities.

Linear space such as the San Diego Gas and Electric (SDG&E) right-of-way is ideal civic space. It could provide linkages to the recreational and shopping areas of Clairemont. The connections can be made not only to Balboa Avenue, but also to other destinations within the community. Precedent for public use has been established by the use of the space as a parking area adjacent to one of the shopping areas. The right-of-way could serve as a north-south axis of the Clairemont community, with Balboa Avenue as the east-west axis.

Segment Three: Tecolote Canyon



Tecolote Canyon is a regional resource-based open space dedicated park system bisected by Balboa Avenue. The canyon is a powerful natural corridor in the community and a key element in unifying the community. The geological formation of the canyon fingers provide an excellent view of the canyon when driving west through the dip. The intricate network of existing pathways in the canyons could serve as non-motorized linkages between neighborhoods as with the utility right-of-way recommendation for Segment Two.

Segment Four: Western Gateway (I-5)



Motorists entering the community at this western entrance are coming from Pacific Beach, Mission Bay Drive, or the freeway. The canyon fingers in this segment provide an excellent view of the ocean. Drivers are traveling fast, and there is currently no landmark to indicate they are entering a place where slower speeds are more appropriate. Ample space at the edge of the road is available for construction of a substantial gateway marker.

Many of the aforementioned design concepts described in the Analysis have been updated, amended, and formalized as a result of recent studies. Please refer to the table in Appendix C for updated information.

Design Concepts



Balboa Avenue already has considerable foot traffic, as shown above. What's missing are the special places where people meet and linger. People want to be buffered from traffic and have a choice of places to sit and talk.

“The best streets are those that can be remembered.”
Great Streets, Allan B. Jacobs

Safety, especially that of people walking, emerged as the top issue for charrette participants. But a closer look at the input received during focus groups, walking audits, training sessions, and design tables reveals that the participants are seeking something more complex. They are seeking a community that feels inviting, cohesive, and connected to nature. They envision Balboa Avenue as an activity hub in the approximate center of Clairemont, and want others to readily identify the street as being a unique place, not just a passageway. They want a local street that serves people in adjacent neighborhoods as they access shopping, social gatherings, public space, recreation, schools and other public buildings, work centers, and mass transit by foot, bicycle, or auto. Indeed, the function of great streets for hundreds of years has been to help make community by linking people to goods, services, and other people.

This multiplicity of uses can be reconciled with the need to simply move vehicles from one point to another. Using design features that send a clear message about the space through which people are moving would help accommodate all the road's users. The street must be memorable and it must meet the needs of the community. The concepts that emerged from the charrette event to transform Balboa Avenue are discussed in general terms here.



These photos are examples of how sidewalk areas in some communities have been designed to provide space for people to gather and be social.

Safety



The design of corners influences how drivers treat pedestrians. The Balboa Avenue driver is “pushing” the pedestrian to hurry.

First and foremost, safety concerns must be addressed: safety for motorists, walkers, cyclists, and transit riders. Redesign of the features in the public right-of-way will promote slower vehicle speeds. It is recommended that travel lanes along the corridor should be narrowed to 10.5 feet. Enhanced turning and slower speeds will reduce collisions. The walking environment will be improved with continuous sidewalks, frequent crossing opportunities, shade, resting places, buffers between vehicle traffic and people, and lighting. The treatments to achieve these outcomes offer other benefits, including a more beautiful environment. The space that makes these treatments feasible is gained by reducing the width of travel lanes, and by reducing the number of thru-lanes in the commercial corridor. New, attractive transit shelters and bus bays will benefit the transit rider.

Community Identity

The character of the Balboa Avenue corridor varies considerably, being more urbanized east of the Community Core and more oriented to the canyon landscape in the west. Landscape concepts should be simple and reflective of the community’s cultural and natural landscapes. The new streetscape will utilize common-day materials and through design, transform the character of these elements to a higher standard that characterizes the community’s quality of life and sense of identity.



Charrette participants explained that they treasure the natural environment that has been preserved in the vicinity of Balboa Avenue.

The native landscape is a tremendous community resource, which should be preserved. Pedestrian and bicycle access should be improved to provide an alternative network of open space linkages that connect the community. The design concept for these sections of Balboa Avenue is very simple. Keep the canyons as natural as possible and minimize introduced elements. When introduced elements are used, make sure they tie in with the design character of the overall streetscape concept. Therefore, the roadway through the canyon should not be defined with street trees along its edges. Instead, allow the natural landscape to be the primary focus. Preserve the native planting and use restoration as the guiding principle. All planting should be low-maintenance, xeriscape varieties.



The upper photo shows Balboa Avenue. The photo below shows a six-lane section in Brea, CA. It demonstrates that wider streets can still be functional and beautiful. Note the continuous facade along the left side.



Public art helps bind the community together.

The urbanized areas of Balboa Avenue need a streetscape concept that will unify the many different land uses. The design should buffer the negative impacts of adjacent land uses while reflecting the inherent character of each. The theme for the eastern half of the corridor should look more man-made than natural, to reflect the development pattern of Clairemont's urbanization of the mesa landscape. This theme will contrast with the natural theme in the western half of the corridor. Clairemont's roots as a post war suburb should be reflected in the design of the street as follows:

1. Use continuous street trees in continuous tree planters to buffer and define the vehicular traffic from the pedestrian sidewalks.
2. Enhance and increase street lighting fixtures.
3. Use natural building materials to build a theme unique to the community.
4. Enhance typical suburban concrete sidewalk with a simple but elegant scoring pattern similar to what is used on the sidewalks of Coronado.
5. Provide bus shelters which provide cover and seating at every stop.
6. Introduce public art wherever possible.

A landscape theme will create the sense of security, beauty, and community identity that residents want. The theme provides a structure that keeps the canyons natural, defines entry points with native planting, and uses ornamental street trees in urban areas. Trees should not be added to the natural canyon areas. Natural materials used in the construction of retaining walls, transit stops, and noise barriers at intervals along the corridor will provide a repetitive feature that underscores the community's connection with the natural environment.

These principles beautify Balboa Avenue and create a design relative to the different zones, but the ideas about identity of the community go further than the beautification of the street. Public space and neighborhood connections created in the utility right-of-way will complement the bicycle lanes and sidewalks that link the community to shopping, the canyons, and Mission Bay.

Community Core



Balboa Avenue already shares some features that make Hillcrest so popular. The photos below show the Hillcrest neighborhood.



Later, when the street is a place of beauty and order, the real work of building a center can take place. This will occur when private developers respond to the needs identified by the community. As demonstrated in the Hillcrest area, San Diego residents are eager for the quality of experience enjoyed in smaller village environments. They are ready to park, walk, relax, shop, and eat in quiet, aesthetically pleasing environments. The new, enlivened streetscape will demonstrate that the time has come for the commercial core to redevelop. The dedication of some space to public use, such as music or other performing arts, will turn the town center at Genesee Avenue and Balboa Avenue into the heart of the community.

Many of the aforementioned design concepts described in the Design Concepts section have been updated, amended, and formalized as a result of recent studies. Please refer to Appendix C for updated information.



Recommendations

This section begins with a discussion of considerations that will influence the final design of the project throughout the corridor. Roadway features such as left turn lanes, driveways, medians, and facilities for bicyclists and people walking are discussed for the overall corridor. The section is then divided by segment, with more specific recommendations for the overall segment followed by recommendations for specific sites within each segment.

“Reduced lane widths allow greater numbers of lanes in restricted right-of-way and allow better pedestrian cross movements because of reduced distance.”

