The Wilshire Center Urban Oases Plan

Towards a Healthy Watershed

Five Guys Consultant Group
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Executive Summary

The Wilshire Center district of Los Angeles, California is a dense, diverse neighborhood with vibrant commercial corridors. Small multi-level malls, discount outlets, ethnic restaurants and multicultural business abound while dense residential neighborhoods that are growing in popularity provide a solid base for businesses. The district also possesses an extensive stock of historic residential, office and religious/institutional architecture at a concentration that is nearly unrivaled in Greater Los Angeles. Wilshire Center has excellent access to public transit with three Metro Red Line subway stations located along Wilshire Boulevard and thorough and frequent bus service coverage. These assets provide a strong framework around which to reduce watershed impacts and improve the overall sustainability of Wilshire Center.

FiveGuys Consulting has created a multifaceted plan aimed at reducing the watershed impacts and enhancing the overall sustainability of Wilshire Center through a number of physical and design interventions. All proposed interventions are premised on a set of core principles. These include a commitment to pursuing sustainable growth, preservation of natural and cultural resources, as well as intersectoral collaboration to achieve our vision.

The central element of the Plan is a set of three "urban oases" in key Wilshire Center locations. Oasis 1 is located east of Vermont Avenue between 3rd and 4th Streets, Oasis 2 on the southeast corner of Vermont Avenue and Wilshire Boulevard, and Oasis 3 north of Wilshire Boulevard between Oxford Avenue and Serrano Avenue. These locations were chosen as oasis sites because the availability of land, accessibility, intensity of use, ease of land assembly or acquisition, and opportunity to serve multiple public goods through green interventions.

Each oasis includes a water feature such as a daylighted stream or water retention pond, as well as native and drought-resistant vegetation on ground-level and rooftop green space to reduce urban storm water runoff and reduce energy consumption. Public open space with permeable surface materials and native plants surround each water feature and provide the public with opportunities to learn about and experience natural hydrology in an urban setting. Green roofs are concentrated within a two-block radius of each oasis, thus reducing the urban heat island effect. Oases 1 and 2 both feature proposed mixed-use developments which will provide ground-level retail and entertainment to activate the public spaces surrounding them, while Oasis 3 transforms existing public hardscape into a permeable space with a daylighted stream and retention pond.

In addition to the three oases, the Plan also includes a number of streetscape and connectivity improvements. The primary connectivity enhancement is the Bio-Street, which connects all three oases along Wilshire Boulevard and Vermont Avenue. The Bio-Street's main feature

is conspicuous bioswales along large stretches of each block which will allow surface runoff to infiltrate into the ground before reaching storm drains. Sharrows, bike corrals, and the Fourth Street Bike Boulevard will all increase the bicycle-friendliness of the district, thus enhancing transportation diversity and making alternative transportation modes more attractive. The small number of existing alleyways in Wilshire Center will be converted to pedestrianized Green Alleys, which will include permeable pavement, native vegetation and bioswales, as well as low-energy consumption LED lights for illumination.

Finally, the Plan proposes parking improvements that will serve both circulation and watershed management purposes. Three parking structures are proposed, which will free a number of surrounding surface parking lots for green space or development. We propose the installation of parking meters on all streets while instituting a program similar to Old Town Pasadena's Zoning Parking Credits program. This will generate BID revenue for many of our proposed improvements, funnel large amounts of parking into the proposed structures, and allow commercial and public institutions to maximize lot coverage and reduce the area of surface parking.

Intersectoral collaboration between different levels of the public sector and the private sector will be critical to successful implementation of the proposed improvements. Our implementation approach is characterized by thoughtful, sensitive, and cost-effective funding strategies that involve players such as the City of Los Angeles, the Community Redevelopment Agency of Los Angeles, the Los Angeles Department of Transportation, the State of California, as well as private interests. We have identified a multitude of public funding sources targeted at green improvements and propose creative revenue-generating strategies that minimize the burden on government and taxpayers while taking advantage of market and private interests. All of these elements come together to form a plan that is economically, environmentally, and socially sustainable.

Introduction & Background

This report has been prepared by FiveGuys Consulting for the Wilshire Center Business Improvement District (WCBID). The WCBID operates in an area roughly bounded by 3rd St., Hoover St., 8th St., and Wilton Place in central Los Angeles, California. As part of its mission to improve the area for the benefit of its constituent businesses, WCBID has committed to an ambitious environmental program called the Cool District Plan which seeks to reduce Greenhouse Gas emissions 80% below 2008 levels by 2050 (1) . As a complement to this effort, WCBID has requested support in improving its storm water management performance.

For reference, "[a] watershed is the land area where water collects and drains onto a lower level property or drains into a river, ocean or other body of water. Watershed management is the integration and coordination of activities that affect the watershed's natural resources and water quality. It brings together services like flood protection, water conservation, preserving and creating open space for recreation and habitat, and reducing pollution of water resources" (2) [emphasis ours]. The aim is to find feasible ways to promote Low Impact Development (LID) in the area. Chau identifies six key components of LID (3) :

- "Decentralize & manage urban runoff to integrate water management throughout the watershed.
- Preserve or restore the ecosystem's natural hydrological functions and cycles.
- Account for a site's topographic features in its design.
- Reduce impervious ground cover and building footprint.
- Maximize infiltration on-site.
- If infiltration is not possible, then capture water for filtration and/or reuse."

1. Wilshire Center Cool District Website. Retrieved from http://www.wilshirecenter.com/cooldistrict/ on 9 April 2010.
2. "What is 'watershed management'". Los Angeles County Department of Public Works Website. Retrieved from http://dpw.lacounty.gov/wmd/whatis.cfm on 13 April 2010.
3. Chau, Haan-Fawn (2009). Green Infrastructure for Los Angeles: Addressing Urban Runoff and Water Supply Through Low Impact Development, p. 7. Retrieved from http://www.lastormwater.org/siteorg/program/green.htm during April 2010.

The study area is situated towards the northeast corner of the Ballona Creek Watershed (see Figure 1) and is also affected by a number of existing plans including the 2007 WCBID Cool District Plan (4), the 2004 Los Angeles County Department of Public Works Ballona Creek Watershed Management Plan (BCWMP) (5), the Community Redevelopment Agency of the City of Los Angeles' (CRA/LA) Wilshire Center / Korea town 1995 Redevelopment (6) and 2006 Five Year Implementation Plans(7), and the City of Los Angeles' 2001 Wilshire Community Plan (8). The recommendations in this paper strive to harmonize with these planning documents to increase their relevance and practicality.

These recommendations are also designed to harmonize with the concept of sustainability. Most sustainability definitions "present a way of looking at environmental problems in relation to the economy and society" such that "the thing that distinguishes sustainability is looking at systemic interconnections, and the idea that the elements should support, or reinforce each other in a reciprocal relationship" with a particular focus on intergenerational equity (9).

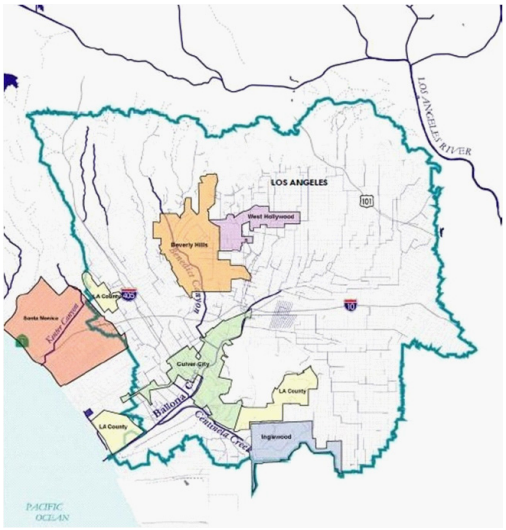


Figure 1 - The Ballona Creek Watershed. The WCBID is located towards the northeast corner of the watershed. Source: 2004 Ballona Creek Watershed Management Plan, available at http://dpw.lacounty.gov/wmd/watershed/bc/bcmp/docs/sept04/Executive%20Summary.pdf

4. Available at http://www.wilshirecenter.com/cooldistrict/index.html, accessed 13 April 2010
5. Available at http://dpw.lacounty.gov/wmd/watershed/bc/bcmp/masterplan.cfm, accessed 13 April 2010
6. Available at http://www.crala.net/internet-site/Projects/Wilshire_Center/upload/WilshireCenter.pdf, accessed 13 April 2010
7. Available at http://www.crala.net/internet-site/Projects/Wilshire_Center/upload/wk_5yearPlan-2.pdf accessed 13 April 2010
8. Available at http://cityplanning.lacity.org/complan/pdf/wilcptxt.pdf, accessed 13 April 2010
9. Vos, Robert O (2007). "Defining sustainability: a conceptual orientation". Journal of Chemical Technology and Biotechnology 82, page 335.

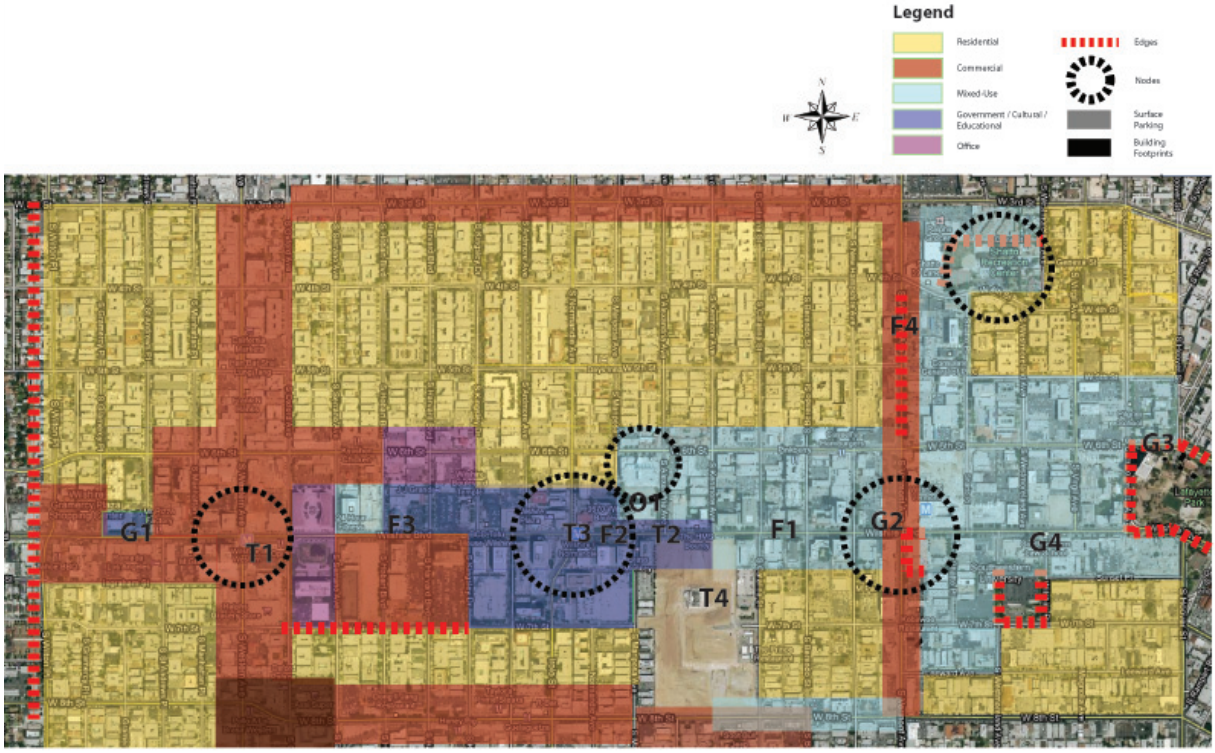
Existing Conditions

Wilshire Center is a diverse area of culture, entertainment, and residence. While it is commonly called Korea town, Wilshire Center is a diverse neighborhood including not just Koreans but also, such things as a neighborhood designated Little Bangladesh, and a majority Latino population. The area is a largely low-income community with 44% of households reporting an income of less than $20,000.

Districts and Landmarks

As shown in Figure 2, Wilshire Center can be subdivided into four districts separated by urban design and function.

