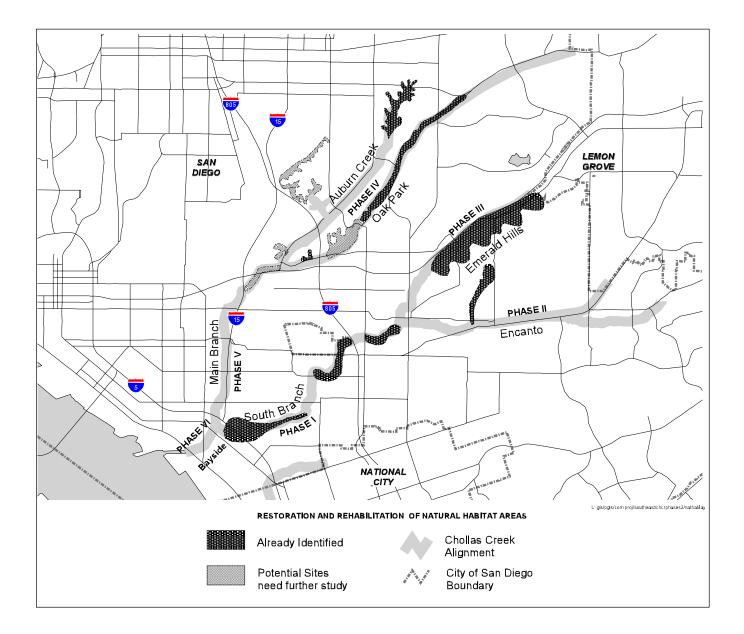
# DESIGN/DEVELOPMENT GUIDELINES

The creation of these Design/Development Guidelines have their basis in many City documents: the Barrio Logan-Harbor 101 Community Plan (1978), the Southeastern San Diego Community Plan (1987), Project First Class Urban Design Program (1989), the Imperial Avenue Corridor SEDC Urban Design Charrette (1995), and the Mid-City Communities Plan (1998). There is also direction found in City ordinances and City Council Policy: building upon these Council approved community plans, codes and policy, City staff held the community workshop in 1998. The key issues, major design concepts and vision from that workshop have been incorporated into the Chollas Creek Enhancement Program's final recommendations. Those conclusions, combined with the work of the City Wetlands Management Plan prepared by consultants Estrada Land Planning & KEA Environmental for the South Branch/Phase 1 improvements are the basis of this Enhancement Program.

The following Design/Development Guidelines for Chollas Creek, include a section on the adopted policy context with pertinent policies taken from the Barrio Logan-Harbor 101 Community Plan, the Southeastern San Diego Community Plan, Project First Class Urban Design Program, the Mid-City Communities Plan and other guiding City documents. The guiding policies are the basis upon which more specific Design/Development Guidelines have been created. It is important to note that the policies and guidelines that follow are based on existing City policy and federal and state regulations, specifically in relation to wetland and multiple species habitats, water runoff, hazardous materials, erosion control, etc. The Guidelines will apply to all of Chollas Creek, which covers over 25 miles of creek bed and floodplains. The development of these Design/ Development Guidelines has been made possible by the work prepared for the South Chollas Creek Branch/Phase 1 Wetlands Management Plan. Specifically, the wetland restoration and rehabilitation guidelines prepared by consultants Estrada and KEA have been incorporated into this document.





# A. Wetland and Upland Restoration and Rehabilitation

One of the main objectives of the Community Vision for Chollas Creek Park is to restore the habitat in those areas that have some natural remnants. Restoration efforts should also include mitigation credits and improvements from projects that disturb wetland habitats within the sub-region hydrological basin covered by the community planning areas of Barrio Logan, Southeastern San Diego, City Heights, and the Eastern Area. Mitigation credits will be specifically applicable to zones that are presently disturbed and have been identified for reclamation to provide expanded wetland function. This program can assist the habitat enhancement effort and preclude the export of mitigation benefits to other creeks and rivers from the communities affected by development.

Wetlands are among the most important ecosystems in the world. They provide vital fish and wildlife habitat, suppress floods, recharge the aquifer, protect shorelines, cleanse polluted waters, and provide numerous other functions which underscore the need for protection and proper management of wetland resources (Mitsch, William J, and Gosselink, James G. Wetlands [3rd Edition], John Wiley and Sons, Inc. 2000). Wetlands and their related upland environments are protected by federal law, state law, and local policies and ordinances that regulate wetlands and associated sensitive plant species. The guidelines that follow are based on such policy and regulatory context.

The Southeastern San Diego Community Plan specifically recognizes the potential asset of habitat restoration as it states:

"Creeks and related drainage areas are an important open area linkage that connect the community, from the inland canyons and hillsides to San Diego Bay. Chollas and Paleta Creeks, if carefully designed, can provide the Southeastern communities with a unique linkage system not available to any other community in San Diego. Design creativity should be exercised in the development and redevelopment of the sites adjacent to these creek areas. Two conditions exist relative to creek development. Some sections of the creek system are still in a natural or naturalized state. The naturalized condition is









represented by natural flood plains and/or channelized rip rap and earthen slopes. Different sets of standards have to be devised to address these two very different conditions...." (Source: Southeastern San Diego Community Plan, 1987, page 146.)

The natural creek condition is most prevalent in the Mid-City Communities, with some remaining natural sections in Encanto and Southeastern San Diego. There are areas that have been identified to contain sensitive plant and animal species by the City's Multiple Species Conservation Plan (MSCP). One such location of the federally threatened Coastal California Gnatcatcher (Poliophila californica) and a large patch of sensitive Coastal Sage Scrub have been identified between Roswell and Market Streets in the Emerald Hills Branch. Several populations of Coast Barrel Cactus (Fetocactus viridesious), a California Native Plant Society (CNPS) List 2 species, is known to occur along the slopes of the Encanto Branch and on some of the tributary canyons. Other sensitive plant species that potentially could occur within the study area, albeit in small numbers, include Western Dichondra (Dichondra occidentalis) also a CNPS List 4 species. These could exist in association with Coastal Sage Scrub or Chaparral vegetation. Southwest Spini Rush (Junctus acutussup leopoldii), another CNPS List 4 species, could occur along portions of Chollas Creek with a more permanent water supply. However, as of yet this species has not been observed.

Some of the native shrub elements are present, but are so scattered that they do not represent native shrub habitats, such as Chaparral or Sage Scrub. The more conspicuous natives include: Lemonade-Berry (*Rhus Integrifolia*), Toyon (*Heteromeles arbutifolia*), Cholla (*Opuntia sp.*), Broom Baccharis (*Baccharis sarohroides*), and Flat-top Buckwheat (*Eriogonum fasciculatum*).

Detailed Wetland Management and Habitat Enhancement Plans will be prepared for the various sections of the creek to identify the habitats of specific species. Their locations will determine the basis and scope of restoration plans for each phase of development.

#### Policy Context:

The following pertinent policies are found in the Mid-City Communities Plan, Southeastern San Diego Community Plan and Barrio Logan-Harbor 101 Community Plan, and are pertinent to wetland and upland habitat preservation, restoration, and open space system linkage. They are collected and listed here to provide a proper context to the Design/ Development Guidelines that follow.