A Policy on Geometric Design of Highways and Streets, 1994.

Balboa Avenue: How Wide?

An important design concept is the width of the travel lanes. The wider the lane, the faster drivers travel. Freeways have twelve foot wide lanes to facilitate travel at 70 to 80 mph. Narrow lanes are suitable in low speed areas and in left and right turn lanes. Lanes as narrow as nine feet are used for left and right turn lanes. The reason they are applicable is the lower speed. Nationally recognized guidelines for lane widths in the American Association of State Highway Transportation Officials’ manual, *Geometric Design of Streets and Highways*, permit travel lanes of ten to twelve feet wide on major roads. Like more and more communities nationwide, Clairemont can have narrow lanes, providing space for bike lanes, wider medians, and planter strips (boulevards).

An issue not often raised is the unexamined assumption that road design needs to cater to all users. Nowhere is there a requirement that roads should be designed to cater to any and all drivers who want to use them. Some cities are now designing their streets to meet community needs despite the potential slight decrease in capacity. They see good quality sidewalks, bike lanes, and landscaped medians as being more important than carrying a few extra cars.

One factor that complicates the discussion of the number of lanes needed on Balboa Avenue is that some facts are counter-intuitive. For example, the traditional remedy for real or perceived congestion is to simply make the street wider. However, many charrette participants felt Balboa Avenue is congested now, despite previous increases in width and lower traffic counts than in previous years. This discussion will explore the realities of congestion, its causes, and cures.

What is Congestion?

Though traffic professionals often define relative congestion by “levels of service,” for most of us, traffic congestion is an experience. When we are drivers inside a vehicle we typically travel along a road within a group of vehicles. We see vehicles in front, vehicles to the sides, and vehicles in our rear view mirror - we are surrounded by vehicles. We feel hemmed in, surrounded, and congested. Then we stop at the next signal, and we are still surrounded by vehicles. We move off and stop at the next light and we are still surrounded, or maybe we got lucky and moved to the front of the group of vehicles. As we travel along a road, vehicles surround us - going, stopping, and waiting. We see this as congestion.



If we get out of our car and stand on the side of the road for a moment we see a different picture. We see emptiness. Sometime later a bunch of vehicles pass by, then more emptiness. During this emptiness pedestrians cross the road. What is happening is a rarely recognized phenomenon. Traffic signals bunch cars. They take a series of vehicles that are traveling along a road at varying intervals and stop them, and create bunches, or platoons, of vehicles. While vehicles are being formed into a platoon the road ahead is empty, except for a few turning vehicles or vehicles finally able to get out of driveways. Then the traffic signals turn green and the rush is on to reach the next red light. So a bunch of vehicles race down the road and the road looks very busy. When the vehicles stop at the next red light, congestion reigns, but the road in between the two signals is again empty.

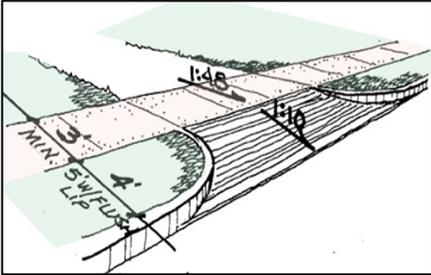
The number of travel lanes on Balboa Avenue is not the limiting factor. The limited thru-put of the intersections is the culprit. A single lane of traffic can carry on average of 1,900 vehicles per hour. When traffic signals are installed the capacity of that lane is reduced to 560-1,200 vehicles per hour. Traffic signals have a single function. They stop traffic on the main road to create gaps in the major traffic flow so vehicles can enter from the side street or make left turns. In doing so, traffic signals transfer time, and hence capacity from the major road to the crossroad. As a result, they reduce the capacity of the major road. To compensate for this reduced capacity caused by traffic signals roads are widened. Often a road is widened for miles to ease congestion at only one intersection.

What's the Potential Cure?

Treat the intersections to improve traffic flow. Some of the treatments recommended to improve intersection efficiency on Balboa Avenue are:

1. Dotted bicycle lanes at intersections
2. Additional left turn lanes
3. Improved signal phasing (reduce split phasing)

Improved driveway location and radii design as recommended will also improve traffic flow. At major driveways, right turn pockets could be installed to further enhance traffic flow.



This sketch shows the preferred driveway design. Note the gentler turn radius and the flat sidewalk setback from the street.

What Are the Benefits?

The overall package of intersection improvements and lane reduction in the Town Center benefits businesses, drivers, and pedestrians in many ways:

1. Improved traffic flow; reduced delay at intersections
2. Easier access to businesses along Balboa Avenue
3. Enhanced appearance of the street that will encourage shopping
4. Slower vehicle speeds
5. Greater safety for all users: drivers, pedestrians, cyclists
6. Improved sense of community identity
7. Decreased conflicts west of Genesee Avenue where the existing six-lane street narrows to four lanes

What About Speed Limits?

The benefits of slower speeds include improved safety, maximum roadway capacity, and the ability of motorists to see roadside businesses and enter the driveways before it is too late. Some participants felt a change in the posted speed limit would produce slower speeds. Posted speed limits that are unrealistic for the environment encourage wholesale violations. Speed studies done before and after changes in speed limits show no substantial change in speeds or crash rates. The package of changes recommended for Balboa Avenue, once fully implemented, will promote slower speeds. That said, however, lowering the speed limit and synchronizing the traffic signals to regulate speed would help slow traffic.



Design Features

Left Turn Storage Space

Based on field observations, (traffic count information was not available) some of the left turn lanes seem to provide more storage than is needed for the traffic volumes. Reduction in the length of any excessively long left turn lane would facilitate the planting of additional trees in the median.

Left Turn Tapers

Some of the turn lanes have very long tapers on them, which could be reduced in conjunction with the overall reduction of posted speed along Balboa Avenue.

Driveways

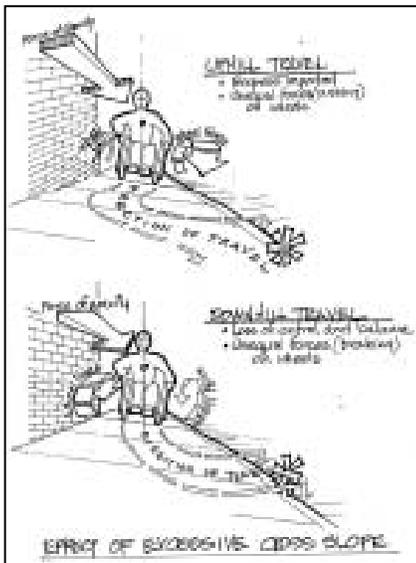
The driveway radii, or entry curve, along the entire length of the corridor should be increased. The existing driveways along Balboa Avenue have square corners. When drivers turn into an empty driveway they swing wide and cross to the far side of the driveway to avoid hitting and bouncing over the curb on the corner. If the driveway is partially blocked by an exiting vehicle, the entering vehicle has no choice but to bounce over the curb. In this circumstance, the driver has to come to a near stop to drive over the curb. The result is a much higher probability of being hit in the rear by the vehicle behind them. The crash data clearly shows that the driveway design is resulting in an unusually high number of rear end collisions. Skid marks at a number of the driveways validate this theory. Some drivers, who presumably fear being hit in the rear, are turning into the driveways at high speeds, causing damage to the corner of the driveways, not to mention the suspension of their vehicles.