Figure 2 – Paths, districts, nodes, & edges in the WCBID.



Landmarks

Tourism, culture and entertainment
T1 - Wiltern Theatre
T2 - Brown Derby Plaza
T3 - Wilshire Plaza Hotel
T4 - Ambassador Hotel

Faith
F1 - Immanuel Presbyterian Church
F2 - Wilshire Christian Church
F3 - Wilshire Boulevard Temple
F4 - Islamic Center of Southern California

Government and education
G1 - Costa Rican / El Salvadoran Consulates
G2 - South Korean / Sri Lankan Consulate
G3 - Los Angeles County Superior Courthouse
G4 - Southwestern Law School / Bullocks Wilshire Building

Office
O1 - Equitable Building

Wilshire Blvd

Wilshire Blvd serves as the major business and cultural hub of the district. As shown in Figure 2, office buildings including the offices of several American, Korean and international financial institutions predominate from Wilton to Western. Additionally, both United Teachers Los Angeles and the United Food Commercial Workers unions have headquarters in this stretch of Wilshire. In keeping with Wilshire Center's international appeal there are also several consulates in this area including the consulates of South Korea, El Salvador, and Costa Rica. From Hobart and Alexandria there are several cultural landmarks and uses, including religious institutions like the Wilshire Boulevard Temple, and the Wilshire Christian Church, and cultural icons like the Brown Derby Plaza and the Wilshire Plaza Hotel, which services international and domestic travelers to Los Angeles and serves as a center for the business community and the public for conferences and events. The stretch from Kenmore Ave. to Hoover Blvd. is more mixed in use but includes several consulates and entertainment venues that make Wilshire Center a hub of nightlife in Los Angeles.

Small Scale Commercial

Western, 3rd, and Vermont are largely auto dominated streets that feature small scale local retail with customers drawn from adjacent medium density apartment buildings. These streets feature businesses with large parking lots and free street parking along several stretches. 3rd St. also features one of the only parks in the area; the Shatto Recreation Center.

6th St., 7th St. & 8th St.

6th Street serves as an entertainment hub catering to tourists and locals with a substantial presence of bars, clubs, and restaurants. Both 6th and 7th are far more focused toward entertainment as opposed to Wilshire's diverse mix of business and cultural use, with popular bars and entertainment venues along these streets. 8th Street is much more residential and low density commercial with smaller scare commercial along the street from Western to Mariposa.

Nodes and Landmarks

Wilshire/Vermont, Wilshire/Normandie and Wilshire/Western, the locations of Purple Line subway stops are also nodes of activity in the Wilshire Center area. For example, Wilshire/Western contains the Wiltern Theater, an important Los Angeles cultural venue. The Wilshire/Vermont node is the location of an architecturally distinctive transit oriented development which holds cultural events including a farmers market, and also includes several consulates. Other nodes include the Shatto Recreation Center, located off 3rd St. in the northeast corner of Wilshire Center. Additionally, the Equitable Building is an iconic skyscraper located on Wilshire on a section of a street that is a hub for office and commercial space.

Edges

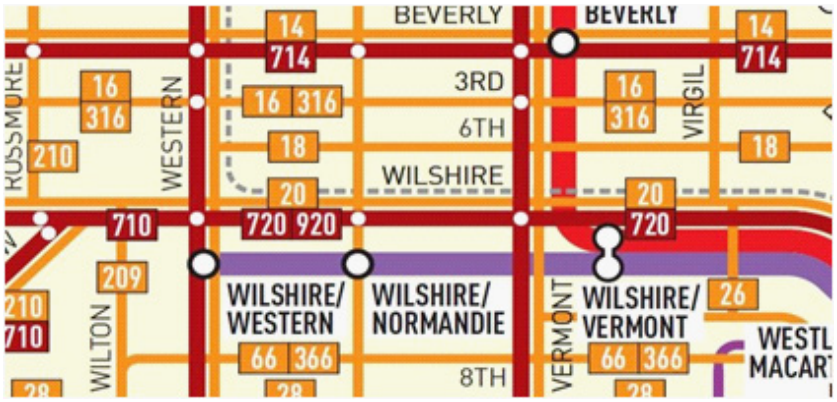
The Western edge of the Business Improvement District serves as the boundary between Hancock Park and Wilshire Center. The eastern edge clarifies the boundaries of the Arlington Neighborhood. Housing prices escalate dramatically West of Wilton Pl. Vermont Blvd also serves as a boundary. Its commercial corridors divide it physically from the largely residential neighborhoods west of the street. On Wilshire, the Wilshire/Vermont transit station separates office and mixed-use buildings from an area more dominated by Southwestern University School of Law. 7th St is also a barrier because the streetscape changes drastically south of 7th. By Shatto Park there is an edge that divides Shatto from a Ralph's supermarket parking lot.

Transportation

The area is very transit-accessible with three heavy rail subway stops on Wilshire (at Vermont, Normandie and Western). The area is also served by a DASH Circulator route and several Metro bus lines serving commuters and residents as shown in Figure 3 below. Service frequency is generally good throughout the area. Ranked as the second most fuel efficient neighborhood in the United States, Wilshire Center is also a highly walkable community ranked with a perfect Walk Score of 100 with grocery stores and other services in walking distance almost anywhere in the area (10).

Wilshire is a major arterial street that connects downtown Los Angeles to the ocean in Santa Monica. Oxford and Normandie, 3rd, 7th, 8th are all secondary pathways used to connect residents to arterials. A network of local streets connects to both arterials and secondary pathways in the neighborhood. The area currently contains no arterial streets with bike lanes, although 4th St., a minor residential street, has been designated as a "bike route".

Figure 3 – WCBID's transit lines. Source: http://www.metro.net/riding_metro/maps/images/System_Map.pdf



10. Walk Score is a website that rates an area in terms of proximity of nearby destinations. Places with a large range of destinations within a small radius receive the highest scores. Scores are available at http://www.walkscore.com/. Accessed March 2010.

Storm Drains

There is a significant amount of water waste in Wilshire Center. Rain tends to cause excess puddling of water at intersections and there is often trash in the streets that is swept into storm drains. Figure 5 below is the map of the flood plain, which runs along the area where Shatto Park is located as well as toward the western edge of the district.

Figure 4 – Street types in the WCBID. Source: NavigateLA.org, Five Guys Analysis

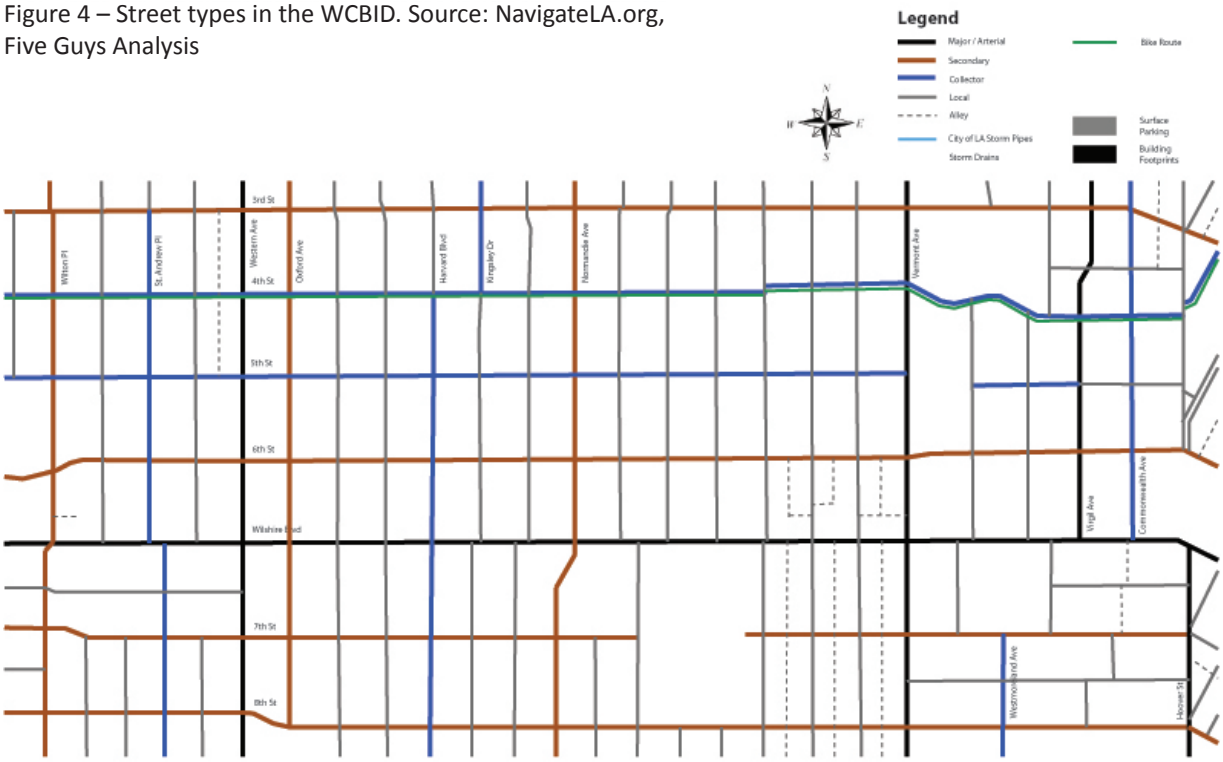
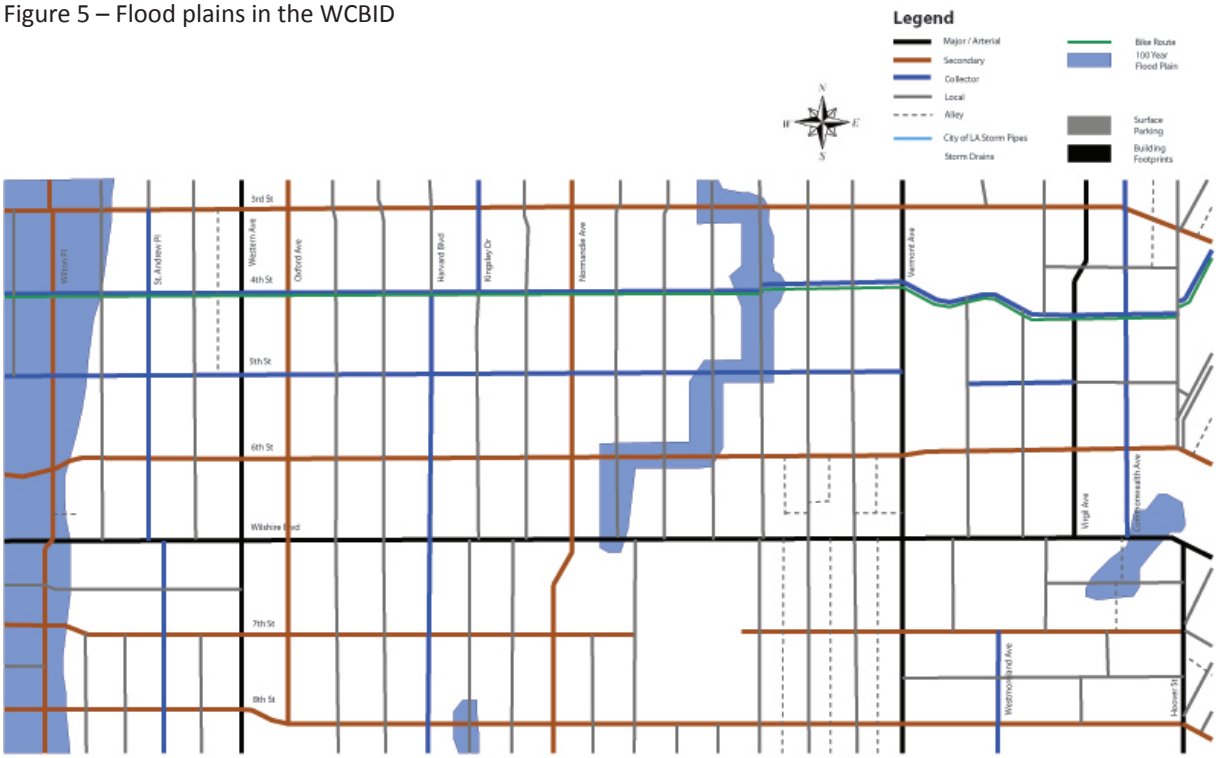


Figure 5 – Flood plains in the WCBID



Analysis

Projections

Development without a Unified Community Plan

The Wilshire Center BID is obviously a cultural core for businesses, residents and visitors and its expansion has made this area culturally unique with non-American-oriented businesses and residential areas. This mixed-culture background is a key driving force for its development by attracting both existing residents and newcomers such as immigrants and tourists. As shown in Table 1 below, this area is serving as a gateway to the world and a gateway to the United States. But in fact, this cultural complex is a weak point in this district for future development because of the lack of consensus for the future community plan. Without a consensus guiding future development, each cultural core which the WCBID contains will go forward in its own way and as a result, Wilshire Center could lose its unifying force as a single district. Consequently, the WCBID is facing a danger of fragmentation into small cultural core areas.

