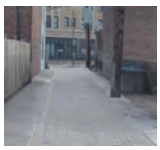
June 2008

USC Center for Sustainable Cities

Transforming Alleys into Green Infrastructure for Los Angeles

Arly Cassidy
Josh Newell
Jennifer Wolch



University of Southern California
3620 S. Vermont Avenue
Los Angeles, CA 90089-0255
www.usc.edu/sustainablecities

Acknowledgements

We gratefully acknowledge financial support from the John Randolph Haynes and Dora Haynes Foundation. We would also like to express our gratitude to Kim Reynolds, Travis Longcore, Joseph Devinny, Hilary Bradbury, Mona Seymour, Jennifer Mapes, Zaria Tatalovic, Greg Elwood, Mia Costa, Rachel Bramwell, Ari Briski, Michael Schreiber, and Ross Stephenson as well as our community partners TreePeople, Trust for Public Land, Pacoima Beautiful, and the Los Angeles Neighborhood Land Trust.

Preferred Citation: Cassidy, A., Newell, J., and J. Wolch. 2008. *Transforming Alleys into Green Infrastructure for Los Angeles.* Los Angeles, CA: USC Center for Sustainable Cities.

About the Center for Sustainable Cities

The USC Center for Sustainable Cities (CSC) fosters research, education, and partnerships to address the sustainability challenges facing metropolitan regions, and generates innovative solutions that enhance the natural environment, economic vitality, and social equity of cities worldwide. CSC regularly partners with community-based nonprofit organizations, as well as USC's Institute for Prevention Research, on projects that highlight the role of parks and open-space and recreation in increasing physical activity and improving public health, particularly in park-poor neighborhoods. In 2007, CSC conducted an exhaustive study of the physical characteristics and usage patterns of more than 300 alleys across the city of Los Angeles.

CONTENTS

Contents 2

List of Figures v

List of Tables vi

Executive Summary vii

Report Structure ix

Useful Terms x

I. Introduction 1

II. Alleys In the City of Los Angeles 5

Alley Use 7

Primary Users 9

Challenges to Greening Alleys 12

III. Case Studies: Programs in other Cities 13

Chicago 14

How the Program was Developed 14

Challenges 16

Results and Future Directions 16

Seattle 17

How the Program was Developed 17

Challenges 18

Results & Future Directions 19

Baltimore 21

How the Ordinance was Developed 21

Challenges 24

Results & Future Directions 24

Vancouver 25
How the Program was Developed 25
Challenges 27
Results & Future Directions 27
IV. Creating a Green Alley Program in Los Angeles 28
Establishing a Process 28
Measuring Results 28
Funding & Maintenance 29
Alley Redesign 29
Policy Reform 30
Immediate Steps 30
Short-Term Steps (1 to 3 years) 30
Long-Term Steps (3 to 6 years) 32
A Pilot Project: The Wilmington Green Alley 34
V. Appendixes 36
Appendix A: How to Lead an Alley Revitalization Event 36
Project Readiness Checklist 36
Steps to a Successful Project 37
Timeline 39
Important Contacts 42
Appendix B: Baltimore's Gating and Greening Process 46
Appendix C: Focus Group Summaries 47
Pacoima 47
Sun Valley 47
South Los Angeles 47
Hollywood 48
Wilmington 48

Appendix D: Basic Contacts and Resources 50

Los Angeles 50

Chicago 50

Seattle 51

Baltimore 51

Vancouver 51

Web Links 52

VI. References 53

LIST OF FIGURES

Figure 1 Park Disparity in Los Angeles: South L.A. Subregion (left) and West L.A. subregion (Right) 1

Figure 2 A typical alley in Los angeles..... 1

Figure 3 An Alley Gated under the “Alley Nuisance Abatement Ordinance” 2

Figure 4 Permeable pavement allows rainwater to percolate down to groundwater 3

Figure 5 A mother walks her child home along an Alley in Wilmington..... 3

Figure 6 Alleys of the City of Los Angeles 4

Figure 7 Most residents access alleys in their cars..... 6

Figure 8 A Palms neighborhood alley in need of attention 7

Figure 9 Trash containers are often located in alleys..... 9

Figure 10 Examples of green alleys: Chicago, Vancouver, and Seattle (Left to Right)..... 13

Figure 11 A Chicago alley, before and after..... 15

Figure 12 Chicago's Green Alley Handbook..... 15

Figure 13 Seattle's first Street Edge Alternative Project, before and after 18

Figure 14 Seattle's new street edge allows runoff to be absorbed by vegetation 18

Figure 15 Brochure of Seattle's Green Grids concepts and tools 20

Figure 16 Luzerne-Glover Alley, before and after its gating..... 22

Figure 17 Mayor Dixon signs Alley Gating and Greening Ordinance into law 23

Figure 18 Neighborhood party in the converted Luzerne-Glover Alley..... 23

Figure 19 grassy bioswales help absorb and clean runoff 26

Figure 20 Vancouver's *Country Lane* uses minimal amounts of Impermeable surface..... 26

Figure 21 Vancouver's pilot Sustainable Street was Inpired by Seattle's SEA Program 27

Figure 22 This Country Lane pilot features center strip paving..... 27

Figure 23 Proposed alley conversion in Wilmington 34

Figure 24 Alley infrastructure of Wilmington 35

LIST OF TABLES

Table 1 Alleys in Los Angeles, by Land Use Category 5

Table 2 Alley Characteristics, Los Angeles 6

Table 3 Alley Use, Observed Activity 8

Table 4 'Signs' of Life, Observed Alleys 8

Table 5 Major Stakeholders using Alleys 11

EXECUTIVE SUMMARY

There are more than 900 linear miles of alleys in the City of Los Angeles. Many are sites of nuisance, pollution, and danger that collectively impose significant costs on local jurisdictions charged with public safety and sanitation. Alleys, however, also represent a valuable resource in land-scarce and park-poor communities throughout Los Angeles.

Alleys are primarily used by the general public for ingress and egress, for parking, and to access homes and businesses. City and county agencies also use alleys for a variety of purposes, including weekly trash and recycling collection, and utility and street maintenance. In the City of Los Angeles, the Department of Public Works has primary jurisdiction of alleys; its duties include paving and maintenance.