#### Wetland/Riparian Habitat

"Improve and enhance riparian habitat In Chollas Creek." (Mid-City Communities Plan page 37)

"Apply the appropriate development restrictions to riparian areas along Chollas Creek." (Mid-City Communities Plan page 37)



"Improve and enhance riparian habitat in Chollas Creek as a means of improving water quality." (Mid-City Communities Plan page 38)

"Provide soil erosion and flood protection in a manner sensitive to the park's habitat values, using natural materials that blend with the surrounding environment." (Mid-City Communities Plan page 50)

"Preserve creeks and drainage areas in their natural state. The Chollas Creek system is an important linear open area resource. All creeks in the community should be made available for passive recreation where safe." (Source: Southeastern San Diego Community Plan page 79)

"The creek area should be maintained or rehabilitated to its natural environmental quality, as much as feasible. Any channelization should be of naturalized form, with stone and undulating earthen sloped edges." (Source: Southeastern San Diego Community Plan page 147)

#### Upland Habitat

"Apply appropriate zoning restrictions to all steep slopes (in Mid-City) to ensure that sensitive slopes and natural habitats are protected." (Mid-City Communities Plan page 37)





"Preserve Hillside areas. Preserve areas of native vegetation." (Mid-City Communities Plan paga 39)

"Preserve sensitive slopes, canyons, flooplains and other areas designated as open space through acquisition, zoning, resource regulation or other available methods" (Mid-City Communities Plan page 39)

#### Open Space System

"Preserve and enhance Chollas Creek as a linear open space system to provide passive recreational opportunities, visual relief and biological habitat preservation." (Mid-City Communities Plan page 39)

"Provide soil erosion and flood protection in a manner sensitive to the Park's habitat values, using natural materials that blend with the surrounding environment." (Mid-City Communities Plan page 50)

"Where acquisition of Chollas Creek is not feasible, explore other means of preservation such as open space easements, development restrictions and other means." (Mid-City Communities Plan page 39)

"A natural linear park should be developd taking advantage of the Chollas Creek regional open space development potential." (Barrio Logan - Harbor 101 Community Plan page 136)

"The retention of undeveloped paper streets and alleys would assist in the preservation of the area as open space.....Utilize easements and appropriate open space zoning to manitain and enlarge parks and open space." (Mid-City Communities Plan page 40)

"Encourage the use of reclaimed water for landscaping and encourage low water development landscaping." (Mid-City Communities Plan page 38)

#### DESIGN/DEVELOPMENT GUIDELINES

The Guidelines that follow are designed to give specific design direction to any development impacting wetland, upland and the open space system. As stated earlier, they are designed to address local, state and federal requirements in the context of the special environs of Chollas Creek.

#### Retain Natural Features

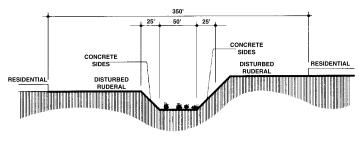
"Retain existing vegetation, ravines, watercourses and topographical features."

(Project First Class Urban Design Program, p. 94)

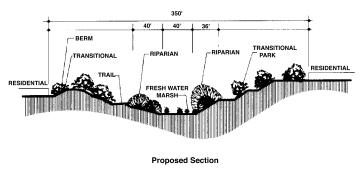
#### Natural Setting

Existing vegetation should be preserved, enhanced and maintained. All non-native, invasive plant material should be removed from the creek . Retention of the natural ravines, watercourses, drainage areas, and topographic features shall be a primary consideration. In addition, new landscaping should complement the natural selections (see vegetation selections that follow). Watercourses should not be altered or undergrounded. When some alteration of watercourse has to occur, a natural setting should be re-created, without concrete channeling, and without covering the channel.





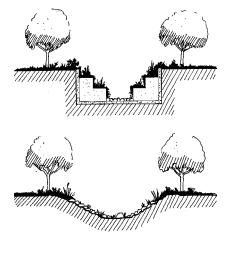




**Typical Restoration Area** 

#### Restore Disturbed Areas

In general, disturbed areas where some form of channelization has taken place with relatively wide earth bottoms, make wetland and vegetative restoration possible. Channels can be replaced by berms or "block-crete" that support steep grading and permit water drainage, aquifer recharge, and plant growth between structural elements. Please refer to Appendix I- Programmatic Habitat Restoration and Management Actions for details on methods to implement this Guideline.





## Avoid Channelization

Avoid new channelization: channelizing the Creek creates a new set of environmental problems, visual dilemmas and physical safety issues that can be avoided by improving the creek's edge and upland area. As illustrated, the creek can be wrapped with stepping edges to ensure a safe exit from the channel.

#### Integrate Vacant Parcels Abutting the Creek

Small vacant parcels adjacent to the creek channel or streets rights-of-way should be developed and used, as feasible, for landscaping and pocket parks, intergrating them with the Chollas Creek landscaping system.

#### Restore Native Wetland Vegetation

Restore native soils and vegetation in the Creek channel and sides to re-stablish its natural wetland function and appearance. Please refer to Appendix I- Programmatic Habitat Restoration and Management Actions for details on methods to Implement this Guideline. The following vegetation tables should be used to guide wetland restoration.

#### Freshwater Marsh Species Composition

Species	Pounds Per Acre	Minimum Percent Purity	Minimum Percent Germination	Pounds of Viable Seed Per Acre
Anemopis californica - Yerba Mansa	5	45	60	0.3
Ambrosia psilostachya - Western Ragweed	3	45	60	0.9
Iva haysiana - San Diego Marsh Elder	1	35	20	0,7
Juncus acutus - Spiny Rush	2	85	40	0.7
Juncus mexicanus - Mexican Rush	2	85	40	0.7
Pluchea orodrata - Marsh Fleabne	1	35	60	0.2
Pluchea serivea - Arrow weed	0.5	35	60	0.1
Acirpus acutus var. occidentalis - Tule	1	50	40	0.4

Notes:

Dry-spread seed mix shall be applied over the entire enhancement area following installation of container plantings. All seed shall have originated in either San Diego, Riverside, or Orange counties.

Estimated percent purity/percent germination figures.

The pounds per acre of seed to be applied shall be adjusted to achieve the specified pounds per acre of viable seed when actual percent purity/germination figures are calculated.

#### **Riparian Scrub Species Composition**

Species	Container Size (gal)	Spacing (Feet on Center)	Percentage of Cover	Density Per Acre
Baccharis salicifolia - Mulefat	1	8	40	200
Platanus racemosa - Sycamore	5	2	20	30
Populus fremontii - Cottonwood	5	2	20	30
Rosa californica - California Rose	1	6	20	100
Sambucus mexicana - Mexican Elderberry	1	15	5	40
Salix exigua - Sandbar Willow	1	10	10	50
Saelix leavigata - Red Willow	5	8	15	100
Salix lasiolepis - Black Willow	5	8	35	200
Vitis girdiana - Desert Wild Grape	1	8	5	500



Notes:

Container Plants should be propagated from materials collected within a 100-mile radius from the site.

Plants shall be grown by a qualified nursery specializing in native plant propagation.

Relative position of trees and shrubs is subject to approval byproject biologist/landscape architect.