Table 1 - Examples of Wilshire Center's International Essence

• Restaurants
- American, Greek, Korean, FrenchCalifornia, Mexican, Japanese, Chinese, Philipine, Italian, Coffeshops, Microbrewery, etc...
• Hotels
- Wilshire Plaza Hotel, Ramada Inn, JJ Grand, Oxford Palace, Shelter Hotel, Best Western, Garden Suites Hotel and Resort, Mariposa Hotel
• Consulates
- Argentina, Brazil, Columbia, China, Costa Rica, El Salvador, Guatemala, Honduras, Indonesia, Korea, Mexico, Nicaragua, Philipines, Peru
• Tourism ministries
- Bahamas, Barbados, Cayman Islands, India, Jamaica, Taiwan, US Virgin Islands

Figure 6 - Looking east on 3rd St. Photo by Fang-zhou Zhou

Quality of life in the Wilshire Center BID

With respect to quality of life, the WCBID is a dense commercial and residential area which lacks sufficient natural open spaces. Storm water flooding, accumulated trash on roadways, poor scenery created by concrete buildings and infrastructure such as alleys, roads, and ground parking are also readily apparent problems. In these respects the quality of life in the WCBID needs improvement for the sake of the businesses, residents and visitors who interact with the area and those who might do so in the future if conditions were better.

Vibrant but Crowed Land Use

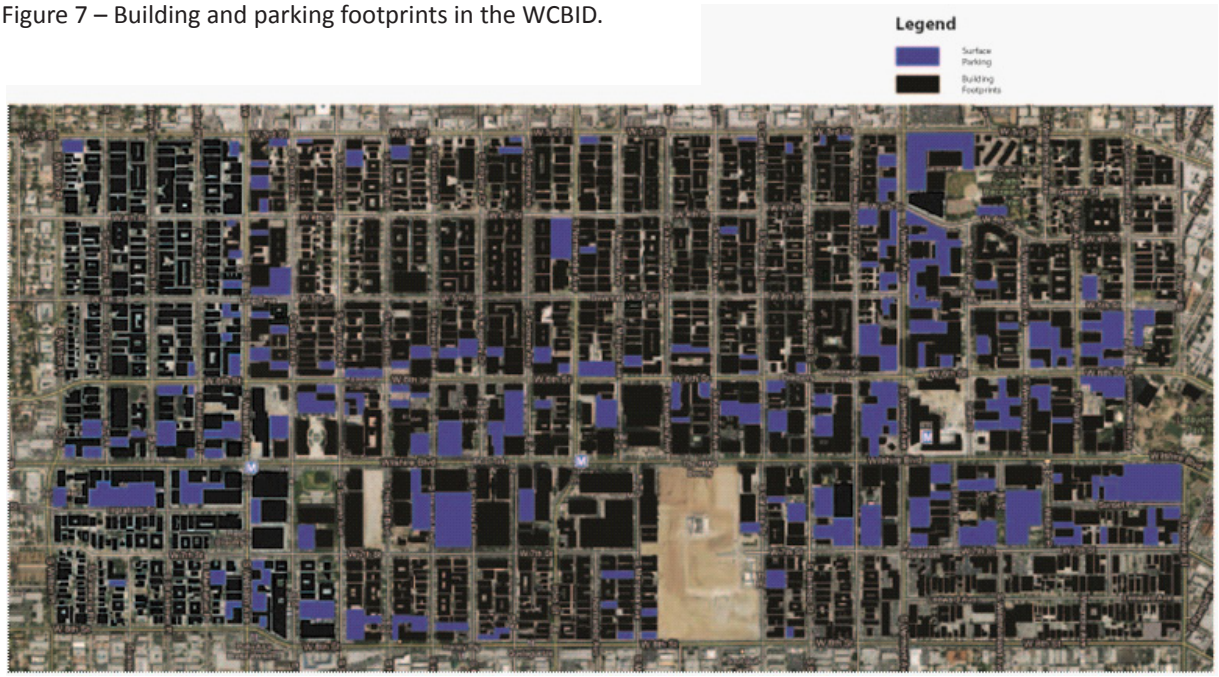
On the other hand, the WCBID is famous as "Korea town" and one of the busiest districts in Los Angeles. Census data show that the daytime population composes about 40% of total population in this area (the day time population is 47,968 and the residential population is 128,396). Hence this area is a vibrant destination for workers, visitors, and also for residents around areas, and the demand for business and residential land use is high. But as Figure 7 shows, the current density and unwise land use, which is another characteristic both for business (on big streets) and residential areas (on minor or narrow streets), makes the supply of open space for future development limited.

Also, it is obvious that there are several problems related to parking spaces.

As most vibrant cultural centers in the United States, the WCBID has a strong potential for future expansion, and continued attractiveness for not only culture-oriented businesses and their customers, but also current and coming residents, and a showcase of mixed-culture development. The lack of parking spaces at current price levels is a challenge for future development.

We forecast that the WCBID will continue to expand with culture-oriented development and transit oriented development with the Metro subway extension plan towards Santa Monica. The expansion of the WCBID will face constraints of providing enough spaces for their new businesses, residents, and visitors.

Figure 7 – Building and parking footprints in the WCBID.



Transportation Problems Within the District

The Wilshire Center BID has been well connected with Downtown and other major destinations such as Hollywood, Westwood and South Los Angeles by both of buses and subways. Therefore in terms of inter-city transportation, the Wilshire Center BID has strength as a transportation hub and the opportunity to be a stronger destination. This district, which is 1.8 miles from east to west and 1.0 miles from south to north, is more or less manageable at a pedestrian scale but has poor pedestrian and bicycle infrastructure even though there are many pedestrians in this area taking advantage of the high proximity to destinations. For example, sidewalks on many streets are narrow and in poor condition, and no serious attempt has been made to accommodate cyclists on major streets. Therefore, the size of the district is ideal for non-driving oriented development but in fact, the failure to better promote alternative transportation methods has increased demand of parking spaces which exacerbate the lack of open space and prevent the district from addressing environment problems such as excessive impervious surfaces, and pollution caused by cars and their parking lots.

Problems

Lack of a Planning Theme to Guide Development

The WCBID is working to make this area more vibrant to attract businesses, residents and visitors with some degree of success. But as a transpirations hub, bustling commercial and residential area, and mixed-culture district, the district still lacks a planning theme in this environ-

mentally-conscious era, particularly with regard to watershed issues. Therefore, it is difficult to discern how the district can address its problems while consolidating its strengths.

Lack of Access to the Natural Environment

Wilshire Center plays a special role in Los Angeles as a one of its original historical districts. However, intense urbanization has made this area a concrete jungle with a lack of access to the natural environment and a lack of on-site mitigation of pollution, runoff/flooding and the heat island effect. There are only two parks in this district which are not easily accessible for most of residents due to the distance from their homes. Therefore, this district has a reduced ability to mitigate its environmental problems.

Non-Strategic Urban Land Use

It can hardly be said that the land use pattern in the WCBID is ideal from a watershed perspective because the demand for open space is high but the supply of open space is limited by the land use pattern, particularly surface parking lots. Surface parking lots are scattered throughout the district and they are limiting open spaces for both businesses and residents and attracting motorists who are increasing the burden on the environment.

Lack of Opportunities for Non-Automobile Oriented Transportation

In the Wilshire Center Cool District Plan, there are several bike lanes planned. But the plans suffer from a lack of connectivity to destinations and a lack of bicycle parking. This mismatch makes bike lanes less convenient for cyclists than they should be. Also, sidewalks are often poorly maintained, having suffered damage from tree roots, creating a sub-optimal pedestrian environment. These problems decrease the advantages of non-automobile transportation in the area at a time when our understanding of our environmental challenges suggests that we must reduce vehicle use. There is a huge opportunity for non-automobile transportation in the area; but the WCBID has not yet done everything possible to capitalize on its existing strengths.

Alternatives

Alternative 1- Status Quo Strategy

One alternative is a status quo strategy. With this strategy, the BID does not do anything beyond the Cool District planning efforts it has already undertaken and the current development pattern remains largely unchanged.

The advantage of this strategy is that involves no additional expenses, other than the costs incurred by letting problems fester. However, the disadvantage of this strategy is that it completely fails to address a number of important sustainability issues in the district, especially with regard to watershed management.

Alternative 2- Urban Oases Strategy

Another alternative strategy is the Urban Oases strategy which aims to make the WCBID a more sustainable community with a focus on environmental problems such as storm water management as well as social equity and economic issues. Considering the current economic situation, it makes a range of practical, targeted and noticeable interventions which have relatively high impact and relatively low cost.

The advantage of this strategy is that it practically and effectively pursues a variety of sustainability goals while providing a solid design concept for WCBID's future development: urban oases. The disadvantages of this strategy are its comparatively high cost relative to the status quo, the need to pursue a variety of funding sources and the need to coordinate work with a variety of public and private sector partners.

Alternative 3 - More Investment Strategy

The "more investment strategy" is the most ambitious strategy to create more suitable neighborhood in this district. Under this strategy, our development theme of urban oases is the same as in Alternative 2, but with more ambitious recommendations such as full storm pipe daylighting for optimum watershed health, creating many more parks while maintaining density to expand access to open space, and making substantial roadway modifications to shape future transportation patterns in a more environmentally-friendly direction.

The advantage of this strategy is that it produces the largest watershed and other environmental and social equity benefits and would be a notable example of sustainable urban community building in the United States, particularly given that this district contains many typical urban problems. The disadvantages of this strategy are its high costs and questionable feasibility. It would be necessary to fight heroically to secure the necessary funding sources in this economic situation. Also, this strategy entails dramatic land use, infrastructure and lifestyle changes, including displacement of hundreds of people, for the WCBID community which would pose grave political difficulties, at least in the short run.

Alternative 4 - Human Resource Strategy

This is a "soft power" strategy which involves collaboration with neighbors to solve several district sustainability problems through mechanisms such as public-private partnerships. This strategy features a community education program which empowers residents to reduce their environmental impact through enhanced knowledge. The strategy also features energy audits, zoning reform, and incentive programs to do things such as install low-flow water fixtures and solar panels.

The advantage of this strategy is its low cost and emphasis on direct community involvement. The disadvantage of this strategy is that it does not make any significant land use changes and is unlikely to produce dramatic results, particularly in the short run.

Opportunities
To address the district's current problems, there are several opportunities which can be applied to the alternatives just described.

Opportunities for storm water and the natural environment:
- Introducing rooftop gardens
- Using xeriscaping
- Promoting urban farming
- Creating green alleys
- Planting street trees
- Daylighting storm pipes
- Introducing detention ponds
- Replacing impermeable pavement with permeable pavement
- Introducing bio-swales

Opportunities for transportation
- Introducing a bike boulevard
- Introducing shared lane bicycle markings ("sharrows")
- Introducing "bike corrals"
- Introducing traffic calming techniques

Opportunities for parking
- Removing zoning requirements for off-street parking
- Charging fair market prices for curb parking
- Consolidating ground parking lots
- Replacing impermeable pavement with permeable pavement

Opportunities for community environment
- Encouraging recycling of food waste
- Introducing recycle and trash bins on the street
- Expanding recycling in residential and commercial buildings

Opportunities for open space

- Consolidating parking into structures to open up land for new parks
- Integration of community gardens into existing and future parks
- Zoning for more courtyards and appropriate setbacks

The list of opportunities is consistent with the idea of making the district a sustainable community. What is needed is to change the direction of development and change the direction of the community's future. Therefore, Alternative 3 is the most ambitious strategy and has the potential to change the community drastically but it is probably too expensive, and too politically difficult to implement at this time.