Another problem with current driveway design is related to sidewalk location. The slope of the driveway must continue through the sidewalk, creating a tilted and potentially dangerous walkway, as well failing to comply with legal accessibility standards, such as the Americans with Disability Act (ADA). For the walkway to be consistently level, the driveway's ramp up must be complete prior to reaching the edge of the sidewalk. The sidewalk will then be farther from the curb and separated from it by a planter strip or paved area such as a transit stop.

The reconstruction project is the ideal time to relocate problem driveways. Studies indicate that driveways located very close to

“Control of driveways and roadside development is an integral part of access management... If access points are numerous and exiting volumes are heavy, the capacity and safety of the facility are reduced.”

-American Association of State Highway and Transportation Officials



The sketch illustrates the effect sloped driveways can have on wheelchairs, baby carriages, and other wheeled devices.



If the roadway is properly sloped, these gutters are unnecessary. Make the median itself wider instead.



In the photo above, note that the sidewalk is set back from the end of the median by a considerable amount. This median nose provides separation between those crossing the street and turning vehicles.

intersections on the departure side may be contributing to crashes. Engineers have concluded that driveways placed on the entry side within 100 feet of intersections increase the number of rear end crashes. The critical distance on the departure side is more than twice as long - 230 feet. The current practice is to prohibit driveways within 100 feet of the approach of an intersection and 230 feet of the departure side of the intersection. Driveways should be relocated to conform to these current standards. Typically, properties too small to meet these requirements are exempted.

Medians

Medians should be as wide as possible throughout the corridor to provide the shortest street crossing distance and maximum refuge area for pedestrians. The City of San Diego's Street Design Manual recommends raised medians to be sixteen feet wide. This allows six feet of pedestrian refuge areas at intersections after provision of ten-foot wide left turn lanes.

Typically, the road cross section provides for the pavement to slope away from the median so water will flow away from the center. For this reason, gutters adjacent to medians are redundant and superfluous. Medians at left turn lanes should extend to the intersection side of the crosswalk.

Bicycle Facilities

Five-foot bike lanes through the entire corridor will add to the separation between pedestrians and traffic, improve sight distance for drivers entering the street, and provide more predictable interaction between drivers and bicyclists. Where there are bicyclists, there is also a need for parking facilities. Bicycle racks should be provided in convenient, secure locations throughout the corridor.

Walkways and Crossings

Landscaped planter strips should separate walkways from the street. In the City's Street Design Manual, parkways that include planter strips and the sidewalk must be fifteen to twenty-three feet wide unless physical constraints exist. The revisions give priority to wider parkways over wider medians. These standards will provide space for aesthetically pleasing and comfortable space, which in turn encourages people to walk.



High contrast markings are recommended throughout the Balboa Avenue corridor. The gaps between the markings can be spaced so most tire tracks do not cross the white markings, reducing maintenance requirements. An alley at the center of the crosswalk is free from markings, allowing a smoother surface for wheeled users including strollers and wheelchairs.

Separate curb ramps that are compliant with ADA should be used. Although a single, angled ramp meets minimum ADA guidelines, best practices such as separated ramps that are described in the U.S. Department of Transportation publications “Designing Sidewalks and Trails for Access, Part I and Part II”, should be followed throughout the corridor. Pedestrian scale lighting should be provided as discussed under each segment.

Stop Bars and Crosswalk Markings

A large percentage of drivers don’t stop short of crosswalks. They cross into the designated crosswalk before coming to a complete stop. Stop bars parallel to the crosswalks and somewhat before them show drivers where to stop. It is essential that stop bars be added at least six feet back from the edge of all crosswalks. High visibility crosswalk markings with both parallel and traverse markings are also part of a safe and functional intersection. In-pavement flashers may be explored as enhancement for visibility of mid-block crosswalks.

Other Features

Landscaping, lighting, and pedestrian amenities are also essential to the development of a roadway that fulfills the vision of the charrette participants. Streetscaping will be added in conjunction with the street reconstruction. Rough sketches, such as the one on the next page, were developed during the charrette to define concepts participants wanted for the corridor. Additional design work will be required to refine these ideas.

Summary

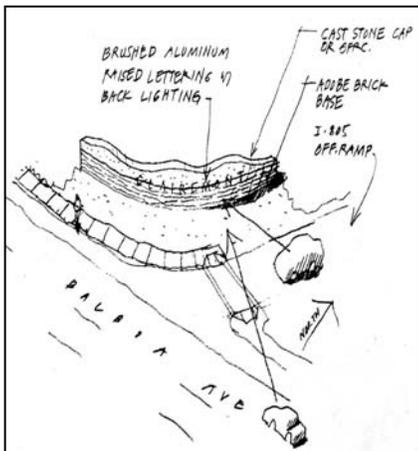
Smooth traffic flow depends on effective implementation of many design features. If one or more critical elements are overlooked, the solution will fail. The corridor is discussed by segment in the following section. In each segment there is a discussion of landscaping features, street design elements, and other features that impact the street. The recommendations were based on limited data available at the time of the charrette. It will be necessary for additional data to be collected and analyzed before development of preliminary and final designs.

Many of the aforementioned design concepts described in the Recommendations section have been updated, amended, and formalized as a result of recent studies. Please refer to Appendix C for updated information.

Segment One: Eastern Gateway I-805 to Mt. Abernathy Avenue

Landscaping

Gateways announce arrival at a place and serve as the first in a series of visual cues to prompt motorists to travel at slower speeds more appropriate for the community. The development of large, highly visible gateway entry points will announce that travelers have arrived in a place of distinction. Participants made it clear that they were looking for some way to express how the canyons are integral to their sense of community. One participant suggested a motto; Clairemont: Where the Canyons Meet the Bay. This theme, if adopted by the community, could be incorporated into the gateway designs (S1-L1). A clear marking of boundaries must take place before Clairemont can claim a distinct identity.

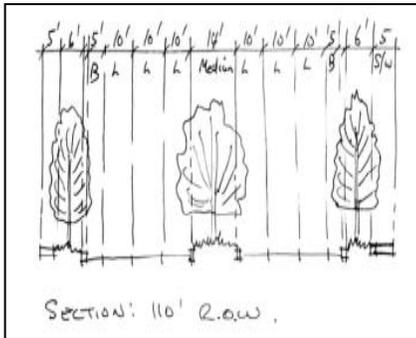


During the charrette, sketches such as the above were used to assess the conditions, needs, and possibilities for the corridor. From this, a vision map was developed. Segment One links the freeway to the town center area, referred to in the text as the “Community Core.” The sketch shows tentative placement of gateway features.

Supporting the noticeable boundary markers will be the consistent landscaping uniting the center with both sides of the roadway. After implementation of the proposed street design, plenty of space will be available for planting of suitable trees and shrubs, both in the median and along both sides. The pattern of trees should reflect the development pattern of the urbanized east side in contrast to the more natural canyon landscape in the west. The eastern gateway trees should be appropriate species recommended by the Urban Forester (S1-L2). Heading west, the edges of the right-of-way should be defined by an appropriate tree species, with low evergreen shrubs below, growing in continuous planter strips. The landscaped median should contain appropriate tree species with native cobble stones below (S1-L3).

Pedestrian-scale lighting will be set back from the street along the sidewalks. The boundary markers will be illuminated at night (S1-L4). The standard cobra-style street lighting will be enhanced by installation of bases made of natural materials, repeating the theme found in the gateway, retaining walls, and other features throughout Clairemont (S1-L5).

Street Design



Conceptual sketches developed during the charrette are based on estimated roadway widths. As more data is gathered, the concepts illustrated can be refined. This sketch shows a concept for incorporating planter strips, landscaping, sidewalks, and medians as described in the opening discussion.