Yet our research indicates that alleys remain a largely unrealized resource right in our backyards. Revitalizing alleys has the potential to create open space and parkland, promote physical activity for nearby residents, absorb and clean polluted urban runoff, and reduce crime and blight by building neighborhood cohesion through alley conversion projects. Numerous cities are recognizing this opportunity and have initiated innovative programs to green and revitalize streets and alleys:

- Chicago's *Green Alleys* program has successfully completed six alley pilot projects. Green techniques range from permeable pavement and recycled concrete, to high-albedo pavement. This program was largely the initiative of just one department, the Department of Transportation, which raised the funds and provided the support to make the projects successful. The program has received significant news coverage, including a feature article in *The New York Times*.

- Seattle's *Street Edge Alternative (SEA)* program seeks to recreate natural drainage patterns for the area. In the regions where it has been implemented, the program has significantly reduced urban runoff through the use of techniques such as bioswales and pervious paving. The program is now developing "Green Grids," which would deploy such techniques across entire sections of the city.

- Baltimore's *Alley Gating and Greening Ordinance* allows local communities to lease and gate alleys. This neighborhood-driven process was initiated by the nongovernmental organization Community Greens, which works with neighborhood groups to convert underutilized yards and alleys into shared community green spaces.

- Vancouver's *Country Lanes and Sustainable Streets* program aims to reduce stormwater runoff, improve salmon habitat, and build neighborhood cohesion in the city's 'country lanes' and streets. Six pilots have been completed to date. Financing comes from increased residential property taxes, calculated on a block-by-block basis.

Each of these alley and street greening initiatives provides guidance on how the City of Los Angeles might develop a Green Alley Program. By and large, these programs focus on one or two benefits: stormwater control, habitat restoration, or neighborhood integration. City leaders, community organizations, and others, however, have the opportunity to craft a far-

reaching Green Alley Program that incorporates the goals of key stakeholders to develop a truly comprehensive program that offers environmental, social, and economic benefits. Greening the alleys of Los Angeles can simultaneously make neighborhoods more walkable and amenable to physical activity, improve water quality and address urban runoff issues, and green the urban landscape. Alley conversion in Los Angeles can be a test-bed for innovation, a locus for research on policy change and urban design, and serve as a model for other cities across the county.

Zoning and relevant municipal codes would not need to be changed for the City to launch a pilot Green Alley Program. However, regulations would need to be changed to support the establishment of a permanent program. Moreover, there are numerous pilot programs in other cities that provide relevant technical and engineering guidance. *What needs to be created is a standardized process that city agencies and community groups alike can follow to revitalize and green alleys.* This process needs to encourage the incorporation of multiple benefits into such projects, and must facilitate financing, maintenance, and community participation.

This report makes several recommendations to the City of Los Angeles, including the following:

- *Convene a Green Alley Subcommittee of the City's Green Streets Committee.* This subcommittee should be charged with developing protocols and implementation plans for a Green Alleys Program.

- *Develop specific planning criteria, design guidelines and requirements, such as an Alley Overlay Zone.* This will help ensure that urban planners, engineers, and other stakeholders who affect alley use incorporate principles of green alleys in their planning, design, and maintenance efforts.

- *Establish a clear, streamlined process for residents and community groups.* Appendix A provides a draft of how this process might work.

- *Identify funding sources.* These include water quality and park bonds, intergovernmental transportation grants, and general fund resources, as well as philanthropic sources.

- *Incorporate alley conversion into existing programs.* Examples include the Integrated Resources Plan and the Water Quality Compliance Master Plan.

- *Implement pilot projects.* Wilmington, a low-income, dense, and park-poor community with high rates of chronic disease and obesity, is an ideal location for a pilot green alley. Support for additional green open space for Wilmington is strong both at the City level and in Wilmington itself. This report provides an initial scope for this pilot project.
- *Evaluate impacts and benefits.* Once pilot projects are underway, their costs and benefits can be assessed. Lessons learned can be incorporated into a citywide standard for Los Angeles and other cities.

REPORT STRUCTURE

This report is divided into five sections:

I. *Introduction*

The report begins with an *introduction* to existing alleys in Los Angeles, and then provides details on the benefits of alley conversion and an explanation of the methodology used for the report.

II. *Alleys in the City of Los Angeles*

Introduces readers to the key characteristics of *alleys* in Los Angeles and the stakeholders—residents, businesses, and government agencies—that use them. This section examines the current jurisdiction and use of alleys to help determine which stakeholders will need to be involved when planning to convert alleys.

III. *Case Studies: Alley Projects in other Cities*

Case studies provides overviews of alley and street greening programs in Chicago, Seattle, Baltimore, and Vancouver, and the lessons L.A. can learn from them. These case studies include information on materials, costs, administrative structures, maintenance, and community involvement.

IV. *Creating a Green Alley Program in Los Angeles*

This section considers what lessons Los Angeles can learn from the case studies, with specific attention paid to pilot projects, creating a process, funding, materials, and maintenance. It then suggests how to best combine the various techniques and tools to develop a *Green Alley Program* for Los Angeles. The report identifies the barriers to alley conversion in Los Angeles and recommends a potential pilot project in Wilmington. Next are policy recommendations for the City of Los Angeles in the immediate, short, and long terms, which include the development of planning criteria to create green alleys and education of decision makers and developers about how to incorporate alleys into their projects and plans.

V. *Appendices*

Four appendices provide the reader with additional information. These include:

Appendix A: How to Organize an Alley Revitalization Project

Appendix B: Baltimore's Gating and Greening Process

Appendix C: Focus Group Summaries

Appendix D: Contacts and Resources

USEFUL TERMS

Best Management Practice (BMP). The best-known technology or practice to achieve a goal (e.g., bioswales are a BMP for reducing street runoff).

Bioswale. See "Swale."

California-Friendly Plantings. Plants, shrubs and trees native to California or to regions with similar climates. These species are generally drought-tolerant and require less maintenance thanthose that are not climate-appropriate.

Charrette. An interdisciplinary design process which quickly moves participants from ideas to the creation of one or more designs.

Conversion. Changing something from its existing state to another, defined condition. In the case of alleys in L.A., conversion could mean adding stormwater management infrastructure, plantings, recreation equipment or space, or some combination thereof.

Grasscrete. See "Grid."

Greening. Traditionally, adding vegetation. In creating multi-benefit projects, adding technically "green" or sustainable infrastructure, such as permeable pavement.