On the other hand, Alternatives 1 and 4 are not enough to address the current problems as they aim only to address few of opportunities. Although their feasibility is high and cost of implementation low, they are not sufficiently ambitious to merit serious consideration.

Therefore, the most suitable strategy is Alternative 2, the Urban Oases strategy. This strategy can include almost all identified opportunities with low cost and high feasibility as shown on Table 2 This strategy embraces low impact development for storm water management and addresses a number of other global and local environmental problems and can make the district a notable example of watershed best management practices and sustainable community across the country, with room for continued improvement as additional funding becomes available and citizen attitudes and behaviors start to change.

Table 2 - Comparison of 4 Alternatives

	Future Community Plan	Natural Environment	Urban Land use	Transportation	Feasibility	Cost	Conflict With Community
Alternative 1-Let It Be Strategy	No	Low	Low	Low	High	Low	Low
Alternative 2-Urban Oases Strategy	Yes	High	High	High	High	Low	Medium
Alternative 3-More Investment Strategy	Yes	Low	Medium	High	Low	High	High
Alternative 4-Human Resource Strategy	Yes	Low	Low	Low	High	Low	Low

Recommendations

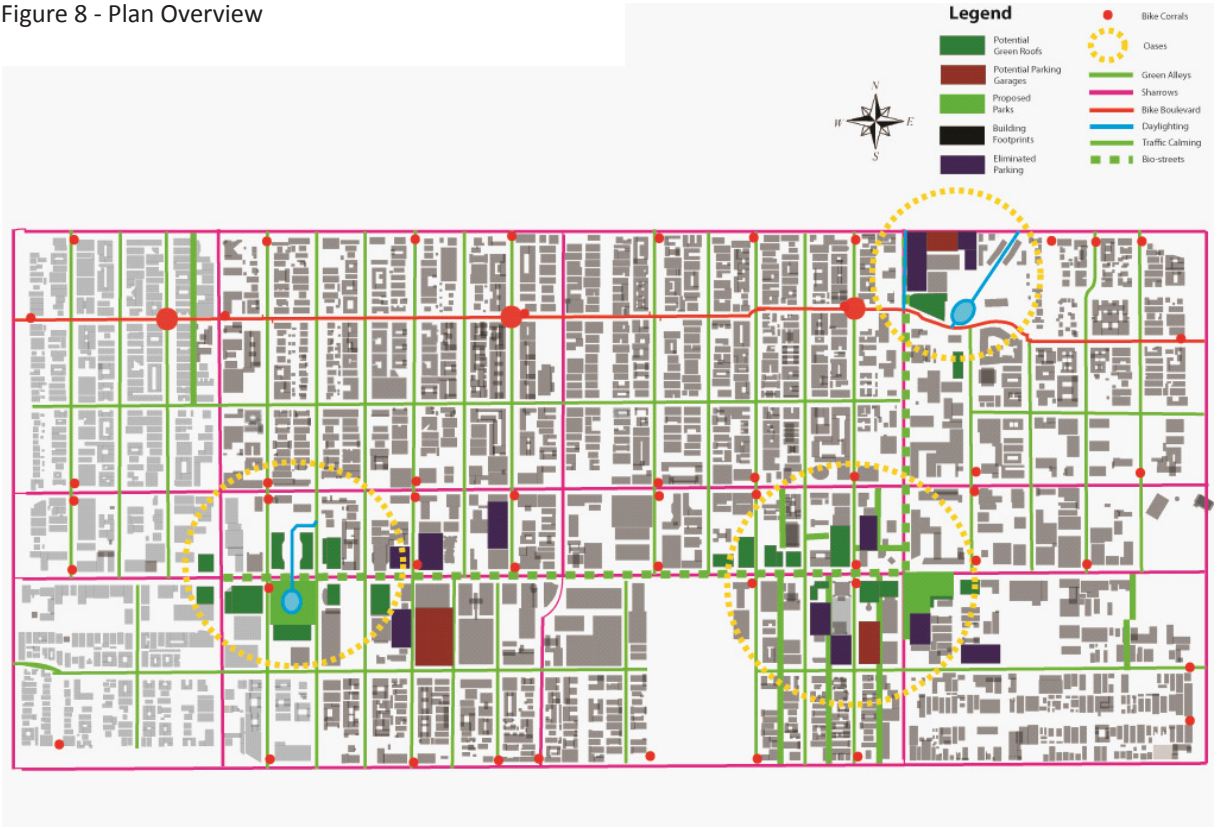
Design Recommendations

Daylighting

Daylighting has significant environmental benefits including the potential to extend the capacity of existing storm sewer systems, allow groundwater inflitration, revitalize neighborhoods and connect residents to the natural environment. Costs for daylighting vary depending on the size of the project (11). We propose to daylight streams at Shatto Park in the north-east corner of the district (Oasis #1) and at the Chase Pacific Building located at Oxford and Serrano (Oasis #3). Using the Green Values Stormwater Toolbox online application, we find that these interventions will save prevent 2470 feet of runoff (12) and have the following benefits:

- Better connect Wilshire Center to its natural context
- Significantly Save Stormwater
- Provide a natural amenity in an area that is park poor

Figure 8 - Plan Overview



11. Bucholz, Virginia Water Resource Center, (2009) found average cost of daylighting projects across localities depended on the size of the project. Projects of 1000 feet cost an average of $110,000, while projects of greater than 1500 square feet cost between 1.5-1.8 million dollars. These costs are used as a baseline to estimate the costs of daylighting in Los Angeles. Accessible at <http://www.vwrrc.vt.edu/pdfs/specialreports/sr352007.pdf>

12. Green Values National Stormwater Management Calculator. Accessible at <http://greenvalues.cnt.org>

Oasis #1 – Shatto Park Daylighting and Parking

Using space freed up by the creation of parking improvements, Shatto Park will be expanded and 3300 feet of streams will be daylighted in the area. Furthermore, a water amenity will be created at the site while preserving the most popular parts of the current park. The tennis courts will be moved to the space where parking is located currently in order to create room for the water feature. As in all our improvements native plants will be used to minimize water use while providing natural beauty. These improvements will save 1364 feet of runoff.