The existing right-of-way between I-805 and Mt. Abernathy Avenue appears to be 110 feet. The recommended cross section for this segment is shown in the drawing on the next page. The reduction of the width of the lanes will allow traffic to flow and provide space for tree planting. Balboa Avenue west of Charger Boulevard should be narrowed to three 10.5 ft. lanes by moving the existing curbs toward the center. Additional design details along the corridor will help maintain smooth traffic flow while improving walking conditions **(S1-S1)**.

Roadway width in this segment allows medians of approximately fourteen feet, narrowing where turn pockets are desirable. At turn pockets, medians would narrow to between four and six feet **(S1-S1)**. Five-foot bike lanes through this segment will add to the separation between pedestrians and traffic, improve sight distance for drivers entering the street, and provide more predictable interaction between drivers and bicyclists **(S1-S2)**.

Walkways and Crossings

Continuous curbside planter strips of at least six feet are recommended through this segment. Landscaped planter strips should separate walkways from the street. Sidewalks at least five feet wide are recommended in this segment. Separate curb ramps should be used **(S1-S3)**. Pedestrian scale lighting is recommended to improve visibility for drivers and walkers and to provide a sense of welcome and comfort.



As the commercial core redevelops, building footprints will move closer to the edge of the walkway, providing interest, light, and walkable destinations.

Site Specific Recommendations

Charger Boulevard

Redesign the south side of the intersection to reduce the expanse of asphalt. This will reduce the pedestrian crossing distance. Add dotted bike lanes to be utilized as right-hand turn lanes (S1-S4). Use design guidelines as described above to ensure slow turning speeds and encourage drivers to yield to pedestrians crossing. Upgrade the bus stop east of the intersection on the south side of Balboa Avenue (S1-S5). Reduce the wide curb lane by moving the curb in toward the center of the road (S1-S4). This will provide additional space for the bus shelter and landscaping.

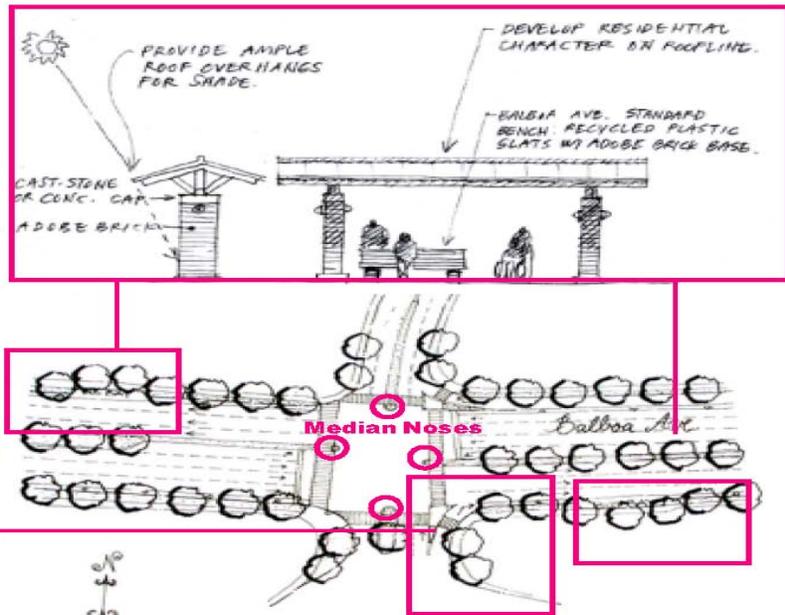
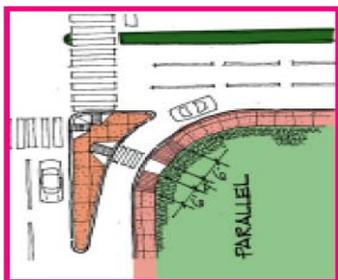
The bus shelter on the north side of Balboa Avenue is currently located away from the intersection to facilitate the free-flow right turn movement. A more convenient location would better serve riders. Relocate the transit stop to the departure side of the intersection and provide a shelter as shown in the drawing (S1-S5). Use wide medians with noses to provide pedestrian refuge areas and reduce exposure to vehicle conflicts (S1-S4).

Mt. Albertine Avenue / Cannington Drive Intersection

Add a crosswalk on the west side of the intersection and dotted bike lanes on each corner to be used as right turn lanes instead of right turn pockets (S1-S6).



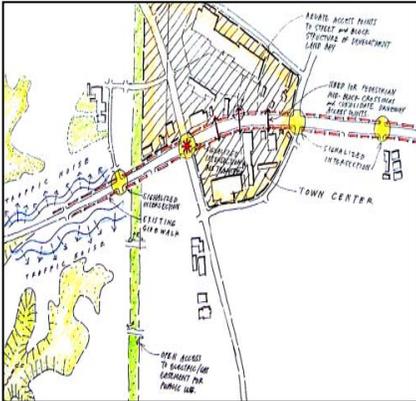
Attractive, safe, and convenient transit shelters will encourage ridership



Segment Two: Community Core

Mt. Abernathy Avenue to Mt. Culebra Avenue

The transformation of the core area in the community begins with the reconstructed street. Right-of-way width in this segment appears to be 120 feet, which is more than adequate to serve the traffic volume and provide an aesthetically pleasing, people-scale environment.



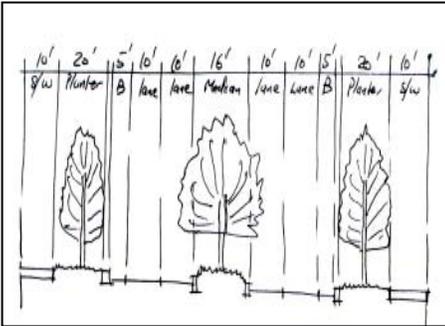
Landscaping

Tall trees planted along both sides of the avenue will underscore the feeling that one has arrived at the center of the Clairemont area. The trees should be broad-canopy and should have a robust architectural form and character. Low evergreen shrubs in continuous curbside planter strips will separate the street from the sidewalk. The center median will be wide enough for trees to be planted as well. The median should incorporate native trees, with continuous native cobble stones below (S2-L1).

Both the street and pedestrian lighting will continue from Segment One. In the Community Core, however, a third source of lighting will come from the commercial development there. Brightly illuminated store fronts, architectural lighting, and tasteful signs should harmonize to create the attractive glow of a healthy downtown district (S2-L2).

Natural building materials will unify this core area with adjacent segments. Such features as transit stops, retaining walls, bases for lighting, and planters should incorporate the natural look. Developers should be encouraged to repeat this theme in mixed-use buildings in the town center (S2-L3)

Street Design



This sketch shows the approximate measurements for Segment Two. Based on data available during the charrette, the reduction in lanes, together with the other recommended roadway design changes, will facilitate smooth traffic flow.

Beginning at Mt. Abernathy Avenue, the roadway should be narrowed to two lanes in each direction. As mentioned earlier, this recommendation is contingent on validation of data used during the charrette and will require additional engineering analysis, and would require an amendment to the Clairemont Mesa Community Plan. Move curb and gutter toward the center of the road and add bike lanes along the curb line. At left turn bays, provide localized widening to permit u-turns (S2-S1). Provide bus bays with transition areas at transit stops so that busses won't stop traffic while picking up and discharging passengers (S2-S2).

Reduced lane widths and the reduction of the number of lanes can be tested prior to making permanent changes by re-striping the roadway. However, analysis of only this change excludes changes such as signal timing and right turn slip lanes. It may not accurately reflect the traffic flow that would be achieved if all design changes are implemented.