Greenscape. A landscape of greenery, including trees, shrubs, plants, vines and flowers.

Grid. An arrangement of plastic or concrete pieces in the form of a grid, with hollows for soil and grass.

Groundwater. Water that can be found underground in streams, caverns, aquifers or other underground water bodies. Many municipalities draw significant portions of their potable water supply from groundwater.

Hardscape. A landscape made up of hard or impervious surfaces; these surfaces prevent rainwater from entering the ground and reduce the feasibility of greenery.

Heat-Island Effect. When urban surfaces, such as asphalt, absorb sunlight and heat up and then radiate that heat. Lighter colored surfaces reflect some sunlight before surfaces absorb it, thus reducing the heat-island effect.

High-Albedo Pavement. A type of pavement that is light in color so as to reflect some of the sun's light. This reduces the amount of heat absorbed by the pavement, which in turn reduces the heat-island effect.

Jurisdiction. Authority over legal matters pertaining to a certain place or thing; decision-making ability. For example, a homeowner has jurisdiction over their own property, while the Department of Public Works has primary jurisdiction over the alleys of Los Angeles.

Native Plantings. Trees, shrubs or plants which are native to a region and are thus best adapted to the region's climate; in Los Angeles, these plantings commonly require less watering and maintenance than non-native.

Ordinance. A law passed by a local municipality, such as a city.

Pedestrianization. To convert a street designed and used for motorized traffic into an area for pedestrians and other forms of non-motorized travel.

Permeable or Pervious Pavement. Allows water to travel down through the pavement into the ground, instead of turning into runoff.

Permeable Pavers. Usually slabs of concrete or stones which do not connect completely, leaving space between for water to be absorbed into the soil.

Runoff. Rainwater than is not absorbed into the ground. In general, the greater the amount of paved surface, the greater the percentage of runoff for an area. Runoff picks up anything in its path, from oil and dirt to trash objects, and carries it along. In Los Angeles, most runoff is diverted to major water bodies such as the Los Angeles River and Ballona Creek, ultimately reaching the ocean.

Soil Composition. The size of soil particles. Small particles create a more clay-like soil, which does not absorb water well, while larger, sand-like soil particles absorb rainwater and allow it to pass through and percolate down to the aquifer.

Stakeholder. A person with an interest or stake in a matter. Los Angeles alley stakeholders include residents, business owners, and city officials, among others.

Streetscape. The landscape of the street. This traditionally includes some or all of the following: a paved surface for driving, sidewalks, yards or fences, a parking strip of grass or trees, curbs, and lighting.

Strip Paving. The placement of pavement only where car or truck wheels will touch the ground. Strip paving generally forms two parallel strips, with soil or grass between, that follow the traditional roadway.

Swale. A soft-bottomed (not paved) ditch or lowered area that collects and directs rainwater for absorption into the ground. Swales are most effective when placed adjacent or near to a large hard surface, such as a street or parking lot, in order to absorb all of the runoff from the surface.

Vacate. To legally remove accessibility. When a street is vacated, it technically stops being a street and becomes an open public space, or is built upon.

I. INTRODUCTION

The City of Los Angeles is one of the most park-poor cities in the United States, with just 7.8% of the City's area devoted to parks and open space. There is a lack of park space for play and recreation, connection to nature, social activities, and neighborhood relationship building. In addition, park resources are inequitably distributed, with some L.A. regions having much better access to parks than others (Figure 1).[1]

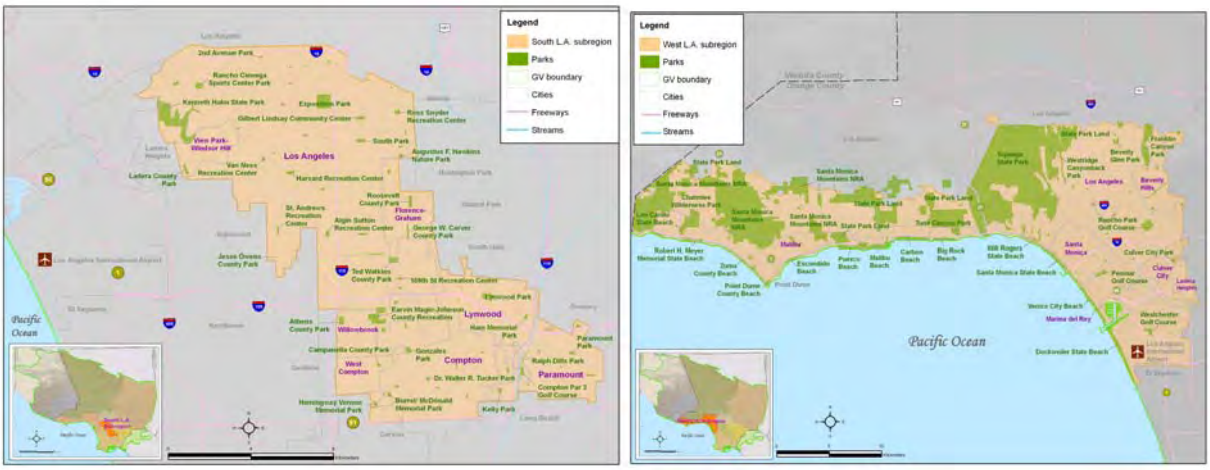


FIGURE 1 PARK DISPARITY IN LOS ANGELES: SOUTH L.A. SUBREGION (LEFT) AND WEST L.A. SUBREGION (RIGHT)

In addition to inadequate and poorly distributed park space, the city faces a host of other challenges to making the region more livable and environmentally friendly. Congested, exhaust-filled streets make alternative forms of transportation such as walking and biking unpleasant. With little permeable ground space left in the city, rainwater runoff entering surrounding water bodies has increased in quantity and pollution, and groundwater supplies have dwindled.

In 2007, progressive decision makers, non-profits, and academic institutions began exploring the possibility of converting Los Angeles alleys to help address these issues. Perhaps the most underappreciated component of urban infrastructure in Los Angeles, the alley network is used largely for parking, access to trash pickup, and utility infrastructure maintenance. City policy towards alleys is essentially the same as for streets. Most alleys are paved, and the city paves them as budget resources permit.