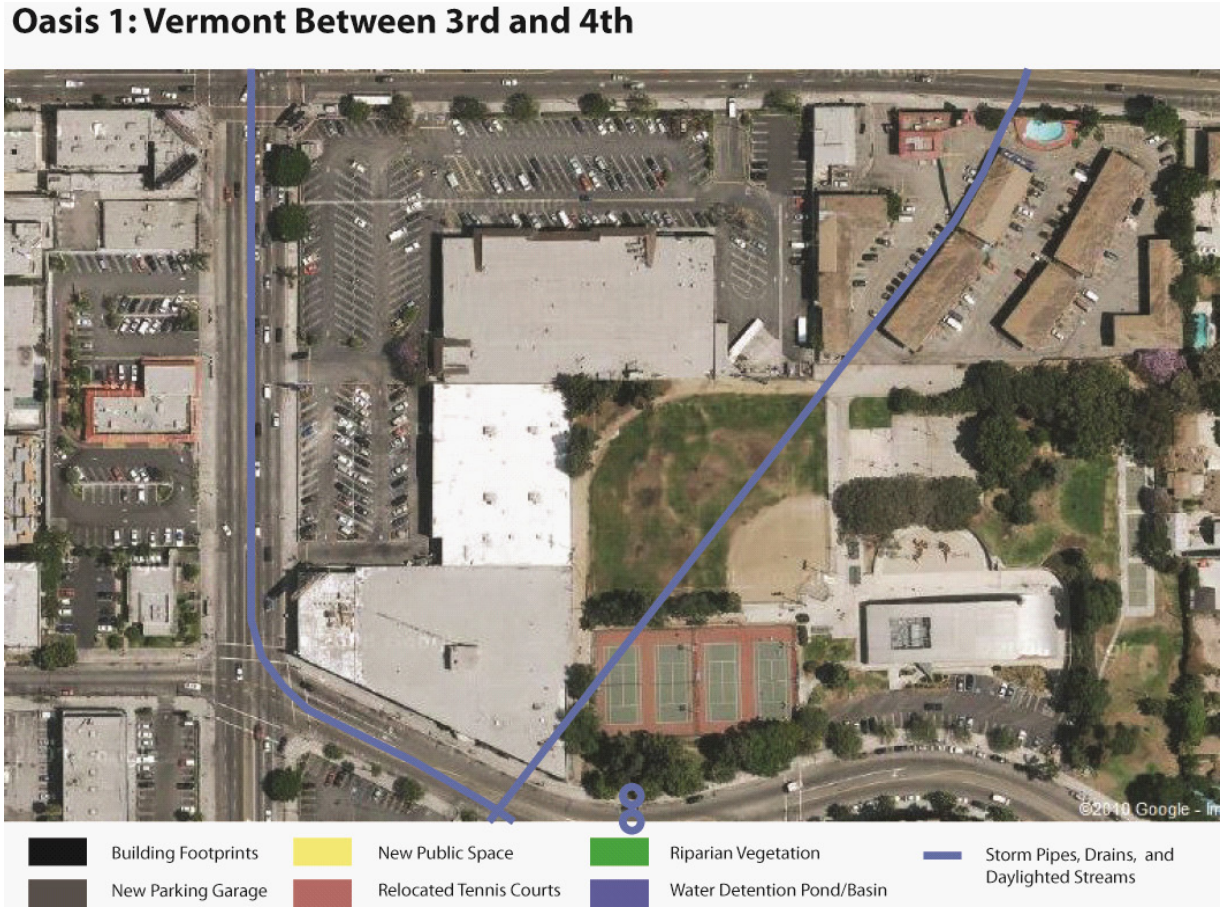


Figure 9 - Oasis 1 before

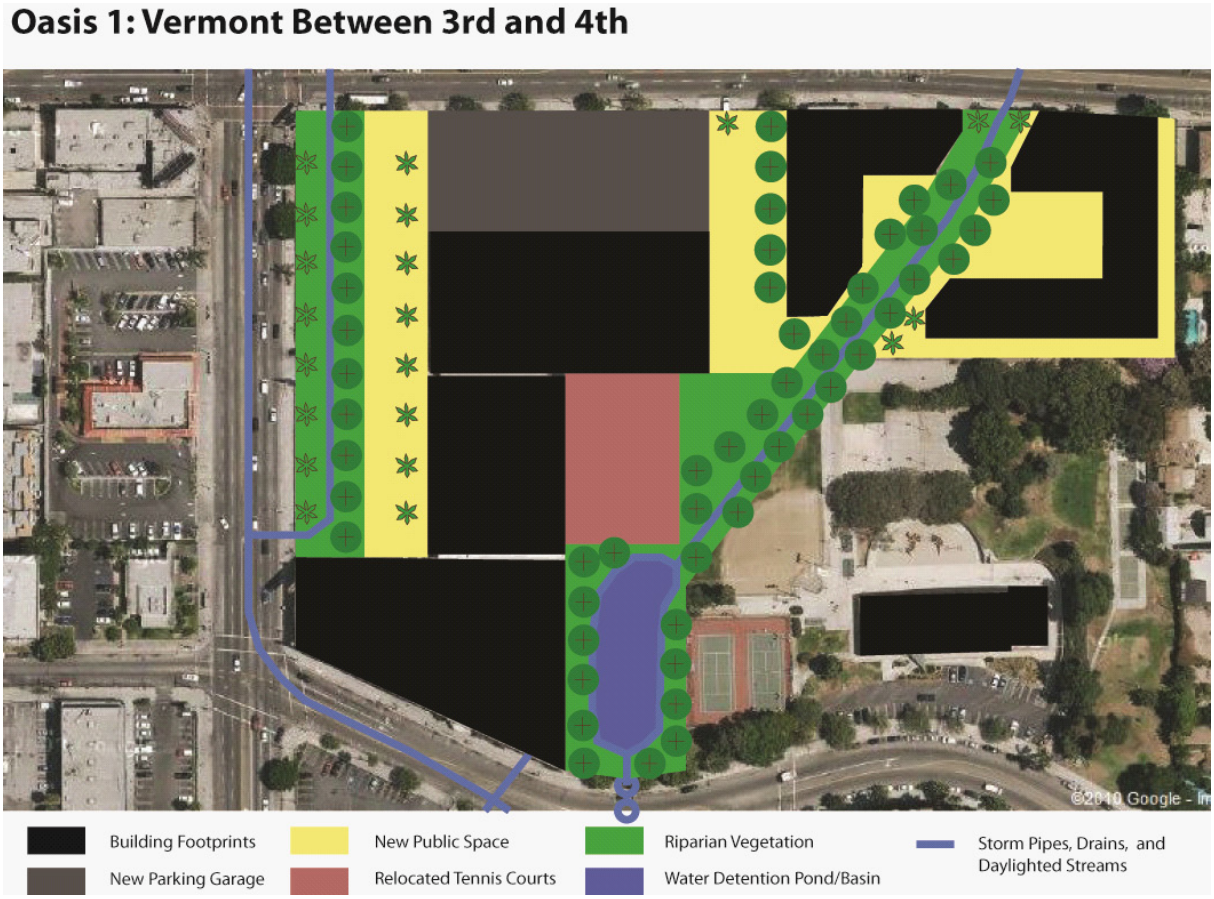


Figure 10 - Oasis 1 recommendations

Oasis #2 - Southeast Corner of Wilshire/Vermont Mixed Use Project

The property on the southeast corner of Wilshire/Vermont is currently a vacant eyesore in an increasingly attractive neighborhood. The property is across the street from the Wilshire/Vermont subway station and transit oriented development, and a mixed-use commerical and residential center would fit well in the social context of the area. While a vertical mall was previously proposed for the site, plans fell through despite support from the Community Redevelopment Agency and local elected officals after it was unclear the developer could come up with necessary financing for the plan.

Furthermore, developing a park on the site could create significant community benefits. Providing an urban garden function could work well with the adjacent farmer's market and save carbon emissions by growing produce on site for sale across the street rather than bringing in produce trucked in from Central California. Native species like deciduous trees will be planted at the site in order to conserve water. Developing a mixed-use housing development and park on the site will have the following benefits:

- Create an amenity in a park-poor, dense urban area
- Connect residents to the natural environment
- Create additional venues for housing and entertainment that fit well into the social context of the neighborhood

Figure 11 - Oasis 2 before and after recommendations

Oasis #3 – Wilshire Between Oxford and Serrano

Oasis #3 will daylight 680 feet of storm drains at the Chase Pacific Bank site. Taking advantage of its current fountain and creating an updated water feature, this relatively low cost project will upgrade the natural amenity in the area and improve a popular public space. This will save 1120 square feet of storm water per year.

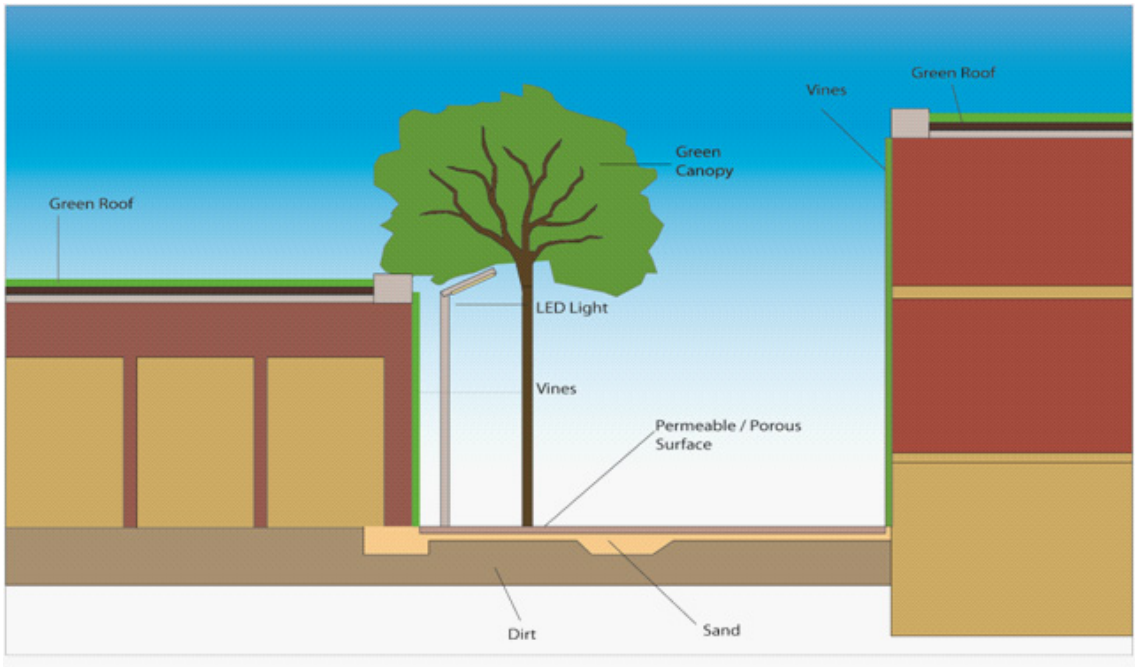
Figure 12 - Oasis 3 before and after recommendations

Green Alleyways

In Los Angeles, there are over 900 miles of alleys and 12,000 alley segments that are dispersed through the city. The alley network is roughly half the size of Griffith Park (4,100 acres) which is the largest municipal park in the nation. Alleys are often considered a nuisance, and are often underutilized in terms of foot traffic, and bicycle ridership. However, alleyways can become an asset if the space is utilized as "green alleyways" (see Figure 13) which offer the following benefits:

- Improved water quality in streams, rivers, and coastal waters through using permeable pavement which will reduce water runoff and recharge groundwater.
- Encouraging walkability and connectivity by drawing people to existing paths. Green alleyways will encourage people to walk and to bicycle rather than driving when making trips to stores, parks, and other destinations.
- Providing additional recreational spaces by transforming alleys into walkable, bikeable, and playable spaces which could supplement scarce park resources in Wilshire Center.
- Reducing crime by improving lighting and making alleyways attractive for people to use.

Figure 13 – Green alley design concept



Xeriscaped Roofs

Throughout Los Angeles, and especially in Wilshire Center, there are countless buildings with roofs that are not being utilized to their full potential. Xeriscaped roofs (See Figure 14) are vegetated roof covers using native and draught resistant plants constructed atop a roof of a building in contrast to hot, barren roofs. The great potential of xeriscaped roofs is to provide a healthy, sustainable roof landscape that can help protect our environment. Xeriscaped roofs can offer following benefits:

- Strom water management by reducing storm water volume and slowing down water flow thereby alleviating pressure on storm sewers and receiving water bodies.
- Water quality improvement through filtering and cooling water runoff, and preventing nitrogen, phosphorous, and other harmful elements from entering streams and waterways.
- Heat mitigation by reducing heat island effect. Urban rooftops can often reach 150 to 170 degrees during summer, and asphalt and concrete re-radiate the heat back into the Earth's atmosphere which raises the temperature in the urban areas, including after sunset, increasing runoff temperature and energy use for air conditioning.
- Air quality improvement through filtering dust particles and toxic pollutants. Smog, carbon dioxide, and other pollutants are absorbed by the vegetated roofs, thereby naturally cleaning the air
- Wildlife habitat creation by providing spaces for birds and insects.

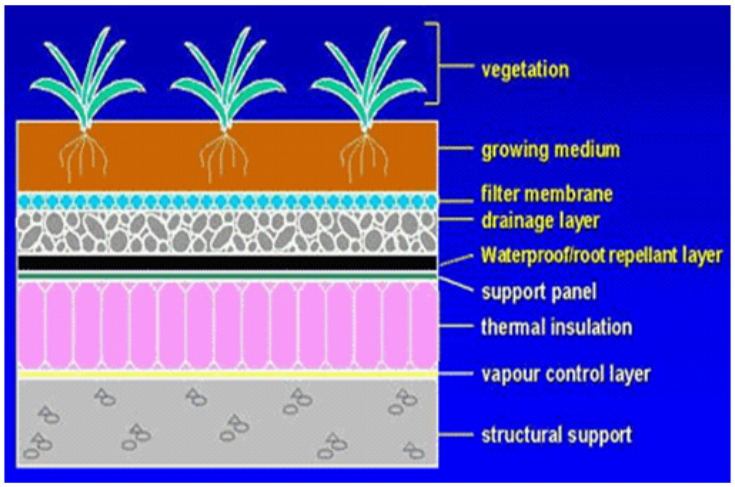


Figure 14 - Components of a xeriscaped roof

Parking Garage

Wilshire Center is an area of dense commercial, residential and cultural cores. However, poor land use, especially for surface parking lots, exacerbates the lack of land for open space and future development in this area since little land is available for projects that would make Wilshire Center a more sustainable and vibrant place. The opportunity of multi-level parking garages is to free up new land in this congested area by consolidating the existing surface parking and then converting surface parking lots to other uses, which will either be better for the watershed, more profitable, or both. Benefits of this approach include:

- Decreasing water runoff from parking lots by consolidating them in a single parking garage and creating profitable open spaces in the midst of Wilshire Center where we are facing a lack of open spaces.
- Increasing pedestrian activity by creating new destinations and reducing wasted urban space which extends walking distances. It would also bring business opportunity to nearby retail stores and restaurants and would make area more vibrant.
- When motorists directly pay the cost of their parking they have an incentive to think about the burdens their driving places on the environment, which encourages them to use other modes of transportation.

Figure 15 - Parking Structure.

Permeable Pavement

In the WCBID, there is abundant surface parking for businesses and residents. However, especially during the winter rainy season, water runoff from these spaces has become a source of pollutants such as oil, litter, dust, and fine particles that collect on road surfaces. Furthermore, the asphalt pavement has been contributing to the heat island effect. This kind of legacy material is increasingly seen as one we should replace with more environment friendly materials. Permeable pavement is an alternative to conventional asphalt and can absorb surface water and reduce runoff. Also, permeable pavement with grass has less ability to absorb and hold the heat from sunlight than asphalt, thus mitigating the heat island effect. Benefits of permeable pavement include:

- Increasing on-site water absorption and decreasing runoff.
- Heat mitigation by reducing the heat island effect. Asphalt and concrete reradiate absorbed heat back into the atmosphere raising the temperature in the urban areas.
- Good aesthetic contrast to concrete buildings through green surfaces, creating a pleasant and appropriate appearance, especially near parks.
- Comparably low cost and high effect, making implementation easier.

Figure 16 - Permeable pavement

Connectivity

The Urban Oases watershed plan has a transportation/connectivity element designed to physically link our oases into a coherent whole, promote the use of modes of transportation that do less damage to the watershed than driving, and to reduce the need for motor vehicle parking, thus freeing up land for more watershed-friendly uses. The recommendations are focused on improving the quality of the pedestrian and cycling experience in the WCBID since the area is already home to some of the best transit in Los Angeles County both in terms of service frequency and variety (e.g. the subway lines, standard and limited-stop buses) and because a major subway expansion to the west of the area is already planned. The connectivity recommendations have five components: the Wilshire/Vermont "Bio-Street", sharrows, traffic calming, a segment of the 4th St. Bike Boulevard, and bike corrals.

Figure 17 - Sidewalk Swale for the Bio Street. Source: Media Project Online, available at http://mediaprojectonline.org/heavyweather/heavyweather-Images/swale002.jpg

The Wilshire/Vermont Bio-Street links our three oases and enhances the sense of place in the WCBID by creating a sidewalk environment that is more hospitable to pedestrians and the watershed. This is accomplished by sidewalk repair where necessary and the installation of "sidewalk swales". These swales will feature curb cuts that allow street runoff to enter the

vegetated area, where native, drought tolerant plants will filter it and allow it to permeate into the groundwater, with an elevated drain provided for backup in case of heavy flow. See Figure 12 for an illustration of sidewalk swales.