#### **Riparian Scrub Dry-Spread Seed Mix**

Species	Pounds Per Acre	Minimum Percent Purity	Minimum Percent Germination	Pounds of Viable Seed Per Acre
Artemisia douglasiana - Mugwort	4.0	10	50	0.2
Baccharis salicifolia - Mulefat	3.0	2	40	0.2
Iva hayesiana - San Diego Marsh Elder	1.0	35	20	0.7
Mimulus puniceus - Monkey flower	1.0	2	55	0.1
Oenotheras elata ssp Evening Primrose	1.0	98	75	0.7
Plantago ovata - Plantain	5.0	98	75	7.3
Pluchea orodrata - Marsh Fleabne	0.5	35	60	0.1
Urtica holosericea - Nettle	2.0	50	60	0.6

Notes:

Dry-spread seed mix shall be applied over the entire enhancement area following installation of container plantings. All seed shall have originated in either San Diego, Riverside, or Orange counties.

Estimated percent purity/percent germination figures.

The pounds per acre of seed to be applied shall be adjusted to achieve the specified pounds per acre of viable seed when actual percent purity/germination figures are calculated.



#### Vegetate Upland Areas to Complement Creek Habitat

Upland vegetation areas ouside the creek-bed should be designed to supplement creek-bed vegetation and present an enhanced park-like entry into the creek bed. Usually trails will be provided and designed along the top of the creek bed in conjunction with the upland vegetation. Please refer to Appendix I- Programmatic Habitat Restoration and Management Actions for details on methods to implement this Guideline. The following Vegetation Tables should be used to guide wetland restoration.

#### **Transitional Buffer Species Composition**

Species	Container Size (gal)	Spacing (Feet on Center)	Percentage of Cover	Density Per Acre
Artemisia californica - Sage Brush	1	5	30	50
Baccharis pilularis - Chaparral Broom	1	5	40	40
Heteromeles arbutifolia - Toyon	1	8	40	20
Quercus agrifoia - Coast Live Oak	5	20	10	20
Platanus racemosa - Sycamore	5	15	10	20
Populus fremontii - Cottonwood	5	15	10	20
Rosa californica - California Rose	1	5	30	50
Sambucus mexicana - Mexican Elderberry	1	8	30	15
Salix exigua - Sandbar Willow	1	8	30	50

Notes:

Container Plants should be propagated from materials collected within a 100-mile radius from the site.

Plants shall be grown by a qualified nursery specializing in native plant propagation.

Relative position of trees and shrubs is subject to approval by project biologist/landscape architect.

#### Transitional Buffer Dry-Spread Seed Mix

Species	Pounds Per Acre	Minimum Percent Purity	Minimum Percent Germination	Pounds of Viable Seed Per Acre
Artemisia douglasiana - Mugwort	4	10	50	0.2
Baccharis pilularis - Chaparral Broom	3	2	40	0.2
Isocoma menziesii - Coastal Golden Bush	4	20	20	0.3
Mimulus puniceus - Monkey flower	1	2	55	0.1
Oenotheras elata ssp. leopoldii - Evening Primrose	1	98	75	0.7
Oenothera hooderi - Hooker's Primrose	1	98	75	0.7
Phacelia sp Phaselia	0.25	35	60	0.1
Pluchea sericea - Arrow Weed	0.5	35	60	0.1

Notes:

Dry-spread seed mix shall be applied over the entire enhancement area following installation of container plantings. All seed shall have originated in either San Diego, Riverside, or Orange counties.

Estimated percent purity/percent germination figures.

The pounds per acre of seed to be applied shall be adjusted to achieve the specified pounds per acre of viable seed when actual percent purity/germination figures are calculated.

## Maintain Natural Drainage Patterns

Natural drainage should be maintained by: preserving slopes and soil elevation to maintain natural runoff patterns; maintaining soil composition that allows natural water filtration; and carefully assessing appropriate ground cover and new soil import to assure that the natural runoff and drainage patterns are not changed.

## Recharge the Creek's Aquifer

Maintain porous and natural materials to permit the natural recharge of the aquifer. If grading in the creek is undertaken, assure that a soil analysis is made and new soils or surfaces applied will allow for proper drainage, filtering, and aquifer recharge.

#### Maintain and Enhance Water Quality

Maintain and enhance the creek's water filtering function, if at all possible, by maintaining natural soils. If grading is necessary, replace with new soils and ground cover that will maintain and enhance the water quality. Sandy soils, porous soils, and plant materials that provide cleansing action should be used to restore disturbed areas.

#### Control Erosion

Prior to any grading or changes in topography, an analysis should be made of erosion-related issues through an evaluation of new soils or surfaces applied, projected water velocity, vegetation impacts on the slowing down of water, and siltation conditions. Water de-celeration structures and erosion control structures may need to be considered where high erosion levels are identified.

#### Water Reclamation

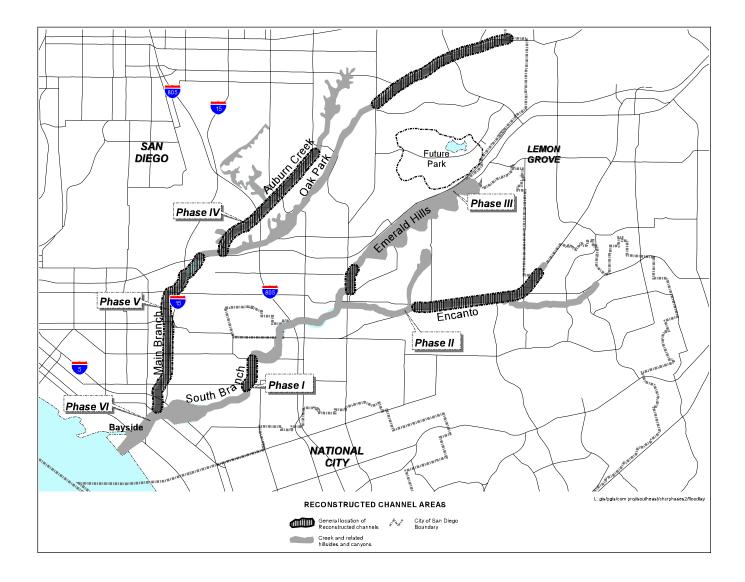
Use reclamation technologies whenever ponds or other water areas are planned as part of the Chollas Creek development. Water reclamation programs may also be used to recharge the aquifer. This is a long-term program which will be available upon development of improved technologies and community acceptance. In the meantime, pilot projects may be considered in conjunction with interpretive programs and development.

#### Flood Safety

All new improvements in the Chollas Creek will address flood safety.







# **B.** Channel Reconstruction

Open space development opportunities are made possible by Chollas Creek's multiple branching system. Those areas that have been concreted-in should be reconstructed and beautified. The concrete channelization presents unique problems. There is not enough space to work with since the channel has been designed exclusively to carry water at high speed during a flood event of up to 50-100 year probability. Removing the concrete surfaces could result in loss of protection from flooding for the adjacent properties. Yet, in their present form, these channels present their own safety challenges with water traveling at high speeds, making it a dangerous situation to be caught in. Accidents that have occurred in Chollas Creek have been in these concrete channel areas. The challenge to design and development is to introduce designed landscape elements, including the hardscape materials, creating safety harbors, and beautifying the sections in an artistic manner.