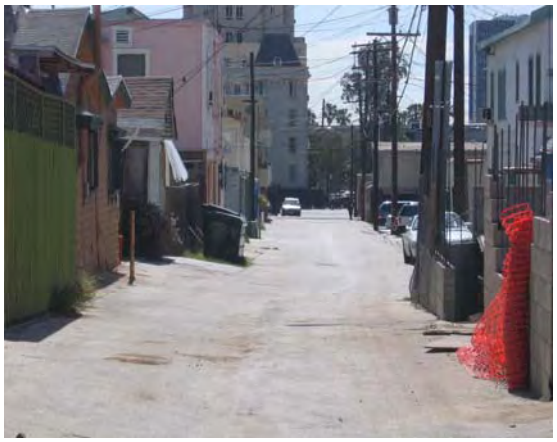


FIGURE 2 A TYPICAL ALLEY IN LOS ANGELES

In the past, the City of Los Angeles allowed "nuisance" alleys to be gated and locked, as long as adjacent property owners agreed and undertook all maintenance responsibilities.

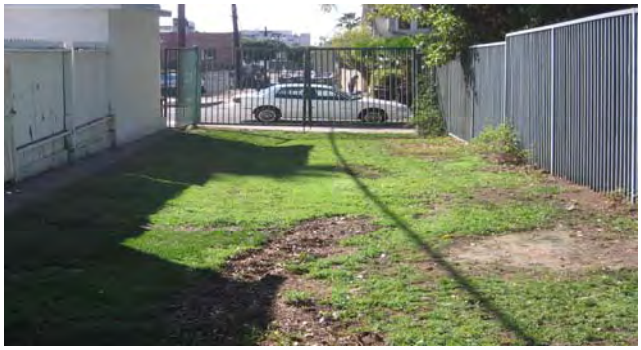


FIGURE 3 AN ALLEY GATED UNDER THE "ALLEY NUISANCE ABATEMENT ORDINANCE"

But in 1991, a group called "Citizens Against Gated Enclaves" sued the City, stating that the rights of ingress and egress must be maintained for all city right-of-ways. In 1993, a superior court judge ruled in favor of the group, making it illegal to close or gate alleys and halting further gatings.[2]

Research on the city's alleys by the USC Center for Sustainable Cities began in 2006. In summer 2007, the Center's Alley Team conducted physical audits as well as behavioral observations or 'snapshots' of 300 alleys in the City of Los Angeles that were identified using a random stratified sample. In-depth behavioral observations were also conducted for 30 alleys.

Five focus groups were conducted by USC and its community partners in selected neighborhoods in the city (see Appendix C). Groups were asked to discuss alley use, including types and frequency of personal use, use by family members, and by any other users they have observed. They were also asked to discuss perceived safety and to suggest ways in which alleys could be improved. Telephone interviews were conducted with key stakeholders in the City of Los Angeles, including the Department of Public Works, Police Department, and the Fire Department. Information on the other cities was gathered through phone and email interviews with relevant program staff and through online internet research.

After a presentation of initial results to city officials in fall 2007, the Department of Public Works formed a Green Alleys subcommittee under its newly formed Green Streets Committee. Los Angeles Councilmember Tom LaBonge also introduced a "Green Alley" initiative to the City Council in January 2008, which would create a program for L.A. similar to Chicago's Green Alley Program.[3]

Greening alleys—Los Angeles' urban network connectors—offers multiple benefits:

- *Create recreational opportunities.* Alleys are a vital land resource in many park-poor neighborhoods, where obesity is a major health problem. Transforming alleys into walkable, bikeable, playable spaces can supplement scarce park resources by using existing underused infrastructure.

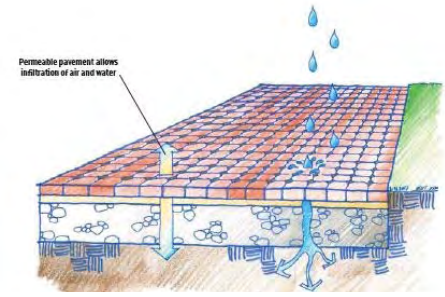


FIGURE 4 PERMEABLE PAVEMENT ALLOWS RAINWATER TO PERCOLATE DOWN TO GROUNDWATER

- *Encourage neighborhood walkability and connectivity.* Active, green alleys can provide connections between parks, schools and neighborhood centers. Converted alleys will encourage people to walk rather than drive when making trips to stores, parks, and other nearby destinations.

- *Improve water quality and supply.* Simple infrastructure changes such as using permeable pavement or adding bioswales in alleys will reduce urban runoff, recharge groundwater, and improve water quality in streams, rivers, and coastal waters.

- *Green the urban matrix.* Planting drought-tolerant, California-friendly plants in combination with permeable pavement will create shade, retain rainwater, reduce the heat-island effect and provide habitat for native species.

- *Reduce crime.* Many residents perceive alleys as unsafe.[4] Improving lighting and making alleys attractive will help address safety concerns and encourage their use.

FIGURE 5 A MOTHER WALKS HER CHILD HOME ALONG AN ALLEY IN WILMINGTON

Alley conversion can take place and still allow for existing uses, such as ingress and egress and access by services—a win-win solution for residents and for the City of Los Angeles. Converted alleys are a wise investment of infrastructure dollars because they provide the multiple benefits described above. Publicly funded programs such as stormwater management, urban green space, and public health and policing services will directly—and financially—benefit from alley conversion. For example, permeable pavement would help recharge groundwater supplies, allowing the City to reduce costly water purchases from outside the region.

Section II provides detailed information about alleys in the City of Los Angeles. Since many cities share the goals identified above and have developed pilot programs, Section III provides case studies of pilot programs in Chicago, Seattle, Baltimore, and Vancouver and draws out the experiences of these cities in using alleys and streets to address urban challenges of stormwater management, equitable provision of park and recreation space, community building, and developing alternative forms of transportation. Section IV offers a set of policy recommendations designed to move the City of Los Angeles toward a successful Green Alleys Program.