Sharrows

In-street shared lane bicycle markings or "sharrows" are an inexpensive and politically palatable way to encourage cycling and promote bicycle safety, especially on major streets where such improvements are most difficult and most needed. The markings, pictured in Figure 18 indicate the safe direction of travel, with the flow of traffic, and also position cyclists to the left of the "door zone", the area of the street which becomes impassable when the driver's side door of a parked car is opened. In addition to these safety benefits, the markings are a noticeable symbol that bicycles belong in the street and can help reassure those cyclists who may be unaware of their rights to the street or who feel intimidated riding in the street. Sharrows are not a substitute for more meaningful efforts such as the creation of bike lanes and traffic calming road design, but they are easier to implement on arterial streets, where politicians feel pressure not to give up any road space from motorists agitated about traffic.

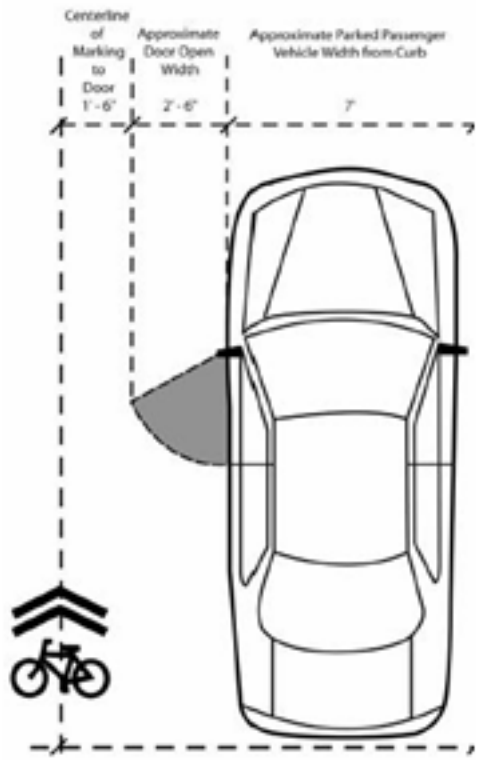


Figure 18 – Sharrow Diagram. Source: Cleveland Planning Commission Website, available at http://planning.city.cleveland.oh.us/bike/sharrow.html

Traffic Calming

Traffic calming enhances the pedestrian and bicycle experience by slowing down vehicle traffic and enhancing safety for the most vulnerable road users. We recommend the installation of speed bumps at the mid-block segments of the area's residential/"minor" streets as well as the installation of curb bump outs at the intersections involving a residential street. See Figure 19 for an illustration of bump outs. Bump outs calm traffic by narrowing the passable area at intersections and reassure pedestrians by reducing the distance they have to walk in the actual roadway.

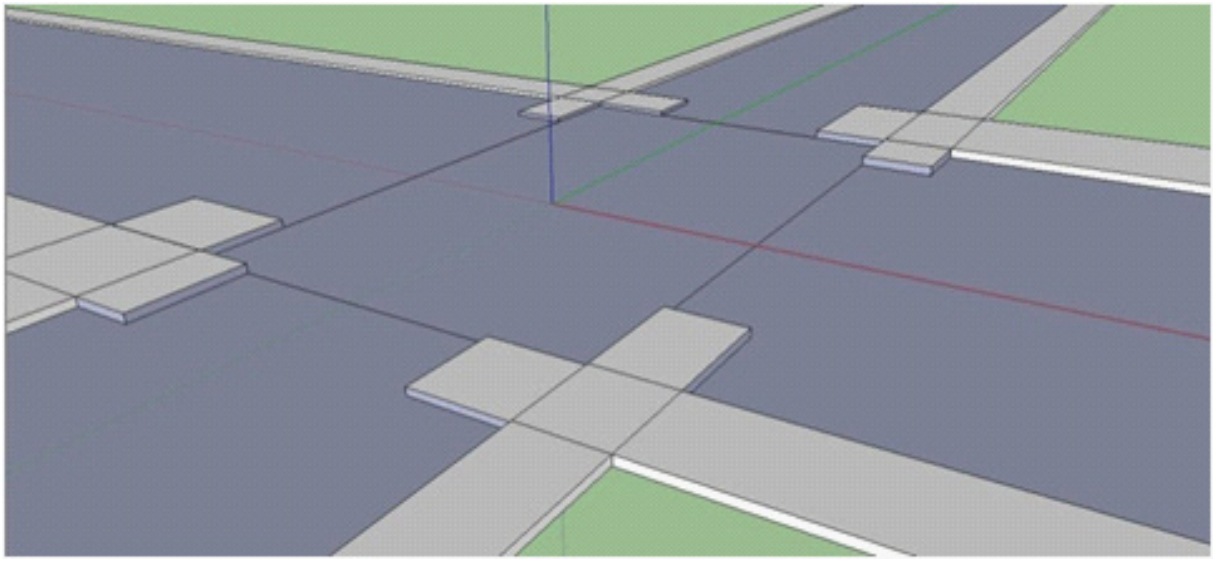


Figure 19 - Traffic Calming: Bump Outs

4th Street Bike Boulevard

4th Street is a mainly residential street that cuts east-west through the WCBID and continues on 1.9 miles west of Wilton (terminating just west of LaBrea, where it is interrupted), making it a street which has relatively low levels of traffic that move at slow speed that connects to some extent with other city neighborhoods. Our plan improves cycling and pedestrian conditions on 4th street by optimizing it for bicycles instead of cars. This is accomplished by the placement of traffic circles (with vegetation and permeable sidewalk) at three intersections and by the placement of bollards at two other intersections. The circles calm traffic by causing motorists to slow down as they approach. The bollards allow bicycles to go through east or west on 4th but require cars to turn onto another street, thus maintaining, but making more difficult, ve-

hicle access and reducing threats to cyclists on 4th. See Figure 20 for an illustration of how an intersection with bollards would work. Reducing motor vehicle traffic on 4th Street opens up the possibility of repaving it with permeable pavement, which should be studied once traffic counts on the bike boulevard become available.

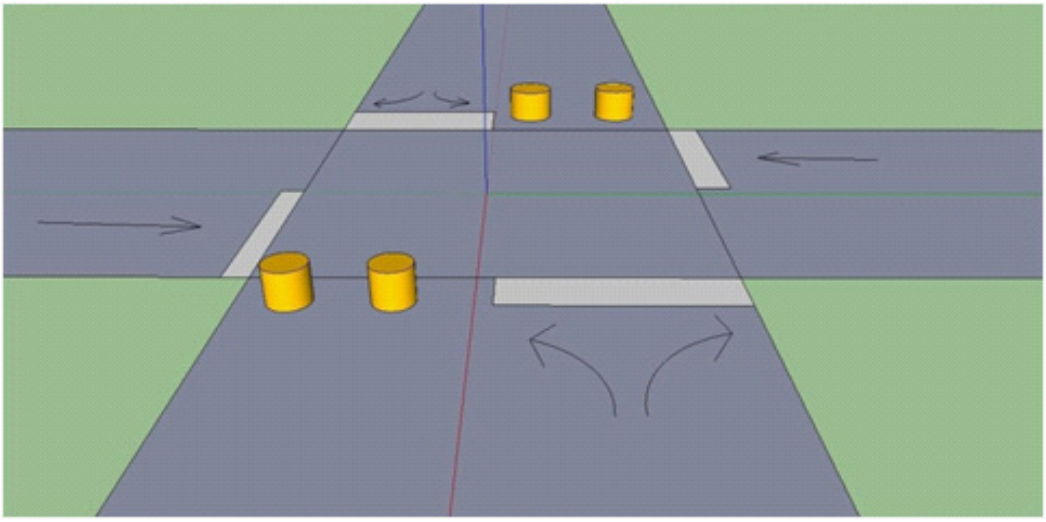
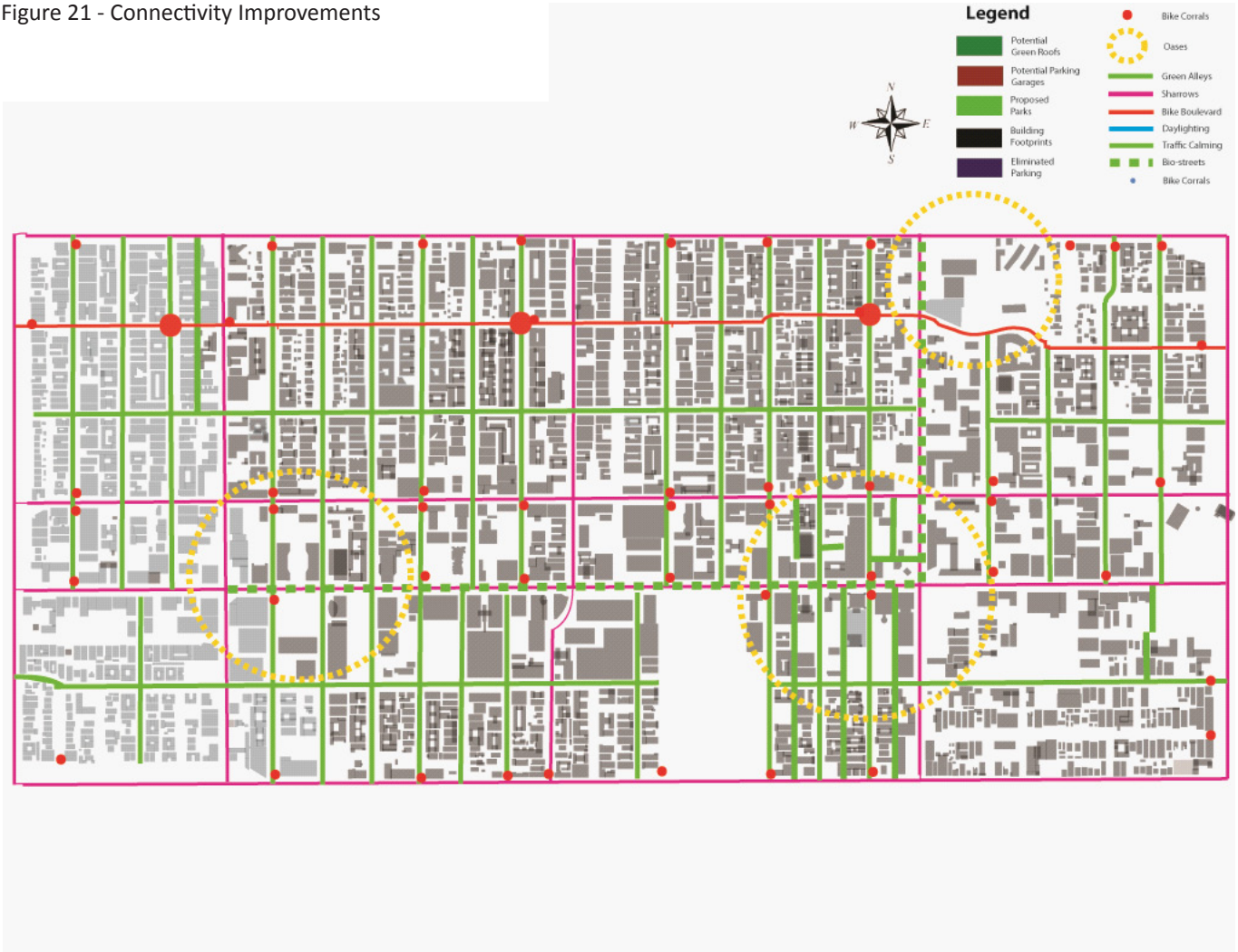


Figure 20 - 4th St. Bike Boulevard: Intersection with Bollards (looking west or east)

Figure 21 - Connectivity Improvements



Bike Corrals

Bike corrals are a way of providing on-street bicycle parking. See Figure 22 for an illustration. By replacing on-street motor vehicle parking with bicycle racks marked off with highly-visible reflectors, about ten bicycles can safely be stored in an area that formerly only accommodated a single car. Increasing bicycle parking facilitates cycling by allowing cyclists to safeguard their property upon reaching their destination. Additionally, by putting bicycle parking in the street, conflicts with pedestrians are reduced, particularly on arterial streets such as 3rd and 6th which carry a good deal of pedestrian traffic and have very narrow sidewalks.