#### Policy Context

The following policies taken from the applicable community plans address the issue of channelization and channel area reconstruction. These policies are the basis for the Design/ Development Guidelines that follow.

#### Urbanized Creek Areas

"Other sections of the creek system are no longer natural, and should be considered urbanized. The urbanized condition is represented by narrow channels with concrete sides and soft or hard bottom."

(Southeastern San Diego Community Plan Page 146)

"Development should view these channel areas as sculptural hardscape elements..."

(Southeastern San Diego Community Plan page 149)





## DESIGN/DEVELOPMENT GUIDELINES

The guidelines that follow are designed to implement the urban creek policies of the community plans.

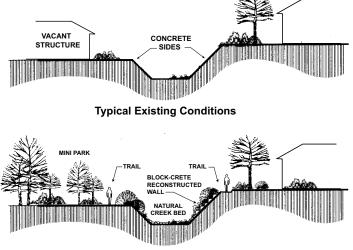
### Hardscape Channelization

New channelization of the creek, if it should occur, should consist of stones or stepped concrete. When stones are not possible due to land availability constraints, the slope of the creek wall may be stepped or modified creating a hardscape sculpture.



#### Creek Wall

Care should be taken to ensure that the grade of the creek wall slope is consistent with the Land Development Code requirements, Section 142.0133, which are currently 50% if the slope is greater than 10 feet in height, or 66% if the slope is less than 10 feet in height. The safety of the area should be the guiding force in the overall design.





#### Concrete Channel Removal

To the extent possible, concrete channels should be removed and underground channels should be daylighted. This may be possible in a few cases. Channel walls may be reconstructed with berms and block-crete, resulting in a more natural function and appearance.



#### Channelization as an Arts Project

Development of the creek through hardscape should be approached as a public art design and development program through the City's Public Arts Commission, in order to provide a quality human made environment. The importance of hydrology and flood safety will require that any consultant or artist hired for creek design include in his/her team a hydrologist and civil engineer that can capably address the flood and safety related development issues.

#### Organic Design

Design options include undulating walls and bottoms designed to slow down or provide safe ledges, artistic hardscape surfaces, safe pedestrian trail ledges within the channel, partial closure or covering all or portions of the concrete channel turning its surface areas into pocket or linear parks.

"Design should emphasize undulating organic or jagged walled surfaces, create patterned paved surfaces, and provide designs that are multi-functional hydrologically and recreationally."

(Southeastern San Diego Community Plan page 149)

#### Use of Porous Materials

In order to maintain the creek's aquifer, enhance its water quality/filtration function, and control flooding and erosion, use of porous materials should be given priority over impermeable materials. Earth embankments, block-crete, sandy soils, and vegetation are preferable to impervious concrete and other hardscape surfaces that do not make allowances for water filtration and aquifer recharge through the materials or the joints between materials.

#### Multi-functional Active Uses

"Multi-functional uses within a paved channel element can include such activity as skating areas, competition track areas, spectator seating, small amphitheaters, etc. These high activity uses should be limitted to locations adjacent to parks, schools or high activity development areas [with strictly controlled access]." (Southeastern San Diego Community Plan page 149)















### Multi-functional Passive Uses

"Locations adjacent to residential uses should be designed as passive sculptural areas for the visual enjoyment of adjacent neighbors."

(Southeastern San Diego Community Plan page 149)

#### Underground Passages

Another reconstruction-retrofit issue relates to underground passages of the Creek under freeways and major roads. Whereas these locations are today passable by pedestrians, they are socially unsafe and should not be used for such purposes until a safe option is provided within the context of an arts project.

#### Bayside

"Design considerations for its development should include: Elevating the area to the south of Rigel Street industrial area, and developing berms for flood protection purposes, maintaining the channel bottom natural and developing landscaping areas along its edges. The landscaped area could include man made structures with sculptural qualities that are combined with natural landscaping, trees and plants..." (Barrio Logan/Harbor 101 Community Plan page 189)

# C. Landscaping

Proper development of Chollas Creek requires that special consideration be given to landscaping amenities along the corridor, for both hardscape and vegetation. The Mid-City, Southeastern San Diego, and Barrio Logan/Harbor 101 community plans provide policies regarding appropriate landscape treatments, from vegetation palette suggestions supportive of wetland and other habitat restoration purposes, to sculptural and artistic approaches to hardscape treatments. As the suggestions are implemented over time, the result will be a park-like environment which will substantially enhance the surrounding neighborhoods, ultimately assuring their revitalization.

#### Policy Context

The following policies from the Mid-City Communities Plan, Southeastern San Diego Community Plan and Barrio Logan/ Harbor 101 Community Plan address landscaping issues related to the development of the creek and are the basis for the Design/Development Guidelines that follow.

#### Wetland Vegetation

"Revegetate wetland areas with native wetland habitat." (Mid-City Communities Plan page 50)

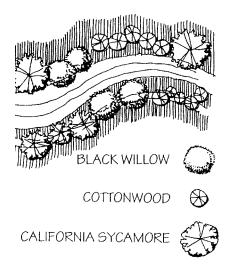
"Landscaping along the channel should include plant species that are typical of wetland creek environments and native to the San Diego area, or are native drought-resistant, depending on their location within the project and proximity to creek water areas. All project landscaping should be designed in a manner that contributes to the overall enhancement of the channel as a sculptural form within a park-like environment." (Southeastern San Diego Community Plan page 149)

"Landscaping along the Creek should use plant species that are typical of wetland/creek environments. Other project landscaping and architectural treatment should contribute to an overall enhancement of the creek's parklike corridor." (Southeastern San Diego Community Plan page 147)









"The Southcrest 252 corridor presents an opportunity to develop a finger of open space from Southcrest Park westward along the corridor." (Project First Class Urban Design Program page 9)

#### Water Reclamation

"Encourage use of reclaimed water for landscaping and encourage low water demand landscaping." (Mid-City Communities Plan page 38)

#### Upland Areas

"Develop passive recreational space in undeveloped canyons, where the natural integrity of the canyon may be preserved." (Mid-City Communities Plan page 39)

"Properties along the rim of the park should provide setbacks with landscaping materials consistent with the wetland habitat and ambiance." (Mid-City Communities Plan page 50)

"Vegetation areas should be used to set-off the man-made sculptural elements, as in a sculptural garden." (Southeastern San Diego Community Plan page 149)

"Develop landscaping buffer areas and pedestrian easements along the community's major watershed, Chollas Creek." (Barrio Logan-Harbor 101 Community Plan page 189)

"Sufficient setbacks should be provided in order to allow for future use of the creek's edge as park-like linkages for pedestrians and bikes."

(Southeastern San Diego Community Plan page 147)

#### DESIGN/DEVELOPMENT GUIDELINES

The following guidelines have been developed to address established policy direction.

#### Minimum Vegetation Ratios

Vegetation should constitute no less than 25% of the landscape design in a given improvement area.