Walkways and Crossings



Narrow medians in Segments One and Two will be replaced with medians four to six feet at turning pockets and sixteen feet wide between intersections. This will allow pedestrians considerably more safety as well as making the street more beautiful.

Sidewalks should be a minimum of ten feet wide in the commercial area to accommodate the increased walking activity typical in a walkable shopping area. Walkways between the commercial areas and the canyon should be at least five feet wide. Scored concrete will distinguish the sidewalk in this area from the adjacent areas. Planter strips in this area are approximately twenty feet, allowing ample space for landscaping, transit shelter, and benches. Benches matching those in transit shelters should be installed in quiet areas that are secure, welcoming, and shaded in the summer. Other street furniture such as planters and trash containers should match the benches (S2-S3).



The principle of offsetting the pathway in a refuge island was developed to prompt pedestrians to change their direction and look at oncoming traffic. An angled path, as shown in the above photo, or a linear path as shown in the photo below, will both achieve this goal. The path in the bottom photo is fenced to prevent shortcutting.



Most participants wanted a way to safely cross Balboa Avenue on foot between the two large shopping centers in the Community Core. One proposal was for a pedestrian overpass. The benefits and disadvantages were discussed in detail. In brief, pedestrian overpasses can work in certain specialized situations, but fail in more general applications. It was acknowledged that some type of pedestrian crossing needs to be designed near the midpoint between Mt. Abernathy Avenue and Genesee Avenue. This can be accomplished by redesigning the entrance to both shopping centers to allow for a new signalized entrance with pedestrian crossings, or to design a crossing for pedestrians only.

At a minimum, a split-phased signalized pedestrian crossing should be provided between Mt. Abernathy Avenue and Genesee Avenue near Longs Drug Store (**S2-S4**). The walk interval should be timed adequately, and the flashing hand interval should allow a walker to reach the refuge island before autos are released. Allowing pedestrians to activate a walk cycle will create gaps in the traffic. The gaps will make turning into and out of driveways safer and more convenient.

The preference during design sessions was for a crosswalk that angled through the median (**S2-S4**). People could cross safely while cars are turning left and right. This design may require the relocation of one or more commercial driveways. At the final presentation, a suggestion was made by a local resident to use a crossing similar to the one in the photos to the left at this site. He noted that the offset design would eliminate the need to relocate driveways (**S2-S4**). This is an excellent design option and should be pursued during the development of preliminary design.

In-pavement raised markers with LED strobe lights may be a feasible option (**S2-S4**). These embedded flashing lights are most often used at non-signalized mid-block crossings. The Institute of Transportation Engineers' publication, "Alternative Treatments for At-Grade Pedestrian Crossings", published in December, 2001, contains a complete discussion and guidelines for evaluating different options for mid-block crossings. Other non-signalized mid-block crossings in this segment may be justified (**S2-S4**).

Site Specific Recommendations

Mt. Abernathy Avenue / Mt. Alifan Drive Intersection

Observations at this intersection in the morning showed it was operating very efficiently, with minimal queuing and good coordination. Evening peak observations revealed a different picture. Cycle time in the evening peak was variable and didn't seem to have any consistency in the phased timing. Balboa Avenue sometimes had very long green times and other times very short cycle times. The result was a very long line of vehicles that blocked the left turn lane. The addition of a second left turn lane from Balboa Avenue onto Mt. Alifan Drive, revised timing, and improved coordination (S2-S5) should permit the reduction from three to two lanes at this intersection while reducing congestion. In this segment, Balboa Avenue could be reduced from six lanes to four lanes, but would require an amendment to the Clairemont Mesa Community Plan (S2-S6). Add a second left turn lane from westbound to the south. Retime signals to reduce green time for Mt. Abernathy Avenue (S2-S5 cont.).

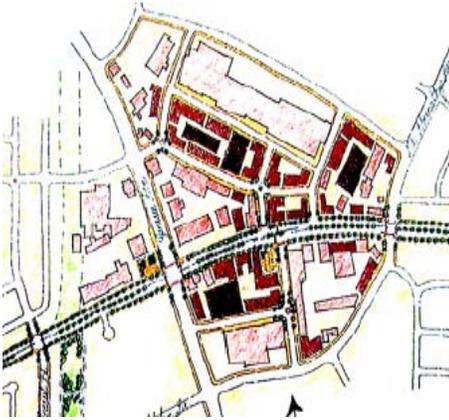


In the absence of fully directional peak hour traffic counts, two options for designing this intersection to accommodate the potential transition from six to four lanes are offered. In the first, create a right-turn-only lane for westbound traffic. Widen the two eastbound approach lanes to three lanes on the departure side. The second option is to provide three westbound lanes at the stop bar and taper to two lanes on the far side of the intersection (S2-S6 cont.). This provides a higher intersection capacity than option one. Widen the eastbound approach from two to three lanes in advance of the intersection and continue the three lanes on the other side of the street (S2-S6 cont.).

Genesee Avenue Intersection

Relocate the hedge that is obscuring driver visibility of pedestrians, purchasing right-of-way if necessary (S2-S7).

The evolution of the envisioned Community Core is shown in the drawings on this page and the next. Since this type of development is contingent upon public/private partnerships, it is a long-range project. However, the street can be designed with this vision in mind so that funds are not expended on elements that will later need changing (S2-S8).

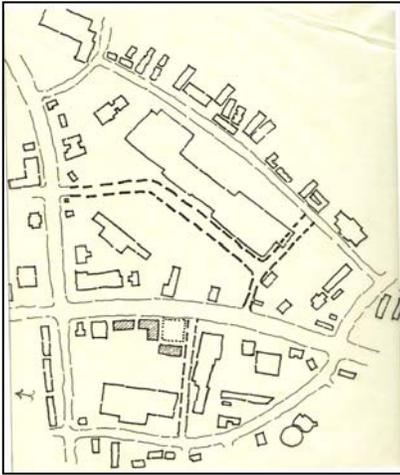


The shopping areas at the intersection of Genesee and Balboa Avenues are well situated to serve as a community core. The close up of the Vision Map above shows this area as it could, if buildings are added in a scale and pattern compatible with a walkable center.

The Community Core can be made more livable by making it more walkable. A walkable community core is defined as a compact neighborhood that is mixed-use, mixed income, and limited in area by a walking distance of five minutes from center to edge (a radius of approximately 1,350 feet). A walkable community core is conceived to fulfill most ordinary human needs, including those of transportation. The community can encourage this by promoting mixed-use and higher density in-fill at existing shopping areas. The community can support provision of facilities to encourage walking and bicycling between nearby residential areas and the community core.

A walkable community core should include:

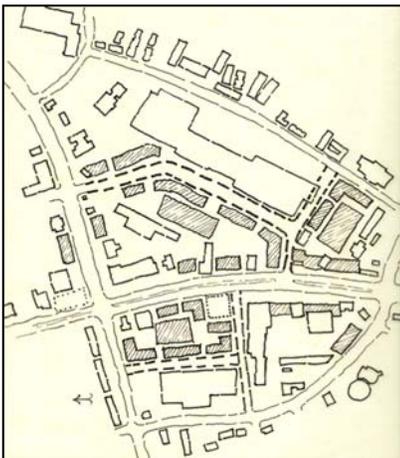
- A balanced set of activities: shopping, work, schooling, recreation, and dwelling.
- Housing for a variety of incomes. Inclusive housing includes backyard apartments, above shops, and apartment buildings adjacent to workplaces. Healthy communities house the complete spectrum of income levels. High-end and market-rate dwellings are just as important as affordable housing.
- A variety of business types are also accommodated, from retail and professional offices, to live-work units, and outbuildings for business incubation.
- A center and an edge. The combination of a focus and a limit contributes to the social identity of the community. The center is a public space, which may be a plaza, a square, a green, or an important street intersection.