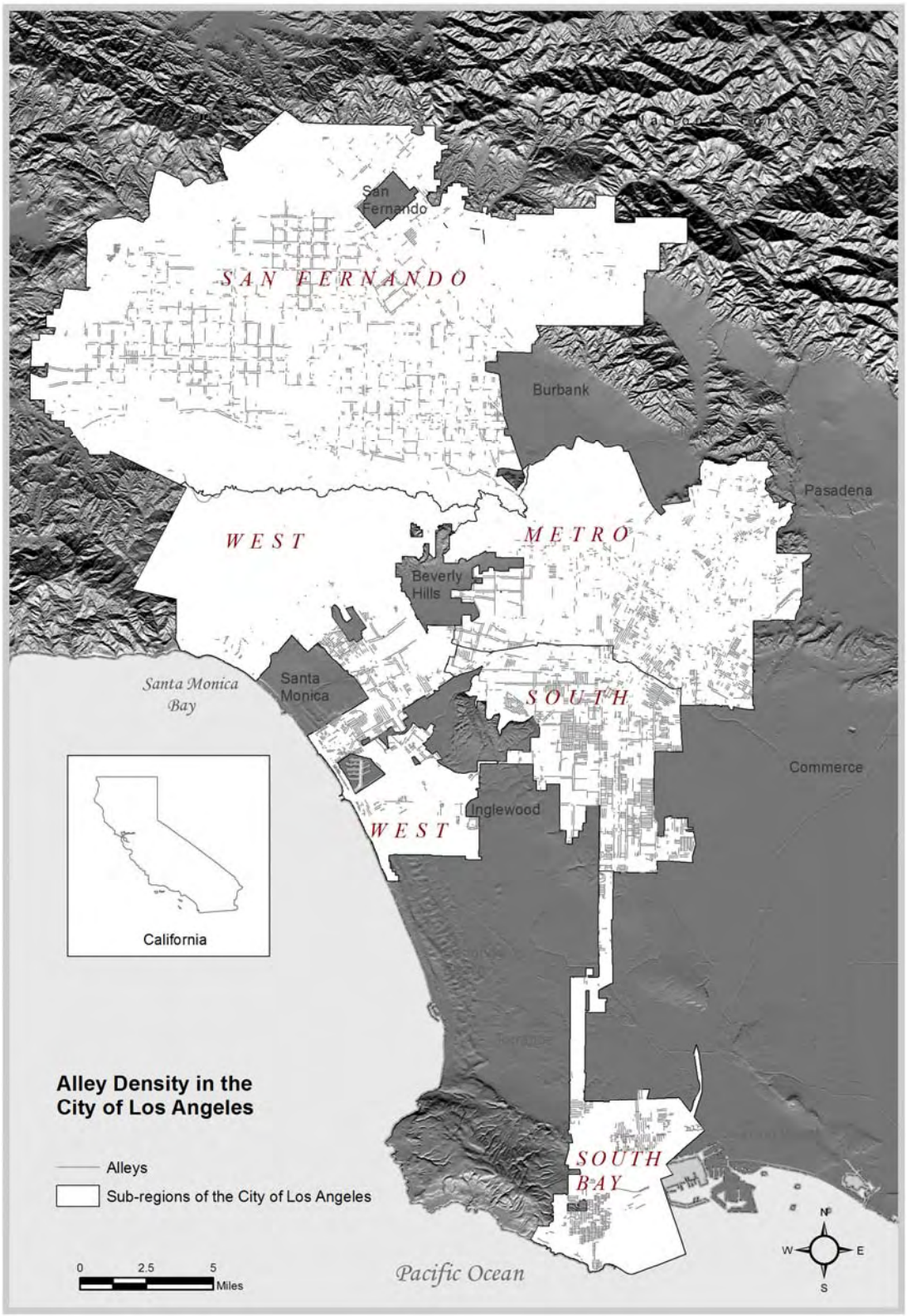


FIGURE 6 ALLEYS OF THE CITY OF LOS ANGELES

II. ALLEYS IN THE CITY OF LOS ANGELES

The City of Los Angeles has 12,309 alley segments, which are widely distributed across the city but especially concentrated in the South (26.9% of the total alleys in Los Angeles), the San Fernando Valley (26.7%), and the Metro (20.8%) subregions of Los Angeles (see Figure 6). The alley network amounts to 914 linear miles, or approximately 1,998 acres (or, assuming an average alley width of 18 feet, 3.12 square miles of urban land). To put the scope of the alley network in perspective, it is roughly half the size of the largest municipal park in the nation, Griffith Park (4,100 acres).

These alleys are located in a mix of land uses, but especially high-density single family residential (34% of the total alleys) areas, mixed residential (18.65%), low-rise apartments/condos/townhouses (12%)—and in commercial districts—older strip development (14.3%) and modern strip development (6.14%). Alleys in industrial areas, with manufacturing, assembly, and industrial services, comprise 5.78% of the total (Table 1).

ALLEYS IN LA

12,309 alley segments

914 linear miles

1,998 acres*/3.12 square miles

Largely in residential areas

Distributed widely, with highest concentrations in Southeast and Southern LA

*Assuming an average alley width of 18 feet

TABLE 1 ALLEYS IN LOS ANGELES, BY LAND USE CATEGORY

Type of Land Use	Percentage of total
High-density single family residential	34%
Mixed residential	19%
Older strip development	14%
Low-rise apartments, condominiums, and townhouses	12%
Modern strip development	6%
Manufacturing, assembly, and industrial services	6%
Other	9%

The focus groups conducted by the Center for Sustainable Cities and its community partners indicated that alleys are generally perceived as unsafe and dirty places. The focus groups indicated that participants generally avoided alleys, limiting their use to shortcuts and to access of residences and parking spaces. Participants described neighbors, homeless people, and unknown people dumping garbage and large furniture into their alleyways. Though confronting offenders and undertaking clean-ups themselves were sometimes successful, garbage appeared to be a recurring problem.

The majority of participants agreed that because of all of the negative perceptions of alleys, the spaces do not benefit their communities, aside from their practical functions as conduits to properties, as shortcuts, and as throughways for garbage collection trucks.

Yet these perceptions stand in contrast to the results of physical audits of 300 alleys in the city of Los Angeles, which indicate that alleys are generally attractive, walkable, and quiet. Three-quarters of the alleys were rated as attractive and easy to walk in (Table 2).