#### Vegetation Edges Plant Palette

"Vegetation for the Chollas Creek edge should include *Cedrus* (cedar), *Pinus torreyana, Cupaniopsis, Plantanus acerfolia.*" (Project First Class Urban Design Program, page 37)

#### Fast Growing Riparian Trees

One design strategy is to incorporate large, fast growing riparian trees within the creek sloped area or in the bed to create a "ribbon of trees that will follow the creek". In essence this would allow the location of the creek to be distinguished from the surrounding community through the visual high canopy. Types of trees should include: *Platanus racemosa, Alnus rhombifolia,* and *Populus sp.* 

#### Riparian Understory Shrubs

A second strategy is that the planting concept for the Chollas Creek Enhancement Program area should utilize riparian type tree plantings and introduce a similar understory planting to complement the creek-like feeling. The understory shrub planting should be located in small masses and should reach a height of 3 feet to 4 feet. A low slope stabilizing groundcover should be planted in addition to the shrubs. Once the trees have become established, the lower branches should be trimmed up to maintain a clear and unobstructed view within the planting areas.

Creek Plant Palette

#### TREES

Platanus racemosa Alnus rhombifolia Populus sp. Salix sp. Betula pendula

#### SHRUBS

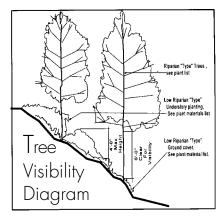
Artemisia douglasiana Baccaris solicifolia Epilabium californiaca Minulus cardinalis Ribes speciosum Rosa californica Sambucus mexicana Rhus laurina

#### **GROUND COVER**

Ceanothus Horizontalis Arctostaphylos Edmunsii Baccaris Pilaris

#### HYDROSEED MIX

100% Seed Pluchea odorata Limonium californicum Layia platyglossa Trifolium obtusiflorum Achillea millefolium Camissonia cheiranthifolia Oenothera elata Amrosia psilostachya Grindelia strita Deschampsia cespitosa Polygonum punctatum Scrophularianica Mimulus guttatus Hordeum brachyantherum







"Tree and plant material should be drought resistant and fast growing, and require little manicuring. The open space buffer and pedestrian easement on both sides of the creek channel and outside the channel proper should be 40 feet." (Barrio Logan/Harbor 101 Community Plan page 189)

#### Reclaimed Water Use

Reclaimed water should be used, as available, for landscaping special water features and aquifer recharge, taking advantage of the creek's natural filtering qualities.

### Landscaped Setbacks

Properties along the rim of the creek should provide landscaped setbacks of 10 feet minimum, or observe their required property setbacks. Their vegetation should use the vegetation lists suggested by this Program.

#### Porous Paving Materials

Hardscape areas should use porous materials that permit continued water filtration to maintain the creek's aquifer. For large paved areas, use vegetation or grass breaks, grasscrete, sand, gravel, and other combinations of porous materials.

#### Setting for Development

"Development should be oriented to use the creek areas as the project's park like frontage, and not turn its back on it. The creek should be used as a positive park-like feature of the project." (Southeastern San Diego Community Plan page 147)





# D. Trail System

Trails provide important continuity and accessibility throughout all reaches of Chollas Creek, effectively creating the much needed linear park-open space system that will ultimately link San Diego's central mesas to San Diego Bay.

The trail system will encompass not only the creek-bed and edges, but adjacent streets and open spaces. Some trails will be rural in appearance to complement natural restoration areas, while other trails will be of an urban character linking the creek to various urban areas. Trails will also have an important phasing component related to timing and phasing of public improvements and creek enhancements. For example, trails will not be incorporated in the creek bed until such incorporation is carefully designed and safe. This condition primarily affects the creek reconstruction areas, where environmental enhancements are not immediately possible, and the creek area does not have space for the development of safe trails on its edge at this point in time.

#### Policy Context

The policies below are taken from the Mid-City Communities Plan, Southeastern San Diego Community Plan, and Barrio Logan-Harbor 101 Community Plan, and are the basis for the Design/Development Guidelines that follow.

#### Link Open Space

"Permanently link and preserve all canyons, slopes and floodways, designated as open space." (Mid-City Communities Plan page 39)

"Provide access to usable public open space systems in order to increase passive recreational opportunities." (Mid-City Communities Plan page 40)

"Create a system of linkages between Mid-City parks and open space." (Mid-City Communities Plan page 39)

"Provide a pedestrian and bicycle linkage from Chollas Park to the Mid-City athletic area and other parks via Chollas Creek." (Mid-City Communities Plan page 50)







"Enhance links between park and open space areas within and outside the community." (Mid-City Communities Plan page 39)

"Increase the opportunities for the public enjoyment of open space areas, including limited access to Radio Canyon and Chollas Creek."

(Southeastern San Diego Community Plan page 75)

"Chollas Creek: The remaining natural portions of Chollas Creek should be planned as a linear park with bicycle and pedestrian paths along a natural or landscaped creek bottom. Concrete channelization shall be forbidden. Public access to the creek should be provided from and through private development and public rights-of-way along the creek. Funding for acquisition, improvements and maintenance should be from an assessment district or similar means." (Southeastern San Diego Community Plan page 78)

"Southeast San Diego's creeks and related drainage areas are an important open area linkage that connect the community, from the inland canyons and hillsides to San Diego Bay. Chollas and Puleta Creeks, if carefully designed, can provide the Southeast community with a unique linkage system not available to any other community in San Diego." (Southeastern San Diego Community Plan page 146)

#### Enhance Pedestrian Trails

"Preserve and enhance Chollas Creek making it accessible, while maintaining and rehabilitating its habitat values." (Mid-City Comminities Plan page 50)

"The remaining natural portions of Chollas Creek should be planned as a linear park with bicycle and pedestrian paths along a naturalized or landscaped creek bottom." (Source: Southeastern San Diego Community Plan page 78)

"Achieve a more connected system of active and passive open space. Chollas Creek and Paleta Creeks should be carefully designed to provide a unique pedestrian linkage system for the community. Public access to the creek should be provided from and through private development and public rights of way along the creek." (Source: Southeastern San Diego Community Plan page 75 & page 146)



"Sufficient setbacks should be provided in order to allow for future use of the creek's edge as park-like linkages for pedestrian and bicycles."

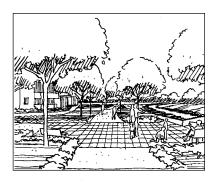
(Southeastern San Diego Community Plan page 147)

#### Development Orientation

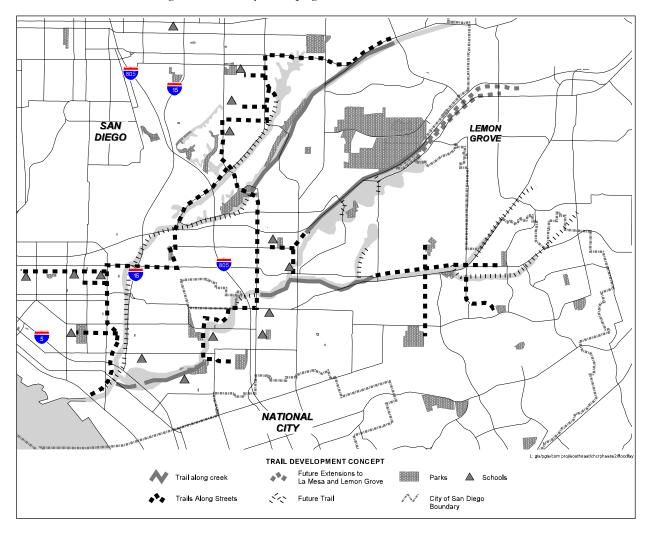
"Development should be oriented to use the natural creek areas as the project's park-like frontage, and not turn its back on it. The creek should be used as a positive park-like feature of the project."