- A network of thoroughfares and links; this shortens pedestrian routes and provides multiple routes that diffuse traffic.
- Thoroughfares designed to provide equity between pedestrians and motor vehicles: increasing pedestrian activity encourages casual meetings that form the bonds of community.
- A transit stop, providing access to larger regional transit systems.



A walkable core should seek to fulfill the goal of balancing uses, such that under ideal conditions, the daily needs of the residents can be met within the area. Achieving even an approximation to this goal fosters community formation, reduces motor vehicles trips, aids in the establishment of a stable tax base and retail sector, and allows residents who do not drive to live full lives. As a rule of thumb for North America, balanced use includes 2.4 residents per household, each household requiring 40 square feet of retail and 120 square feet of workplace.



The walkable core may be contrasted with auto-oriented conventional suburban development. Clairemont was designed using the conventional model. It is a planning system characterized by single-use zones with a housing pod, a shopping center, and a business park as its basic elements, requiring frequent and lengthy automobile trips to move from one single-use zone to another.

These sketches demonstrate how in-fill development could turn the existing vehicle-oriented shopping mall into a community core. Mixed-use buildings would gradually be built in the spaces now taken up by non-productive parking lots.

Mt. Everest Boulevard Intersection



Many focus group participants were concerned about the safety of children crossing at this intersection. Skid marks at the intersection attest to excessive speeds by drivers who are not expecting a signalized crosswalk. The new cross section will address many of these concerns by encouraging slower speeds. The narrowed lanes will mean less exposure time for pedestrians. A refuge area created by the six-foot median will allow pedestrians an opportunity to assess traffic before continuing.

- Add a short median of sufficient width to provide pedestrian refuge to Mt. Everest Boulevard on both sides of Balboa Avenue (S2-S9).
- Move the crosswalks away from the corner to shorten the crossing distance (S2-S9).
- No right on red during school hours (S2-S9). Provide a three-second lead for the walk cycle so right-turning vehicles yield to pedestrians.
- Provide a seven-second walk cycle (S2-S10).
- Provide adequate timing to allow a person to clear travel lanes before the end of the walk cycle. Use 3.0 feet per second for calculations to allow extra time for children (S2-S10).



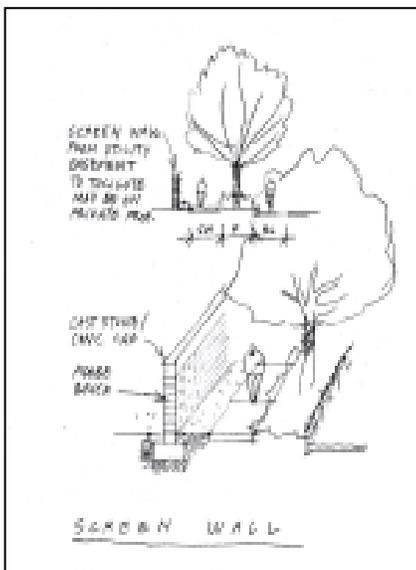
Mt. Etna Drive Neighborhood

A concern was raised that changes to the Balboa Avenue corridor could create more traffic and congestion in the adjacent neighborhoods of the Mt. Etna Drive area, due to drivers cutting through. Participants stated that traffic backs up at the signal at Balboa Avenue and Genesee Avenue, and diverts traffic through the residential areas north and west of the intersection.

Several speed humps have been installed on Mt. Etna Drive between Mt. Everest Boulevard and Genesee Avenue. The humps are ineffective in reducing speeds because of their low profile. Traffic would be slowed more effectively if the humps were replaced with horizontal treatments, such as chicanes, which are more successful in limiting vehicle speeds (S2-S11).

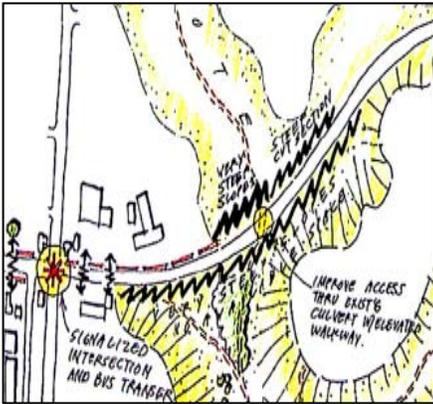
Noise Walls

Beginning at the western edge of the SDG&E right-of-way, residents whose properties back up to the street complained about noise levels. To reduce noise levels, provide an aesthetically pleasing sound wall with landscaping (S2-S12). The sketch at the left shows a concept for the walls.



Segment Three: Tecolote Canyon Mt. Culebra Avenue to Clairemont Drive

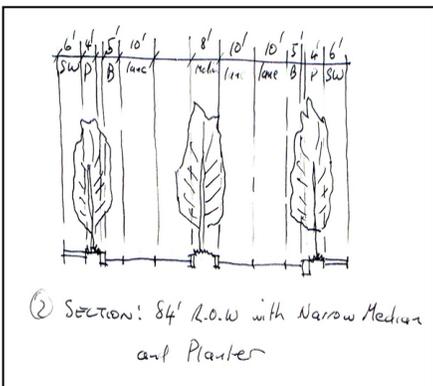
Landscaping



Appropriate tree species should be planted on both sides of Balboa Avenue to just beyond Mt. Culebra Avenue, along the edges and in the medians. Low evergreen shrubs should fill the curbside planter strips and native cobble stones should be used to pave the median. At the first view of the canyons, use only native, low-growing shrubs in the median. All planting ceases through the barrier rail portion of the street, then resumes east of Clairemont Drive (S3-L1).

Street Design

Roadway width begins to narrow at this point in the corridor. The number and width of lanes will remain constant, so the design must adapt to the constraints by adjusting median and planter strip widths, as shown in the sketch to the left (S3-S1). Bicycle lanes continue through this corridor with formal markings (S3-S2). Medians will remain as wide as practical through this segment where the right-of-way gradually narrows to approximately 84 feet (S3-S1).



Walkways and Crossings

The proposed cross section, which includes narrowing of the lanes in this roadway segment, will facilitate construction of the sidewalk by reallocating space to the edges of the road. Continuous sidewalks are desired and should be provided through the canyon on both sides of the roadway. Wheelchair users and others who cannot negotiate steeper inclines may not find the walkway usable.



For the first few hundred feet west of the intersection there is adequate right-of-way to provide a sidewalk with some planter strip area. The next section would likely require the construction of low-level retaining walls, however if needed they should be no more than six feet tall and unify the corridor by using natural materials (S3-S3).

As the road curves to go down into the canyon, the embankment on the north side rises significantly to the trailhead. In this section the sidewalk could probably be included adjacent to the curb within the new cross section. It could also include a planter strip, if a small cut of the embankment and a low retaining wall are provided (S3-S3).

From the trailhead, the canyon becomes very deep and the road embankment is very steep. Although the lanes will be narrowed to ten feet, the added space will be dedicated to bicyclists and a guardrail. It is unlikely there will be sufficient width remaining to provide a safe sidewalk (S3-S3). The distance between the trailhead and the Tecolote Canyon sign west wall of the canyon is approximately 180 feet. A bridge is recommended in this area (S3-S4).