TABLE 2 ALLEY CHARACTERISTICS, LOS ANGELES

Category	Assessment				
	Easy	Moderate	Difficult		
Walkability	75.4%	23.6%	1.0%		
	None	Low	Medium	High	
Noise	4.7%	81.4%	13.2%	0.7%	
Odor	81.8%	15.2%	3.0%	0.0%	
	N/A	1 to 25%	26 to 50%	51 to 75%	76 to 100%
Impermeable surface	2.0%	1.0%	1.0%	1.7%	94.3%
	0	1	2	3	4 or more
Municipal lighting Fixtures	58.4%	29.6%	6.2%	4.5%	1.4%
	Very unattractive	Unattractive	Average	Attractive	Very attractive
Aesthetics	1.0%	12.5%	75.3%	11.2%	0.0%

In more than 80% percent of the alleys no odor could be detected. In 85% noise was rated as either 'none' or 'low'. No or only a small amount of small litter was found in 84% of the alleys. Over half (58%) had no large garbage items, 63% lacked 'risky litter', and 85% had little or no graffiti.

Alleys appear to be key access routes. Virtually all the alleys audited (97%) had either one or two street access points – where alleys connect to the street. Alleys also provide access points to property. This includes access from parking structures to residences but auditors also noted

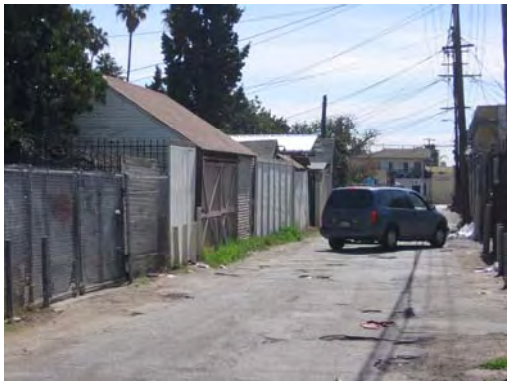


FIGURE 7 MOST RESIDENTS ACCESS ALLEYS IN THEIR CARS

many small gates where property is accessed by foot. Seventeen percent of the audited alleys had 31 or more property access points, and 55% had more than ten.

For some audited alley characteristics, there was significant regional variation. Some regions faced more problems with garbage and waste than others. In the South region, for example, 38% of the alleys had medium to large amounts of small litter, 15% had medium to large amounts of risky litter (e.g. alcohol containers, beer caps, condoms, and drug paraphernalia) and 34% had medium to large amounts of graffiti. The Metro region also had higher than average percentages for these indicators, including the most risky litter. In contrast, the West region's alleys had very little risky litter, graffiti, or large garbage.

FIGURE 8 A PALMS NEIGHBORHOOD ALLEY IN NEED OF ATTENTION

ALLEY USE

In California, virtually all streets and alleys are the property of adjacent landowners, out to the street's centerline. Local jurisdictions own the improvements on top of the land (paving, lights, etc.) and maintain the right to use the underlying land as a street. This is known as an easement. Cities have easements for all public streets and alleys in order to guarantee their use. Thus alleys, like other streets, are quasi-public spaces, with local jurisdictions responsible for their governance and maintenance.

The physical audits indicated that access by vehicles might be a prominent use of alleys; the behavioral observations confirmed this finding. Driving to access or leave a property was the most commonly observed activity in the alleys audited and in the in-depth observations done on 30 alleys (Table 3). Driving through alleys was the second most common activity in the alleys as a whole, while third in those alleys observed in-depth. Yet our observations also show that people also use alleys to leave or access properties on foot (12% of the 300 audited alleys) and as shortcuts (12% of the 300 audited alleys). Audits ended at 8 p.m.; activities that might generate more concern, such as drug use or prostitution, may have been more frequent after this time.

TABLE 3 ALLEY USE, OBSERVED ACTIVITY

Type	All audited alleys	In-depth alleys (N=30)
Driving (access or leave property)	27%	26%
Driving (shortcut)	19%	12%
Walking (access or leave property)	12%	19%
Walking (shortcut)	12%	7%
Flying within/into/out of alley (animals)	9%	7%
Sitting/perching (humans & animals)	5%	7%
Trucks (unloading or loading)	3%	—
Eating/drinking (humans & animals)	—	2%
Biking (shortcut)	—	2%
Napping/sleeping (humans & animals)	—	1%
Other activities	15%	16%

Audits of 'signs of life' provide insight into how alleys might be used (Table 4). Parked cars were the most commonly sighted 'sign of life' (75%). Perhaps the absence of clear jurisdiction is the motivating factor, but private signage was the second most common (65%) sign of life. 'Dog droppings' was the fourth most common 'sign of life' after wildlife (e.g. birds, snakes, raccoons). Chairs and benches (10.5%), sports equipment (9.76%), companion animals (dogs and cats; 3.6%), and makeshift shelters (2.44%) were other signs of life. This provides evidence that while residents are clearly using alleys to access their homes, apartments, offices and stores, people are also walking their dogs, playing sports, congregating and socializing, even sleeping in them.

TABLE 4 'SIGNS' OF LIFE, OBSERVED ALLEYS

Activity	All regions	Metro	SF	South	Southbay	West
Parked car	76%	71%	82%	75%	71%	80%
Private signage	65%	60%	74%	50%	65%	79%
Wildlife	36%	22%	34%	12%	47%	67%
Dog droppings	34%	39%	34%	39%	33%	22%
Ad signage	30%	40%	24%	47%	26%	14%
Sports equipment	11%	12%	6%	17%	12%	7%
Chairs or benches	10%	12%	12%	8%	6%	13%
Companion animals	4%	4%	1%	3%	9%	5%
Sleeping bags, makeshift shelters	4%	6%	0%	0%	12%	0%
Farm animals	0%	0%	1%	0%	0%	2%
Other	30%	39%	31%	48%	20%	11%

Frequency of use. One of the striking revelations of the in-depth behavioral observations was how infrequently alleys were used. Almost 80% of the time no activity was observed; this was true for both weekend and weekday observations, in both forms of behavioral observation (general audits and in-depth behavioral audits). Activity occurred 22% of the time during the weekdays and 20% of the time during the weekend. Some homeless people were observed, as well as dumping of trash. Concerns, including lighting, illicit activity, and safety from vehicles may contribute to this lack of use. Focus group participants suggested that greenscaping, street furniture, and play equipment would all help draw neighbors out of their homes to use alleys.[5]

PRIMARY USERS

Residents and businesses are the primary users of alleys, especially on a daily basis. Alleys located in commercial areas can see heavy use. Truck deliveries and loading are often conducted in alleys behind stores and offices, which require vertical and horizontal clearance, as well as pavement engineered to bear expected loads. These deliveries can occur in the early morning or late evening, and can block traffic along the alleyway. Store customers also frequently use alleys to access parking and shop entrances, which can greatly increase the volume of traffic along an alley. Interviews with city and county agencies in Los Angeles provided insight into other users, especially in industrial areas, where alleys are used for materials deliveries and pickup.