(Southeastern San Diego Community Plan page 147)

"Minimal setbacks from the edge of the channel should be observed. These setbacks should be based on safety facts. The setbacks should be designed as linkages in and adjacent to high activity areas."



(Southeastern San Diego Community Plan page 149)





Off-street parking should not be located on the creek setback, and should be sited so that landscaping can be provided between the parking area and the creek's edge. (Southeastern San Diego Community Plan page 147)

#### DESIGN/DEVELOPMENT GUIDELINES

The following guidelines are designed to implement the adopted policies.

#### Linear Park Trail

Whenever physically feasible, the land adjacent to Chollas Creek should be planned as a linear park and trail system. When there is inadequate space, the trail system should be routed back to public sidewalks until it can be constructed along the creek bed.

#### Natural Trail Design

For new development, wherever existing width allows, an 8 - 10 foot multi-use trail should be developed, flanked with shrubs and trees as illustrated. Trees should be planted in areas at least 5 feet wide on both sides of the trail at a minimum of 30 foot intervals. The trail surface shall consist of the native soil, or where the soil is highly erosive, a tread surfacing material, such as decomposed granite, which will blend with the natural environment. Trail gradients must meet current Americans with Disabilities Act (ADA) standards.Where appropriate, interpretive displays of cultural and natural resources should be installed along the trail route (See Interpretive Section).

#### Trail Safety

Trail development adjacent to the creek should specifically address the issues of safety and maintenance. Lighting should be placed to provide proper surveillance of the area. Solar energy sources should be considered. Safety call boxes should be placed along the trail to provide adequate safety. Removable bollards should be placed at strategic access points along the trail, in order to allow access for emergency and maintenance vehicles. Trail markers should be installed at each entrance or access point, as well as along the route to direct users especially in areas where following the trails is difficult. An emblem common to the entire system should be developed.





#### Street Trails

Wherever a trail has to follow a public street instead of the creek, enhanced sidewalks with street trees should be provided on both sides of the street.

#### Urban Furniture

Amenities such as seating, drinking fountains, bicycle racks, and trash receptacles should be located intermittently along the trail. Seating should be included and be of one type for continuity throughout the Chollas Creek project. Picnic tables may also be located along the trail. They should be of the same character as the benches. Waste receptacles should be located for convenient use and efficient maintenance. Bicycle racks should be located in parks, staging areas, or strategic access points along the trail. Consideration for disable access and use should be included.

#### Staging Area

Staging areas should be located in adjacent parks and at strategic access points along the trail such as street ends. The purpose of staging areas is to facilitate trail use by providing features such as: parking, regulatory and directional signage, bicycle racks, information kiosks, drinking fountains, restrooms, picnic tables, seating and waste receptacles.

#### Public Access

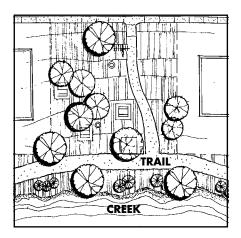
Public access should be provided to the creek from every parcel of private development or every 200 feet. Public access points should include a path 10 feet wide with shade trees flanking the pathway, provide adequate signage, be well-lit, and contain any necessary amenities. This is intended to reduce the possibility of the trail being an isolated amenity in the community.

#### Safety Design

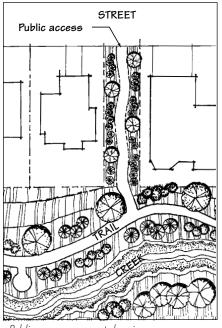
Trail development should avoid the creation of unsafe pockets such as secluded areas with no outlets, or dead-end trail sections. Generally this includes careful design considerations for: surveilance, access control, territoriality, and adequate maintenance. Appendix II- Crime Prevention Through Environmental Design, should be used as the basis for safety trail design.



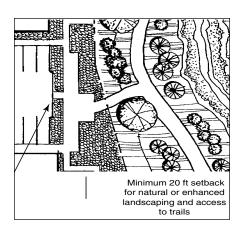








Public access concept drawing



#### Setting for Development

"State Route 252 Corridor lands offer an opportunity to develop a continuity of open space from Southcrest Park extending along the Chollas Creek channel all the way to Interstate 5. The open space link will serve the new residential development proposed for the area. This open space, although modest in size, could be made effective if imaginatively designed and utilized. Encroachment into the flood channel should be avoided to maintain recreational use of Las Chollas Creek. The plan recommends an 11-foot dedication on the north of the existing channel for passive use and 25 feet on the south for active use as a combination bike and pedestrian trail." (Southeastern San Diego Community Plan, Southcrest Neighborhood Element page 236)

#### Residential Connections

Connections from the creek should be made at the end of culde-sacs, and in between parcels at frequent locations to ensure safe and easy access.

#### Commercial/Industrial Connections

Connections from the creek trail to Commercial/Industrial development and adjacent streets should be established.

#### Setbacks

Minimum setbacks of 20 feet from the edge of an urban creek channel, or 15 feet from a property line abutting the creek should be observed to provide additional safety and setback.

#### Transparency

New development should provide 50% transparent walls facing the creek and provide access every 200 feet. The area between the building and the creek should not include parking, but provide seating areas, shade trees and an overall design that compliments the creek.

#### Buffer

A buffer of at least 20 feet should be provided to accommodate a planting strip and shade trees between the creek and the public trail.

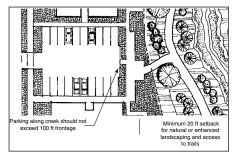
#### Parking

"Off street parking should not be located in the creek setback, and should be sited so that landscaping can be provided between the parking area and the creek's edge. Off-street parking should not be allowed to encroach into setback areas. Parking areas should be located with the widest axis of the parking lot perpendicular to the channel in order to reduce the amount of parking area fronting on the channel." (Southeastern San Diego Community Plan page 147 & 149)

#### Fence Design

"Fencing should be carefully considered for its safety as well as visual qualities. Chain link fencing is not appropriate from a visual standpoint. Chain link fencing, if used, should be carefully designed with wood frames and vinyl coating. High fences should be strategically located to make them appear lower that they are, in order to maintain a human scale to the creek's edge. Wrought iron, open wood, open concrete block, and other types of specially designed fences are appropriate." (Southeastern San Diego Community Plan 147 & 149)