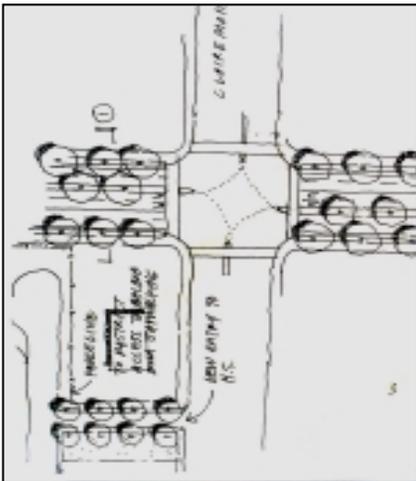
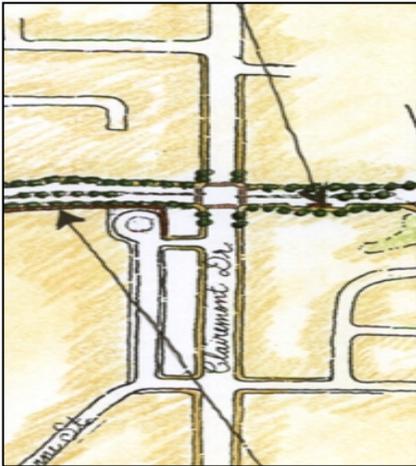
From this bridge westward a sidewalk can be provided with a minimal fill until it reaches the next section of rising embankment. Where the embankment is very high, several options exist for continuing the sidewalk. A sidewalk can be added by narrowing the lanes, and some minor cuts. From the point where the guardrail ends, the embankment rises. Remove the guardrail and replace it with curb and gutter (S3-S4).

This preliminary field review and conceptual design suggests it is feasible to build a continuous sidewalk on the south side of Balboa Avenue through the canyons, and on the north side in some areas. These concepts were based on field observations and will require additional analysis before preliminary design. The consultant team lacked adequate field time to review the canyon for a crossing. Charrette participants suggested an underpass in the area where a culveret currently exists at the bottom of the gorge. It may be feasible to examine this possibility when more detailed designs are developed.

Site Specific Recommendations

Clairemont Drive Area

Narrowing the lanes throughout the corridor provides the additional space needed to address participant concerns in this section of roadway. Drivers frequently stop in the crosswalk at this intersection, forcing people to walk around them. Right turning drivers are crowding pedestrians who are crossing during the walk interval.



- Replace fencing, as appropriate. Install continuous planters along the planter strips along both sides of Balboa Avenue to discourage mid block crossings and allow removal of the unattractive fence (S3-S5).
- Provide two separate ADA-approved ramps.
- Install stop bars at least six feet before crosswalks (S3-S6).
- Extend median through crossing to provide refuge (S3-S6).
- No right on red during school hours. Provide a 3-second lead for the walk cycle if right turning vehicles fail to yield to pedestrians during the green light cycle (S3-S7).
- Provide a seven-second walk cycle (S3-S7).
- Provide adequate timing to allow a person to clear travel lanes before the end of the walk cycle (S3-S7).

Segment Four: Western Gateway- Clairemont Drive to I-5

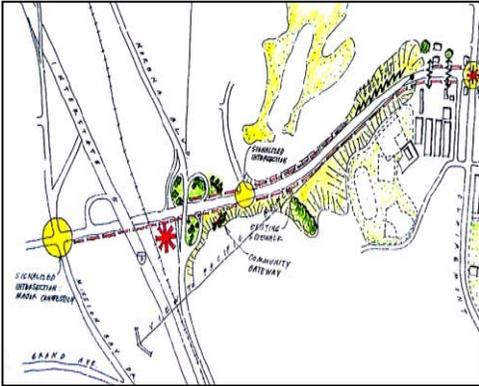
Landscaping

The comments regarding gateways on page 18 naturally apply here as well. This segment marks the beginning of the Clairemont community when traveling east. Small ornamental trees should be planted along both sides of the street, mirroring the east side and buffering the sidewalks from the traffic. Medians are landscaped to the point where barrier rails are installed. Low growing native shrubs are planted in medians at the edges of the canyon (**S4-L1**).

Street Design

The roadway continues through this segment with two lanes in each direction (**S4-S1**), and five-foot bike lanes in this section (**S4-S2**). Due to the narrow lanes, it is important to provide space for vehicles to leave the traffic flow in the event of an emergency. At the short embankment between the two gullies, on the east bound side, there is no reason to install a guardrail. Instead, this is a good location for emergency parking. The next location possibility is at the eastern end of the rise of the embankment (**S4-S1 cont.**).

The Clairemont Mesa Community Plan of 1990 contains a recommendation to widen Balboa Avenue to six lanes from Clairemont Drive to I-5 in order to accommodate projected traffic growth as the community's population increases. However, based upon field observations, it is recommended that the Community Plan should be amended to remove this recommendation as the widening of Balboa Avenue along this segment would simply lead to more congestion at the Balboa Avenue, Garnet Avenue, and Mission Bay Drive intersection. However, if the intersection and overpasses are redesigned, a new analysis with updated data should be performed to determine if widening will have a benefit commensurate with the cost. The ten-foot-wide traffic lanes, however, provide many benefits, including space for continuous bicycle lanes and sidewalks.



Walkways and Crossings

On the north side, immediately west of the Salvation Army, a sidewalk can be added by narrowing lanes and moving the guardrail closer to the center of the road. At the small embankment west of this site, minor removal of a foot or so of the embankment's base would provide adequate width for a sidewalk.



Many people ride bicycles through the canyon area. Bike lanes are recommended.

Next, a short, steep gully may require a partial cantilever structure to continue the sidewalk. In the following section, there is a very steep embankment with a bench partway up the embankment. Here it may be necessary to cut the base of the embankment and install a six to eight foot retaining wall. That will create enough width to connect the sidewalk to the next section. As an alternative, the sidewalk could go up the old roadway to the bench where the embankment flattens before rising again. At the western end, a switch-back sidewalk would be required (**S4-S3**).

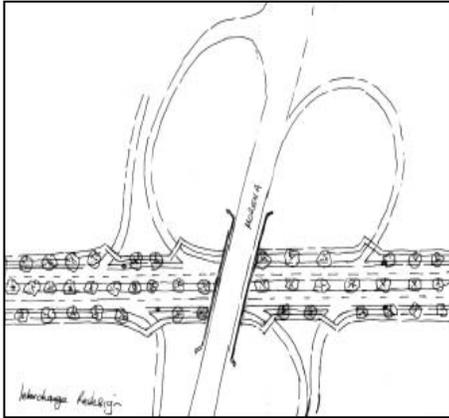
On the southern side of Balboa Avenue, the sidewalk extends from Clairemont Drive to just past Moraga Avenue. In the vicinity of Moraga Avenue the sidewalk should be widened to five feet (**S4-S3**). The sidewalk opposite Moraga Avenue and to the west needs to be provided, extending west to I-5.



Eastbound on Balboa Avenue from Moraga Avenue there is a gully. East of Moraga Avenue an asphalt sidewalk or path continues to the top of the hill where it meets an existing concrete sidewalk. This will enable the sidewalk to be extended to Clairemont Drive with some minor excavation at the base of the embankment with or without a small retaining wall. A small amount of fill will be required in one depressed area. Throughout the remainder of this segment the sidewalk can be installed normally (**S4-S3**).