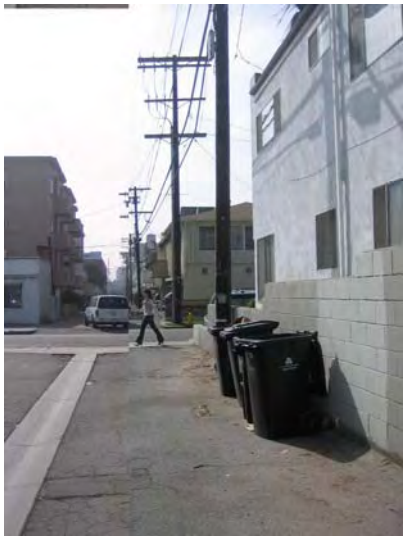


FIGURE 9 TRASH CONTAINERS ARE OFTEN LOCATED IN ALLEYS

Public agency staff also accesses alleys, though usually not on a daily basis. A number of bureaus within the Department of Public Works use alleys, such as the Bureau of Sanitation, which uses alleys to pick up garbage and bulky items and to maintain wastewater infrastructure. The Department of Water and Power uses alleys to access overhead power lines and underground water lines, and to check meters. The Los Angeles Police Department uses alleys while on patrol or in the case of suspect pursuit. The Fire Department needs to access alleys in case of emergencies. Table 5 shows the range in type and frequency of alley use, possible challenges to conversion, and related city codes.

Departments that do not use or plan alleys, but have jurisdiction over their design include Building and Safety, Transportation, Planning, and the Public Works Office of Community Beautification.

Department of Public Works

In Los Angeles, the Department of Public Works (DPW) holds primary jurisdiction over streets and alleys. Other departments use alleys to provide services, but Public Works maintains and administers alley use. Five bureaus collaborate under the umbrella of Public Works, three of which pertain especially to alleys: Engineering, Street Services, and Sanitation. The activities of these departments range from permitting to underground sewage pipes, and from paving to trash pick-up.

The Bureau of Engineering has sole permitting jurisdiction and is the primary point of contact. A Bureau of Engineering B Permit is required for construction activity involving any public right-of-way (ROW), including alleys.[6] This holds true for other city departments as well as private applicants, and includes all construction involving city property such as modifications to any pipes underground, the placement of electricity or lighting poles, and surface materials and measurements Alley greening may raise concerns for the Bureau of Engineering if were to interfere with maintenance responsibilities and/or utilities due to space limitations. If any egress or ingress is modified, or if the alley is narrowed, the California Streets and Highway Code would apply. Any water infiltration might require additional approval from the Department of Water and Power (DWP).

The Bureau of Street Services paves and maintains streets and alleys, and maintains the urban forest. This bureau reviews work proposals and can impose standards for landscaping, streetscaping, and materials use. Within Street Services, projects may be filtered to different sub-departments to address paving, landscaping or other issues. Alley-related concerns from Street Services include Fire Department access and truck loading.[7] Further guidelines pertaining to Street Services can be found in City Charter Section 505, which also defines alleys as a DPW easement.[8]

The third Public Works bureau that uses alleys is Sanitation, which oversees trash and recyclables pick-up, as well as management of wastewater and stormwater. Sanitation requires access to alleys for regular garbage and recycling service as well as bulky item pick-up. Within the Bureau of Sanitation, the Watershed Protection Division (WPD) has jurisdiction over water quality issues. The divisions of Watershed Protection and Wastewater manage underground sanitary sewer pipes and, in very few areas, storm drains in alleys.[9] The Watershed Protection Division monitors illicit discharge and illegal dumping, and also provides cleanup from illegal dumping. The division views alley transformation as an opportunity.

Department of Water and Power

Alleys are most commonly used by the Department of Water and Power to maintain overhead power lines and underground water distribution. The overhead lines used to distribute power locally do not require easements. Larger sub-transmission lines are generally avoided in alleys due to the height and width requirements of maintenance trucks. Trees can sometimes be a problem for these smaller power lines, however. Trees with high or wide canopies as well as palm trees can cause power disruptions during wind storms or due to overgrowth, and require attention from DPW's tree pruning and clearance

department. The DWP's Sub-transmission 34.5 KV Lines Department reports there is no conclusive consensus in studies with regard to prolonged exposure to electromagnetic fields (EMFs) and therefore no recommendation with regard to promoting physical activity or recreation near alleys with power lines.[10] This issue should be considered, however, when siting recreational alley spaces near major or sub-transmission power lines.

Police and Fire Departments

Another aspect of alley use comes from those departments devoted to safety. The Los Angeles Police Department (LAPD) uses alleys on a regular basis while patrolling and in the case of a suspect chase.[11] The Fire Department has specific load-bearing requirements for any streets or alleys that a fire truck must have access to. For smaller buildings fire access is from the street, but larger, "deeper" buildings may require access from a back alley as well.[12]

TABLE 5 MAJOR STAKEHOLDERS USING ALLEYS

Stakeholder	Type of Use	Frequency of Use	Needs/Challenges
Bureau of Sanitation	Trash and recyclables pick-up; illegal dumping; access to wastewater and stormwater infrastructure	Weekly/biweekly or as needed	Load-bearing surface materials sufficient for use by waste hauling and other service trucks
Residents	Access to cars and homes	Daily	Focus groups prefer paved surfaces due to mud
Businesses	Deliveries, loading and services	Daily/Weekly	Truck clearance, frequency of use
DWP	Power lines; water distribution facilities	Random/On demand	Clearance from high- or wide-canopy trees
Bureau of Engineering	N/A	N/A	Provides permits for all city Right-of-Way alterations
Bureau of Street Services	Paving and maintenance; review of proposed work	Not specified	Can impose standards for landscaping, streetscaping, materials use. Truck loading is primary limiting factor
LAPD	Safety	Upon demand	Visibility
Fire	Fire truck access to large buildings	Upon demand	Support for fire trucks (4000 psi); width & length clearance

CHALLENGES TO GREENING ALLEYS

Creating green alleys would not require changes to any of the City's existing zoning or other municipal codes. The most significant challenges to alley conversion are: ensuring current uses that ingress and egress will not be jeopardized; providing funding for project design, implementation, and maintenance; and changing perceptions of alleys are unsafe, dirty places. Some of these challenges are briefly expanded upon below.