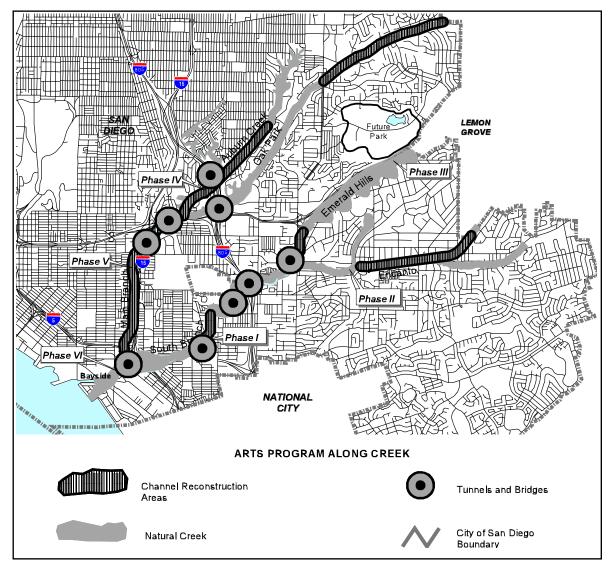


# E. Public Art Opportunities

When the City of San Diego commits to new building and renovation projects, it commits to the reform and renewal of the City by carefully planning the way a space or facility looks, operates, and relates to the community. The City of San Diego Commission for Arts and Culture's Public Art Program is transforming San Diego's built environment by making the artist an integral participant in public planning and design. Since the program began in 1988, more than 90 public art projects have been initiated.

The potential public and private development and revitalization of the Chollas Creek corridor offers a range of possibilities for public art. From environmental and educational projects to the artist-led design of park space and trails, and the special design of street furniture, the opportunities for artist involvement are numerous.









#### Policy Context

The following policies are from the Council Policy Manual, the Mid-City Communities Plan, Southeastern San Diego Communities Plan and Barrio Logan-Harbor 101 Community Plan and are the basis for the Design/Development Guidelines that follow.

"...establish a policy of the City Council to involve artist(s) in selected City Capital Improvement Projects and to provide guidance to City staff and design consultants to implement this policy..address a commitment to excellence in the design of San Diego's built environment..." (Council Policy 900-11)

"Ensure that new development preserves and enhances framed public views of existing aesthetic resources such as parks and community landmarks." (Mid-City Communities Plan page 43)

"Design open space signage and safety fencing in a manner that is visually compatible with, and enhances, the surrounding environment." (Mid-City Communities Plan page 49)

"Sponsor art competitions to design and improve at least one freeway interchange per year." (Mid-City Communities plan page 52)

"Provide public art." (Mid-City Communities Plan page 65)

"Development should view (those) channel areas as sculptural landscaped elements." (Southeastern San Diego Community Plan page 149)



"Design creativity should be exercised in the development and redevelopment of the sites adjacent to these creek areas." (Southeastern San Diego Community Plan page 146)

"Development should view these channel areas as sculptural hardscape element. Their design should emphasize undulating organic or jagged walled surfaces, create patterned paved surfaces, and provide designs that are multi-functional hydrologically and recreationally. Such additional recreational uses could include such activities as skating areas, competition track areas, spectator seating, small amphitheaters, etc. These high activity used should be limited to locations adjacent to parks or high activity development areas (commercial/industrial). Locations adjacent to residential uses should be designed as passive sculptural areas for the visual enjoyment of adjacent neighbors."

(Southeastern San Diego Community Plan page 149)

"Vegetation areas should be used to set-off the man-made sculptural elements, as in a sculpture garden." (Southeastern San Diego Community Plan page 149)

"All project landscaping should be designed in a manner that contributes to the overall enhancement of the channel as a sculptural form within a park like environment." (Southeastern San Diego Community Plan page 149)

"Fencing should be considered for its safety as well as visual qualities. All walls or fencing should be designed as an integral element of the channel's sculptural design. The closer a wall or fence is to the channel, the more the fence or wall needs to be incorporated into the channel form." (Southeastern San Diego Community Plan page 149)

"Chollas Creek development...Landscaped areas could include manmade structures with sculptural qualities, that are combined with natural landscaping, trees and plants." (Barrio Logan/Harbor 101 Community Plan page 189)

"Improve public and semi-public agency images through compatible urban design considerations sensitive to the community's assets." (Barrio Logan/Harbor 101 Community Plan page 190)

"Reinforce existing community identity through environmental beautification." (Barrio Logan/Harbor 101 Community Plan page 52)







# a.

#### DESIGN/DEVELOPMENT GUIDELINES

The following guidelines are designed to implement the adopted policies.

#### Incorporate Public Art Throughout

"Incorporate public art into all Riverwalk improvement and Constructions." (Source: Chollas Creek Community Workshop Common Vision, March 21, 1998.)

#### The Role of the Artist

Design and construction projects should provide opportunity for artist involvement. When the artist's concepts are included, and when the overall design of the project is first developed, an enhanced environment results.

With the artist as a lead designer, a project benefits most from the leadership and vision of an artist when, the artist assumes the leadership for the team for the development of the facility. In other cases, the artist may be hired by the City to lead the entire design effort. The artist, in turn, selects and hires the architect, landscape architect, engineer and other technical support.

With the artist as a team member, as a project is just beginning, an artist may be selected as a member of the design team. This is the role most often assumed by the artist in City of San Diego design and construction project. When a facility is fully designed or construction is underway, an artist may be commissioned to create an artwork for a specific location. In 1992, the City of San Diego City Council adopted a visionary public art policy that promotes diversity and artist involvement at the inception of selected City design and building projects.

#### Public Art Diversity

The historic cultural and ethnic diversity of the central San Diego communities offers a wealth of opportunities to engage in a variety of artistic expressions. Public art in Chollas Creek should take many different forms, it may be incorporated into private development along the creek, trail systems - natural as well as along public sidewalks or walkways, and in public areas on public or private property.

#### Public Art in Civic Projects

Properties owned by the City of San Diego for purposes of Park and Recreation, Water Utilities, and MSCP, or agencies such as MTDB provide great opportunities to engage the community artistic projects. Public art opportunities within government owned or controlled parcels or easements may consist of: interpretive programs, sculptures, lighting, linkage connections between public transit lines and the Chollas Creek Park trail system, artwork in the public right-of-way.

#### Public Art Integrated in Habitat Restoration Projects

Large sections of the creek such as the State Route 252 Corridor in Southcrest, and the Oak Park section lend themselves to a combined effort of habitat restoration and public art project, where interpretive programs and improvements should be integrated into the project.

#### Creek Trail System

Trail development throughout the creek should be designed as an arts project. Public Arts approach to project design and development can benefit the quality of design of natural trails, walkways and sidewalks. Public Art elements should be expressed in the paving form, pattern, and color, as well as in interpretive signage, and urban furniture.

#### Creek Underpasses

As has already been mentioned, creek underpasses exist where a major street or freeway crosses the creek. For the most part these underpasses are presently socially unsafe, they are ugly, single-function, and forbidding. However, the structures have the possibility of becoming wonderful artistic elements of the pedestrian experience if designed with forethought to human interest and use. An artist has the capability of conceiving such an approach, and creating a work of art that will instill pride in the community.















## Creek Bridges

There are numerous bridges that cross Chollas Creek. Most are streets but some are exclusively pedestrian oriented. Bridges should also be designed by artists, since for the most part they provide special views of the creek, or gateway entries into the creek environs. The typical single purpose bridge is not adequate to provide the multiple functions and visual quality desired for the ultimate development of Chollas Creek. The involvement of an artist would substantially enhance the design and provide special human interest.