Site Specific Recommendations

Moraga Avenue



- Relocate crosswalk from the east side to the west side. This provides better access to the transit stop. This is also the side where pedestrians were observed to be crossing (S4-S4).
- Install a transit shelter on the eastbound side of Balboa Avenue near the existing bench (S4-S4).
- Add a median (S4-S5).

Morena Boulevard / I-5 Ramps

Redesign ramps between Moraga Boulevard and I-5 as yield-control exit ramps to reduce speeds and lower crashes and conflicts. A review of the ramps and tire marks on both the north and south sides of the corridor reveal that drivers are having difficulty entering the on-ramps due to the high speed of vehicles exiting the off-ramps. It is obvious there is insufficient weaving distance between the off-ramps and on-ramps. The only solution is to redesign the ramps. The redesign of the ramps will provide the space to connect the sidewalk between Mission Bay Drive and Moraga Avenue - the final element linking the mesa with the ocean (S4-S6).

Implementation and Funding Strategies

Implementation

The transformation of the Balboa Avenue corridor should be undertaken as a whole project, but funding constraints may require reconstructing the street in segments. A comprehensive understanding of the overall vision must be kept in mind. The implementation process will require an ongoing funding effort, through private-project related improvements, grant requests and City allocations.

Everyone agrees that safety is the prime consideration, not moving the largest number of vehicles through the corridor at the maximum speed. Business people want motorists to stop, not drive by quickly. Pedestrians and other street users want to feel safe. Residents want to feel they live in a distinct community.

Some measures to improve safety can be taken immediately. These include the addition of stop bars at crosswalks where they are currently missing re-timing signals to increase pedestrian safety, and signs to prohibit right turns during school hours. Speed limit reduction and travel lane narrowing throughout the corridor can be accomplished as part of planned maintenance.

Other measures will require a much longer amount of time to address. These include addressing the congested conditions of nearby regional streets and freeways, by a change in patterns that will be created when the town center area becomes more walkable.

The table in Appendix C shows proposed implementation steps for the various segments discussed in the report. The table provides a glimpse of the action steps proposed and the potential lead entities to implement them. The overall landscaping plan and street redesign must be considered as a whole, while actual construction will more likely occur in phases throughout the corridor. Building consensus among commercial property owners in the town center must continue throughout the planning process.

The flexible implementation plan permits orderly and consistent improvements to be made at different times and in different segments, while remaining in harmony with the overall vision. It is suggested that some of the initial funds be invested in the Town Center area (one of the highest profile areas), to set the stage for private development. Success of the Balboa Avenue Revitalization Action Program is dependent on a coordinated public/private funding partnership, leveraging City and private funding and improvements, along with state, federal and other grants and general economic conditions. Beyond the specific implementation actions proposed in this document, it is the objective of the Balboa Avenue Revitalization Action Program to foster quality design and development throughout the Balboa Avenue corridor.

Funding Sources

Caltrans provided approximately \$8 million for street repairs and maintenance when ownership of the study area was transferred to the City of San Diego. These funds are available under a federal program for roadway enhancements that is implemented by Caltrans.

The development of a landscape theme along the corridor was a critical element of achieving the vision defined by participants as described in the Balboa Avenue Streetscape Improvements (WO# 524960). The landscaping must be done in conjunction with the street improvements in order to become a cohesive part of the corridor.

Although project costs are beyond the scope of this report, similar projects provide some order of magnitude to use as a guideline. The City of Torrance, California rebuilt 1.03 miles of an urban major arterial with five and seven lane cross sections for \$6.2 million in the early 1990's. This included \$1 million for right-of-way acquisition and \$2.3 million to put utilities underground. These numbers suggest that funds are inadequate for the entire project even if the entire \$8 million were dedicated to reconstruction.

Walkable Communities, Inc., recommends that street reconstruction begin with Segment Two, the Town Center. This will address many of the safety concerns expressed by participants. It will begin to build community identity and it will create an attractive setting for private investment. The value of street improvements such as those envisioned by participants goes well beyond safety. The Torrance project was very successful in stimulating landowner improvements.

Other Funding

Additional funding will be required to complete the street. Since this street was only recently acquired, City funds have not been dedicated for repair and maintenance. Widening through the Tecolote Canyon was suggested by City transportation planners. It is possible that the funding they would have used for this project could be allocated to implementing the vision of the community. Consultants had little information on this topic and are unable to provide details. Portions of the Balboa Avenue redesign may also qualify for funding under some of the programs described below.

Sewer and Storm Drain Projects

Seattle has added planted medians to several streets at little or no extra cost as part of sewer upgrade projects. In the Clairemont area, construction costs are far above the national average but the same principle applies: by building the street as concurrent construction, savings are possible. Since the storm drain system is largely buried beneath the city's streets, any planned improvements might be combined with the implementation of the street redesign. Opportunities may also arise on various residential streets where traffic calming is desired.

Utility Under-grounding

Utility under-grounding projects often require extensive digging, demolition and replacement. Utility under-grounding typically requires the installation of new conduit, bases and often poles for streetlights (when the lights are on luminaires mounted on the overhead utility poles). Substantial savings may be possible by installing pedestrian-scale lighting (if it is desired for a street) at the same time, rather than digging up the street a second time to provide conduits and bases for pedestrian scale lighting, which typically requires more lights, placed closer together than the existing highway-scale lighting.

Development Impact Fees

Generally, Development Impact Fees are “scheduled charges applied to new development to generate revenue for the construction or expansion of capital facilities located outside the boundaries of new development (i.e. off-site) that benefit the contributing development.” As described in A Practitioner’s Guide to Development Impact Fees (Nicholas, Nelson & Juergensmeyer, 1991), “Where capital facilities are not adequate, permitting development to occur is contrary to the responsibility of a local government to protect public health, safety and welfare.” In order to protect public health and safety, then, the courts have held that cities may charge impact fees in order to recoup from each new development a proportionate share of the cost of providing adequate capital facilities — including the provision of safe streets.

Safe Routes to School: Assembly Bill 1475

This program currently directs \$20 million per year in funding to projects providing safe passage to children walking or bicycling to school, including building bicycle paths and lanes, constructing sidewalks where none exist, and implementing “traffic calming” programs in neighborhoods around schools.

Bicycle Transportation Account (BTA)

This state fund, administered by the Caltrans Bicycle Facilities Unit, can be used for numerous items that aid cyclists, including median crossings, bicycle/pedestrian signals and bike lanes. SB 1772, which took effect in July 2001, increased funding for the BTA to \$7.2 million per year for Fiscal Years 2001/ 02 through 2005/06. After 2005/06, annual BTA funding will be \$5 million. BTA funds pay a maximum of 90 percent of the cost of an eligible project.

Environmental Enhancement & Mitigation

This state fund is worth \$10 million annually. Applications are accepted yearly, usually in November, by the California State Resources Agency in Sacramento. Two categories could be appropriate for improving Balboa Avenue: The Highway Landscaping and Urban Forestry category is designed to offset vehicular emissions of carbon dioxide by funding the planting of street trees and other suitable plants. The Roadside Recreation category has been used by cities

to fund parks and trailheads along streets.

Congestion Mitigation & Air Quality

This federal fund, worth over \$300 million per year for California, is distributed to regional transportation planning agencies in areas with air quality problems for projects that improve air quality and reduce congestion. Bicycle and pedestrian improvements are specifically eligible for these funds.

Federal Transit Funds

California receives close to \$1 billion annually in Federal transit funds, and these funds may now be used not just for buses and trains, but also for projects which improve transit stops and bicycle/pedestrian access to them.