Figure 22 - A Bike Corral. Source: City Pages Blogs, available at http://blogs.citypages.com/blotter/2008/12/minneapolis_off.php

Financial Recommendations

In order to create green oases and pay for a variety of improvements, funding is critically important. With state and local governments in fiscal crisis, smart utilization of bond funds and local revenue is crucial to successful funding proposals. Financial support from the community and local business owners can also be leveraged to win additional public funding for our improvements. This section details relevant funding opportunities at multiple levels of government.

Federal Funding

New Markets Tax Credits

New Markets Tax Credits are tax credits at the disposal of Community Redevelopment Agencies that can be used to offset the cost of redevelopment. To incentivize developers at the Wilshire/Vermont site (Oasis #2) it will be important for CRA to utilize this source of assistance to find a developer willing to allow parts of the vacant property at Wilshire/Vermont to be used for a new park.

Community Development Block Grants

The City of Los Angeles receives $70 million dollars annually in Community Development Block Grants that can be broadly used for activities that provide for "decent housing and a suitable living environment, and by expanding economic activities especially for low and moderate income persons." (13)

CDBG funds may be used for activities which include, but are not limited to:

- acquisition of real property;
- relocation and demolition;
- rehabilitation of residential and non-residential structures;
- construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes;
- public services, within certain limits;
- activities relating to energy conservation and renewable energy resources; and
- provision of assistance to profit-motivated businesses to carry out economic development and job creation/retention activities.

For the purposes of the Urban Oases plan, CDBG funds can be used to aid in construction of the public park planned for Wilshire/Vermont (Oasis #2) as well as potentially be used for the cost of construction of low income housing units provided as part of the development.

State Funding

Proposition 50 - River Parkways Grants

The Proposition 50 California River Parkways Grant Program in the Resources Agency is a competitive grant program for river parkways projects. Eligible projects must provide public access or be a component of a larger parkway plan that provides public access. In addition, projects must meet two of the following conditions:

- Provide compatible recreational opportunities including trails for strolling, hiking, bicycling, and equestrian uses along rivers and streams.
- Protect, improve, or restore riverine or riparian habitat, including benefits to wildlife habitat and water quality.
- Maintain or restore the open-space character of lands along rivers and streams so that they are compatible with periodic flooding as part of a flood management plan or project.
- Convert existing developed riverfront land into uses consistent with river parkways.

13. U.S Department of Housing and Human Development; Accessible at http://www.hud.gov/offices/cpd/communitydevelopment/programs/entitlement/index.cfm#nature

- Provide facilities to support or interpret river or stream restoration or other conservation activities.

Projects of the Urban Oases Plan allow public access and promote visibility of urban streams. Project plans will likely be funded under the criterion of restoring the open space character of land and supporting stream restoration.

Proposition 84 State Parks Program

Proposition 84 will allocate $368 million over two rounds of funding to the creation and upgrade of parks. Money from the bond can be used for the acquisition of land as well as the construction of park facilities. Grants start at a minimum of $100,000 and projects can receive as much as $5 million. Projects will be selected based on the following criteria:
Critical lack of park space; Park-poor communities; defined as communities with the lowest ratio of usable park space per 1000 residents; will receive high priority

- Significant poverty
- Technical assistance: New parks receive more points on the Prop 84 scale than upgrading existing parks.
- Community Based Planning: Incentivizes the use of local non-government organizations to work more closely with planners.

Projects proposed for the WCBID are likely to rank high on the Proposition 84 list of criteria. The Wilshire Center Area has a critical lack of park space and significant poverty as well as a collaborative planning process where the community through the Business Improvement District and other community organizations is driving the planning process.
The next round of funding for the parks program is likely to occur no sooner than March 2011.

Proposition 84 Urban Greening Funds

Proposition 84 authorized the Legislature to appropriate $70 million dollars for urban greening projects that reduce energy consumption, conserve water, improve air and water quality and provide other community benefits. These funds are likely to be allocated in three rounds with up to two million dollars in targeted funding for projects serving disadvantaged communities. Maximum funding provided per project is up to $1 million with most projects approved likely

to receive in the low $100,000s. Projects will be selected based on a points system where the State will rate applications based on the following criteria:

- Adherence to Statutory Requirements: 0-30 points
  - Project uses Natural Systems, Mimics Natural Systems or Expands Green Spaces
  - Project provides Multiple Benefits
- Urban Greening Statutory Priorities: 0-25 points
  - Interagency Cooperation and Integration/Collaboration (13 points)
  - Use Existing Public Lands and Resources (up to 5)
  - Disadvantaged Community (automatic 4 points)
  - Severely Disadvantaged Community (up to 7 points)
- Urban Greening Additional Priorities and Public Access: : 0-25
  - Improves Public Health
  - Is Innovative or Creative
  - Addresses Environmental Justice Issue
  - Creates Public Access
- Project Readiness: 0-10
- Organizational Readiness: 0-10

Located in a low-income community, daylighting and other storm water management improvements are likely to be rated highly by these criteria.

Local Funding

Proposition O

Proposition O is a $500 million City of Los Angeles bond measure passed in 2004 that provides funding for projects that improve water quality, promote flood protection, water conservation, habitat protection and open space. The bond will also allow the City to purchase or improve municipal property for projects that protect waterways; capture, clean up and reuse storm water; reduce flooding and use parks to capture runoff; and conserve drinking water. Projects are selected based on the following criteria:

CRITERIA		SUB-CRITERIA	SCALE
Water Quality Improvements	40%	Pollution Problem Identified by Adopted TMDL	Yes/No
		Meets Wet Weather Water Quality Regulations	Low/Med/High
		Meets Dry Weather Water Quality Regulations	Low/Med/High
		Reduces Pollutant Loads	Low/Med/High
Multiple-Objectives	30%	Enhances Drinking Water Source	Low/Med/High
		Provides Potential for Beneficial Reuse	Low/Med/High
		Enhances Environment	Yes/No
		Provides Open Space/Recreational Areas	Yes/No
		Reduces Flooding	Yes/No
		Consistent with the Integrated Regional Watershed Mgmt. Plan, the Los Angeles River Revitalization Plan and the Watershed/Water Management Plan	Yes/No
Project Feasibility/ Readiness/ Financial	30%	Durability of Project	Low/Med/High
		Cost of Project	Low/Med/High
		Relies on Proven Technology	Yes/No
		Project Ready for Implementation	Yes/No
		Potential for External Funding	Yes/No
		Strong Community Support	Yes/No

Note: All projects must be monitored by the Environmental Monitoring Division or Watershed Protection Division of the Bureau of Sanitation for water quality benefits, pre- and post- construction.

Figure 23 – Source: Proposition O Website, available at http://www.lapropo.org/sitefiles/criteria.htm.

Proposition K

Proposition K is a City of Los Angeles park funding measure passed in 1996 that grants $12.1 million dollars of funding per round for acquistion of park land, urban greening projects, and park improvements.

Maximum of funding is $1 million dollars for park acquistion.

The next round is unlikely to occur before March 2011 with funding avalibile in 2013.

Quimby Fees

Quimby Fees are fees paid by developers for the purpose of creating open space and paying for

the creation of parks or park improvements within two miles of the site. In the Wilshire Center area, up to $1 million dollars has been used per park project.
As of September 2009, $660,085.08 unspent dollars had been collected in Quimby Fees for Shatto Park. Additional development within two miles of the Park means more funds collected for park improvements. This funding can be used to fill in any gaps in funding not obtained from competitive state and local bonds.

Stormwater Fees (Proposed)
The City is currently considering a low impact development ordinace that will require developers to implement best stormwater management practices by requiring expanded current plan review requirements for stormwater. For projects that produce stormwater a $13/gallon fine will be imposed to pay for watershed improvements. This funding could be significant in paying for daylighting proposals and open space improvements in Wilshire Center.

New Parking Revenue (Proposed)
The connectivity recommendations are funded through the pricing of curb parking in high-demand areas that are currently unmetered. These areas are abundant and are mainly found along residential streets. The area is of comparable size to Old Town Pasadena, which netted $1.2 million on its parking meters in 2001 (14) ($1.5 million in 2010 dollars) (15) , hence, the new meters in the WCBID should be able to net at least as much.

Figure 24 - A modern parking meter in Los Angeles which accepts coins, cash and credit and serves multiple spots. Source: Streetsblog San Francisco, available at http://sf.streetsblog.org/2009/07/01/when-old-parking-meter-poles-go-so-often-does-bike-parking/

14. Chau, 65.

15. Bureau of Labor Statistics. Inflation Calculator. Retrieved from http://www.bls.gov/data/inflation_calculator.htm, on 3 April 2010

It is often difficult to find a parking space in the unmetered areas of the WCBID, which results in cruising for free parking. This not only adds to traffic, but to pollution as well, and is an inconvenience for motorists. The sensible solution is to do what dense urban areas around the world have done for decades: charge for curb parking to reduce the quantity demanded to a level such that spots are easy to find on each block, and raise money for neighborhood improvements at the same time. As an added bonus, this gives people an incentive to walk, cycle or use public transportation. Since parking revenue will come in gradually over time, it is especially well suited to meet the maintenance costs that are often overlooked when implementing a low impact development (LID) program. The Los Angeles Department of Transportation should meter the high-demand spaces by the beginning of 2011.

Implementation

The following section gives implementation details by recommendation. For each recommendation several questions will be answered. What will be done? What will the total construction cost be? Who will perform the action? When will the action be complete? Where will the action happen? Where will the funding come from?

Oasis #1 - Shatto Park Recreation Center Daylighting and Water Feature

To protect the watershed, reconnect the community to nature, create a bold visual symbol and use land currently dedicated to parking more efficiently we propose the creation of Oasis #1.