#### Bayside

The Bayside is the area at the creek's estuary in San Diego Bay within the Barrio Logan/Harbor 101 community that has multiple functions. Some are strictly engineering functions addressing flooding, hydrology, habitat restoration, water quality, education, recreation and human related functions. Other important functions which the area can satisfy are recreational since the area has bay frontage, pedestrian orientation, view enhancement, and commercial development opportunities. A Public Arts project would be an excellent approach to its ultimate development, which could balance engineering, habitat enhancement and human needs and development opportunities.

#### Urban Furniture

Public Art can become an important feature of urban furniture design and construction creating a special signature for Chollas Creek. This approach should not be just limited to benches and water fountains, but should include features such as fencing, lights, pavement patterns, etc.

#### Public Art and Crime Prevention

Often, improvements such as fencing, gates, landscaping lighting and other improvements have to be provided in order to create controlled human environments that are not inducive to crime. Public Art can have a major positive impact on the design of these improvements by tailoring designs to inspire and meet the need. Artists should be involved in the design of major sections where crime prevention is a particular issue that has to be addressed. For more information on Crime Prevention Through Environmental Design, typically implemented through the City's Police Department review, please see Appendix II.

### Public Art for Private Development

Art opportunities proposed on private property will remain at the discretion of the private developer. The San Diego Arts Commission can provide assistance for the selection process of artists on projects.

#### Public Art and the Interpretive Program

Art opportunities should be provided in the design of interpretive exhibits, stations, and centers.



# F. Education and Interpretive Program

A major component of the Chollas Creek Enhancement Project is to educate the citizenry about the importance of the Creek. Interpretive elements are those which provide individuals with opportunities for self-exploration and discovery without the assistance of an educator. These elements serve to inform citizens as stakeholders, and therefore, encourage them to be stewards of the creek.

# Policy Context

It is the City's policy to use open space park resources and habitat preservation as vehicles for community education about the city's geographic context, natural resources and history. Examples of such endeavors are Mission Trails Regional Park, Penasquitos Canyon Preserve, and San Dieguito River Park. The guidelines that follow are based on this important city policy and practice.

# DESIGN/DEVELOPMENT GUIDELINES

The following guidelines are designed to take advantage of the Chollas Creek system as a basis for community education and interpretation of habitat and cultural values.

# Recognize Nature and History

"Recognize the creek's natural habitat, its historical role and its educational resource potential through an interactive educational exhibit program." (Chollas Creek Community Workshop Common Vision, March 21, 1998.)

## Paleontology

Fossil remains, fossil sites, fossil-producing geologic formations, and geologic formations that have the potential for containing fossil remains are all considered to be resources/potential resources. The goal of paleontological mitigation programs is the recovery and permanent storage of significant fossil remains that would otherwise have been destroyed and therefore lost to excavation activities. Recovered fossils represent a sample of the paleontological resources of our area and they will be available













for research, education, and enjoyment of future generations. Paleontological resources are scarce non-renewable natural resources and are subject to the same environmental review process as biological and cultural resources. Paleontological exhibits should be fostered throughout Chollas Creek using the schools as a focus. (Please refer to the City of San Diego Paleontological Guidelines Revised June 2000).

#### Promote Education About Chollas Creek

In addition to the interpretive element, there is a need to reach out to the community schools and provide educators with a variety of resources. The primary difference between the Interpretive Program and the Educational Program is that educators are actively involved in assisting students in the learning process. Additionally, sites designed specifically for school use may sometimes be limitted to the general public. Possible education themes that could be developed include: cultural resources, prehistory, history, archaeology, paleontology, biology, environmental quality, and hydrology. (Chollas Creek Community Workshop Common Vision, March 21, 1998)

#### Informational Exhibits

Chollas Creek is an important natural urban open space feature that should become a valuable educational and interpretive resource for central city communities. Informational exhibits should be created which specifically demonstrate the interaction between natural and urban processes. Groups that would benefit from such a resource include: schools and universities, public agencies, special interest groups, families, and local residents.

#### Interpretive Centers

Interpretive Centers should be constructed intermittently along the creek. These centers may include such features as: gallery and exhibit space, auditoriums with audio/visual presentation capabilities, meeting/conference rooms, and a small library or reading room. Other amenities may include an amphitheater or outdoor classroom, picnic areas, and demonstration areas. Restrooms should also be considered as a component of these centers.

### Interpretive Stations

Interpretive Stations should be established intermittently along the creek. These should consist of large permanent exhibits, usually comprised of several single or double sided panels of information. The panels may have hinged plexiglass covers which can be opened to replace temporary informational notices. The panels may be freestanding, uncovered, or covered by a small shade element. Stations may also include amenities such as seating and lighting, as well as workspace for students to conduct research. They may be located within a shade structure or gazebo.

#### Interpretive Signage

Interpretive signage should be provided along the entire creek trail system. It should consist of small, informative signs that would identify special natural features along the trail system, as well as adjacent cultural, historical and paleontological resources. These should be located where opportunities and needs arise.

#### Educational Resources

In order to foster a relationship between Chollas Creek and surrounding schools, a number of educational resources should be constructed along the creek. These should be planned in conjunction with school sites located near the creek.

# Educational Facilities

The creation of hands-on learning opportunities is something which is widely-needed along the creek corridor. Facilities such as science laboratories and water quality monitoring stations, would allow teachers to bring their students to the creek for firsthand educational experiences. Larger facilities could include; classrooms, demonstration areas, amphitheaters, audio/ visual equipment, lab equipment, restrooms, and a host of other amenities. Smaller facilities could include such amenities as a shade structure with seating and workspace for students. Security measures, such as fencing, key-card entry systems, and monitoring, should be carefully considered.

## Watershed Protection Theme

The subject of watershed protection is something which should be incorporated into the curriculum of surrounding schools. In an effort to make students more aware of the effects of















pollution, the Chollas Creek Watershed is now being studied as an example of how household toxic substances pollute our waterways. Several years ago, the Environmental Health Coalition, in conjunction with dozens of local organizations, developed a comprehensive educational program known as the Chollas Creek Watershed Protection Project. The goal of the program is to increase awareness about the causes and prevention of nonpoint source water pollution. The following materials have been developed by this project, and should be available to local educators. Lessons include:

"What is a watershed" "A raindrop goes to sea" "Storm drain walk" "Duck stencil activity" "Oil spill" "Water on the move" "Everybody need a home" "Food chain" "Sticker activity" and, "Teacher's key to mapping the San Diego Bay Watershed" (grade levels K-6). "Watershed" "What goes around comes around" "Mapping the watershed of San Diego Bay" "Wetland metaphors" "River watershed exercise, Where does water go after school?" "Storm drain walk" "No water off a duck's back" "Deadly links, Phosphate problems" "Where have all the marshes gone" Living research: "Aquatic heroes and heroines" (Grade Levels 7-12).

#### Cultural Resource Theme

Chollas Creek was the site of Native American villages and trails. The Citys "pre-contact" history should be memorialized and celebrated with exhibits, designs, and features reminiscent of our historical past.