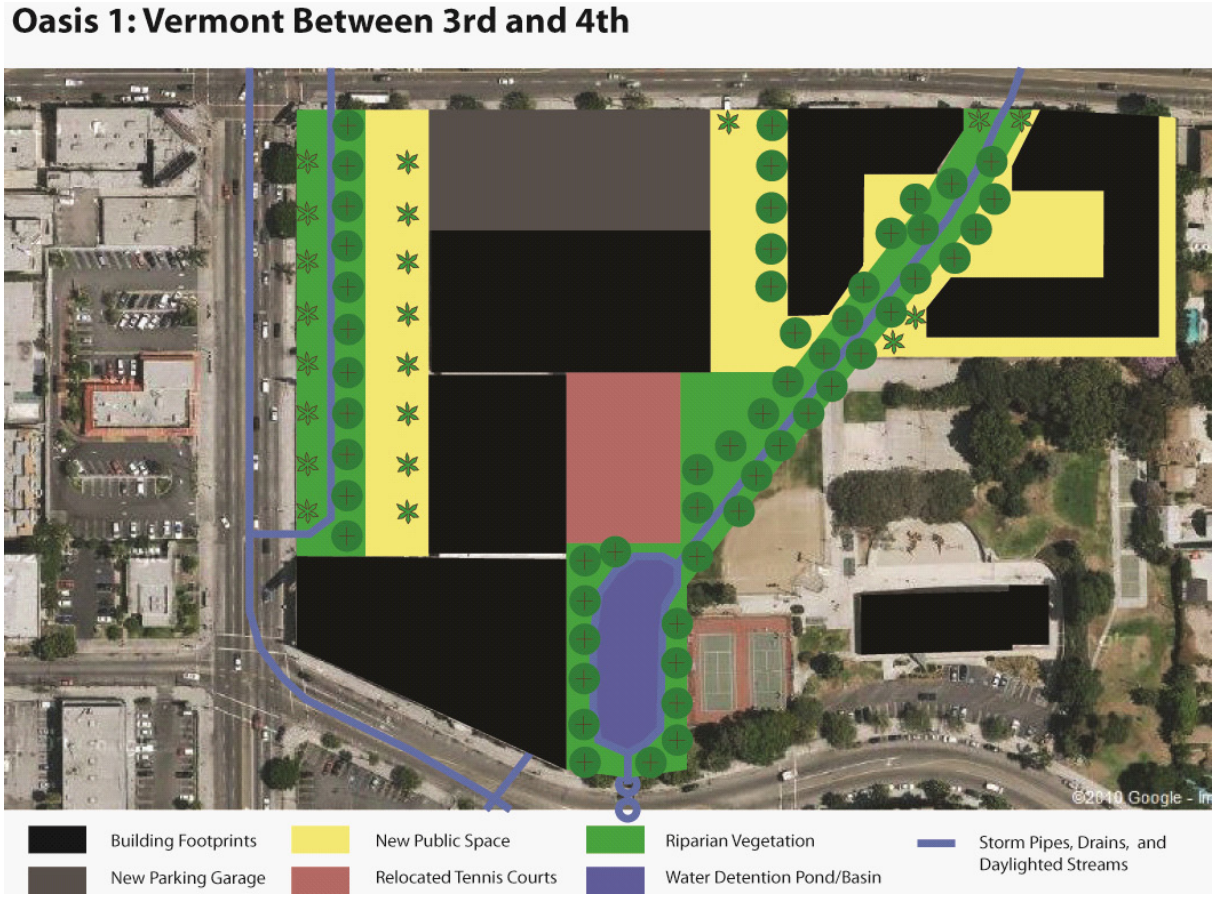


Figure 25 - Oasis 1 - Shatto Recreation Center Proposal

What: Water Feature, Daylighting of Streams
Cost: $1.5 million
Who: City of Los Angeles Department of Public Works (LADPW), Department of Recreation and Parks
When:
Funding Applications submitted by September 2010
November 2013: Grants received; begin construction
Constructed by 2015
Where: Shatto Recreation Center
Funding:
Proposition O: $500,000
Urban Streams Restoration Program: $200,000
Proposition 84 Urban Greening: $500,000
California Riverway Parkway Grants Program: $300,000

Oasis #2 - Southeast Corner of Wilshire/Vermont Park Project
To protect the watershed, reconnect the community to nature, create a bold visual symbol and increase the supply of housing and commercial space in the area we propose the creation of Oasis #2.

Figure 26 - Oasis 2 - SE Wilshire/Vermont Proposal

What: New park, Urban Garden Function
Cost: $39 million ($32 million acquisition cost)
Who: City of Los Angeles Department of Parks and Recreation
When:
Funding Applications due: March 2011
Land Acquired: 2012
Constructed by 2020
Where: Wilshire/Vermont
Funding:
Proposition K (Local): $1 million
Proposition 84: $6 million
Quimby Fees, Stormwater Fees $2.5 million
Developers will pay for land acquisition costs

Oasis #3 - Wilshire/Serrano Daylighting
To protect the watershed, reconnect the community to nature, create a bold visual symbol, and to capitalize on the exiting openness of a unique site in the area we propose the creation of Oasis #3.

Cost: $100,000
Who: City of Los Angeles Department of Public Works (LADPW),
When:
Funding Applications Due: September 2010
Constructed by 2015
Where: North and south of Wilshire between Oxford and Serrano
Funding: Urban Streams Restoration Program: $100,000

Figure 27 - Oasis 3 - Wilshire Between Oxford and Serrano Proposal

Green Alleyways

Green alleyways are a low impact development concept that will have a positive impact on the watershed by reducing runoff, improving water quality, and providing a walkable and bikeable space.

What: Green Alley Retrofits
Total Area: 76,806 sq. ft.
Cost:
Porous Concrete
-$1,086,036 ($14.14 per square foot*)
-Total Area: 76,706 square feet
Trees
-$300 X 562 = $ 168,600
-562 trees (one every ten feet)
-Total Distance: 5,622 ft.
LED Lights
-$407 per street lamp, but no additional expenditure will be necessary as the retrofit project is already underway
Who:
Direct Green Streets Committee to coordinate with the Bureau of Engineering, Street Service, and Sanitation for the pilot project
Funding:
Stormwater Pollution Abatement Fee
Parcel Assessments
Fee on Construction
Grants – Community Beautification Grant Program

Xeriscaped Roofs

Xeriscaped roofs will reduce storm water volume, improve water quality, and mitigate the heat island effect.

What: Roofs
Total Area: 178,836 sq. ft.
Cost:
$3,576,720 ($20 per square foot)
Who:
Direct Green Roofs Committee to coordinate with the Bureau of Engineering, Dept of Building

and Safety for the pilot project
Funding:
Storm water Pollution Abatement Fee
Parcel Assessments
Fee on Construction
Grants – Community Beautification Grant Program

Parking Garage

The parking garage will create additional open spaces for green land use in this area by consolidating existing parking lots. Then this provides us the future development opportunity and will be expected to increase the property value when new open spaces create additional value to the area.

What: One four-level parking garage
Where: The site on the southeast corner of Wilshire and Harvard
Cost (16): $9.8 to $16.8 million
Who: A private developer
When: By 2013
Funding: the commercial loan or the parking credit

Permeable Pavement

Permeable pavement will decrease water runoff in rainy season which is the main source of flooding in the area. The surface of permeable pavement will provide more green scenery creating an aesthetic improvement over conventional impervious asphalt.

What: 40 parking spaces and 18,000 sq. ft.
Where: Shatto Recreation Center
Cost (17): $0.18 - $0.36 million ($10-20 per sq. ft.)
Who: Los Angeles Department of Recreation and Parks
When: By 2012
Funding: Proposition O Grants or Individualized Parcel Drainage Fees

16. http://www.highbeam.com
17. Chau, Haan-Fawn (2009). Green Infrastructure for Los Angeles: Addressing Urban Runoff and Water Supply Through Low Impact Development. Retrieved from http://www.lastormwater.org/siteorg/program/green.htm during April 2010.

Sharrows

To encourage cycling, which has fewer adverse impacts on the watershed than driving, and to promote cyclist safety we propose painting sharrows.

What: 262 markings
Cost (18) : $39,300 = $150 * 262
Who: LADOT
When: by 2013
Where: along "major" streets
Funding: new parking revenue

4th Street Bike Boulevard Segment

To encourage cycling, which has fewer adverse impacts on the watershed than driving, to open up a street to possible permeable repaving and to promote cyclist safety we propose creating a segment of the 4th St. Bike Boulevard.

What: eight bollards, three traffic circles and twenty seven signs
Cost (19): $7,190 = $2,800 + $1600 + $2,800
Who: LADOT
When: by 2013
Where: at specified intersections on 4th Street (see map)
Funding: new parking revenue

18. City of Palm Springs staff (2006). CA Public and Private Improvements Construction Estimate Schedule.
19. Public Works 2010 Costbook, p. 68. The cost of an 8" diameter pipe bollard is about $350.70 and eight of them will be necessary for a total cost of about $2,800. The traffic circle cost has been estimated by the cost of providing a concrete sidewalk island with a six foot radius plus the cost of three shrubs for each of the three islands. As mentioned previously, the cost of one square foot of 5" thick sidewalk is $3.90 and the cost of an economical shrub is about $75 plus maintenance. Each traffic circle will have an area of about 78.5 square feet, for a total cost of about $530 each or $1,590 total. Twenty seven signs will be installed both to indicate changes in allowed traffic movements and to indicate the presence of the bike boulevard itself. Traffic signs cost about $102.90 each which comes to about $2,800. Hence the total cost of the proposed bike boulevard is about $7,190 plus maintenance.

Bike Corrals

To encourage cycling, which has fewer adverse impacts on the watershed than driving, and to open up new areas of the street to possible permeable repaving, we propose constructing bike corrals.

What: 50 ten foot bike racks with visible barriers
Cost (20): $32,500 = $650 * 50
Who: LADOT
When: by 2013
Where: on "minor" streets near "major" streets
Funding: new parking revenue

Wilshire/Vermont Bio-Street

To manage more storm water on site and create a pleasant walking environment that links our three oasis sites in a way that enhances sense of place in the WCBID we propose creating the Wilshire/Vermont Bio-Street.

What: 7,400 square feet each of sidewalk swale and sidewalk repair
Cost (21): $115,300 = $86,500 + $28,800
Who: City of Los Angeles Bureau of Street Services (BSS)
When: by 2014
Where: from Vermont/3rd to Wilshire/Vermont to Wilshire/Western
Funding: new parking revenue

20. Public Works 2010 Costbook, p. 70.
21. The swales will be 2' in width (so as not to make the sidewalk excessively narrow) and extend as far as possible without obstructing existing street objects such as trees, newsstands, bus shelters, and mailboxes. These upgrades will occur over 1.4 linear miles from the intersection of 3rd and Vermont south to Wilshire/Vermont and west to Wilshire/Western. Assuming that 50% of this area will be modified with a 2' swale width, the total area to be "swaled" is about 7,392 square feet. I will assume a cost of three times the cost of new sidewalk construction for this area (3*3.90/S.F. = $11.70/S.F.). Hence the total construction cost of the sidewalk swales will be about $86,500. An amount will be budgeted for an area of sidewalk replacement equal to the area of the new sidewalk swales at a cost of about $28,800. Therefore the total cost of the Bio Street will be about $115,300 plus maintenance.

Traffic Calming

To encourage walking and cycling, which have fewer adverse impacts on the watershed than driving, and to promote the safety of all road users, we propose implementing traffic calming.

What: 146 speed bumps and 128 sets of curb bump outs
Cost (22): $218,500 = $182,500 + 36,000
Who: LADOT
When: by 2015
Where: speed bumps at mid block along "minor" streets and bump outs at "minor" street intersections
Funding: new parking revenue

Maintenance

Maintenance costs: $20,600/year (5% of construction costs per year in constant dollars)
Responsible agencies: LADOT and BSS
Timeline: plan will be fully implemented by 2015
Is revenue source sufficient? Yes

Construction Costs ($)	
Oasis 1	2,000,000
Oasis 2	39,050,000
Oasis 3	100,000
Xeriscaped Roofs	3,576,720
Connectivity	
Bio Street	115,300
4th St. Bike Boulevard	7,200
Sharrows	39,300
Bike Corrals	32,400
Traffic Calming	218,500
Green Alleys	1,254,636
Parking Garage	13,300,000
TOTAL	**59,694,056**

Figure 28 - Construction Costs

22. Source: Mahoney, William D., ed. (2009). Public Works 2010 Costbook. Los Angeles: BNi Building News, page 96. Note that the Los Angeles area costs are 5% higher than the national average figures listed on the cited page (see p. 444). The figures listed here have been adjusted to reflect the LA prices. The cost of one asphalt speed bump is approximately $1,250. The cost of a square foot of 5" thick sidewalk is approximately $3.90. Each intersection will require about 72 square feet of new sidewalk ($281.23). Our plan calls for speed bumps and bulb outs at intersections on a number of residential streets. One speed bump will be installed on each block segment indicated on the map and one set of bulb outs will be installed at every intersection indicated. The total number of speed bumps installed will be 146 at a total cost of about 182,500 plus maintenance. The total number of intersections receiving bulb outs will be 128 at a total cost of about $36,000 plus maintenance. Hence, the total cost of our traffic calming recommendations will be about $218,500 plus maintenance.

Conclusion

The Wilshire Center Urban Oases Plan incorporates a variety of physical design recommendations that serve to reduce the impacts of urban activities and structures on the Ballona Creek Watershed. Features such as xeriscaped roofs, bioswales, permeable pavement and daylighted streams reduce urban storm water runoff and facilitate groundwater recharge. Connectivity enhancements that favor bicycles and pedestrians over the automobile will encourage the use of alternative modes of transportation, thereby reducing automobile-related impacts on water quality.

Many of the proposed recommendations will be concentrated within the three oases and the connective Bio Street. The three oases are located in high-traffic and transit-accessible locations, making them highly visible and lending the Wilshire Center a distinct identity as a place that is at the forefront of sustainable watershed management. Costs and implementation measures have been carefully considered, making this both a practical and innovative Plan. If implemented, the Wilshire Center Urban Oases Plan distinguish Wilshire Center as a showcase for such sustainable practicies in Los Angeles and the world.

Figure 29 - Final Plan Overview