- *Design and Engineering*

Improved thoroughfares are generally required to in case of flooding. Any alley redesign needs to demonstrate that flood-related criteria are met. Also, buildings at the edge of an alley often have shallow footings, and must be protected from any potential saturation and related damage that might arise from new landscaping and surfacing. Fire trucks and utility vans have width, height and pounds per square inch (psi) requirements. Police often use alleys as short cuts to reduce their response time. This may shape design alternatives in areas where alley access is particularly important for neighborhood policing. Although converted alleys would remain open to public use, if not properly planned, adding features such as tree plantings or exercise equipment might hinder ingress and egress.

- *Funding, Management, and Maintenance*

Active, green alleys will require maintenance in the same way that streets having planted medians, lighting, and/or street furniture do. Thus maintenance funds for alleys will need to be identified, either in the city's ongoing street services budget or elsewhere. A budgetary shortfall in Los Angeles in 2009-2010 and beyond may limit the availability of resources for new projects derived from General Fund sources. Neighborhood groups and organizations attempting to initiate alley conversions may need to work with city officials to obtain intergovernmental grant funds or philanthropic resources, until the City is able to fully integrate a Green Alley Program into its annual budget. New management partnerships may be desirable; the neighborhood land trust is one model for such community-based resource management and this model can be applied to green alleys.

- *Management and Community Involvement*

When conducting focus groups, the Center for Sustainable Cities and its community partners found that some participants perceived alleys as unsafe both because of crime and risks from environmental pollution, and recounted seeing gang members, drug users and sellers, and prostitution in their alleys, in addition to quality of life crimes such as public urination and trash dumping. Neighborhood residents may be concerned about security and maintenance or the potential for green alleys to attract undesirable users. Similar perceptions plague many public parks in poor communities. But extensive research as well as experience in Los Angeles suggests that it is possible to create small green public spaces of extraordinary quality and value to the community that are safe (and are perceived as such). For example, Bimini Slough Ecology Park (built on a vacated street) is located in a poor, high-density East Hollywood community plagued by many problems including crime and gangs, yet it is intensely used by community members without incident. Similarly, Augustus Hawkins Natural Park, in South Los Angeles, built on a small brownfield, is extraordinary because of its superior design and security features that create a sense of protection and calm.

III. CASE STUDIES: PROGRAMS IN OTHER CITIES

This section examines the approaches of four cities—Chicago, Seattle, Baltimore and Vancouver—to converting alleys. The respective goals and methodologies of these programs vary widely, but the underlying rationale is the same: alleys are underutilized resources. These case studies provide insight into successes, failures, techniques and processes and will help inform efforts in the City of Los Angeles to do the same.

FIGURE 10 EXAMPLES OF GREEN ALLEYS: CHICAGO, VANCOUVER, AND SEATTLE (LEFT TO RIGHT)

CHICAGO

The City of Chicago runs the *Green Alleys* program—perhaps the best-known alley greening program in the country.[13] An initiative of the Department of Transportation, the program was created in order to manage stormwater without installing storm drains in alleys. Additional program objectives are listed in the adjacent text box.

Program: *Green Alleys*

Main purpose: Manage stormwater by installing green infrastructure in alleys

Additional objectives: Functional drainage, reduce heat island effect, incorporate recycled materials, reduce light pollution

Tools: Pitched and graded alley surface, permeable pavement, high albedo pavement, recycled construction materials, dark sky compliant light fixtures

Pilot(s): 6 pilots (2006 and 2007)

Maintenance: Funded by the Department of Transportation; alleys designed with minimal daily maintenance requirements

Funding: Alderman discretionary funds for capital improvement projects; Green Alley options were added to menu of options

Challenges: Skepticism "green" techniques would work; acquiring support and buy-in; no local or regional manufacturers of new materials; high labor and materials costs first initial projects

Green Alleys began as a Department of Transportation (DOT) response to regular alley flooding and stormwater overload. Some of the strategies deployed include permeable pavement, reverse ground pitching, greening technique and recycled construction materials.

Initial funding (est. $900,000) for the program was allocated to the Streetscape and Sustainable Design Department of the Project Development Division within the Chicago DOT. The funding covered research and development for materials, six pilot projects, and creation of the Green Alleys Handbook.[14] The DOT generally worked alone on the project, though various levels of review were requested from the water, lighting, electricity, and streets and sanitation departments; each department reviewed the proposed plans and then approved them.

HOW THE PROGRAM WAS DEVELOPED

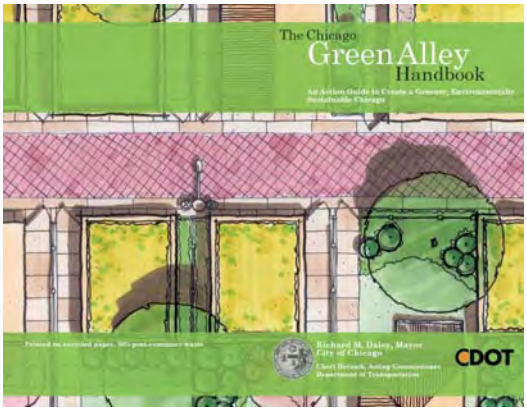
At first, many stakeholders were skeptical of the *Green Alley Program*. Many residents and city staff doubted the proposed greening techniques would work. To allay these initial fears, the Streetscape and Sustainable Design department decided to fund an initial pilot that succeeded in proving that the installed techniques worked and eliminated flooding. This, along with support from the Mayor's office, led the Steetscape and Sustainable Design's budget department to allocate funding for six additional projects.

Locations for the six pilots were chosen from a list of alleys with a history of flooding. The list was then narrowed further by the need for good drainage soil underneath the site and to ensure equitable distribution of the pilots across Chicago's 50 wards. Alleys in both residential and commercial areas were targeted.

FIGURE 11 A CHICAGO ALLEY, BEFORE AND AFTER

During construction of the pilot projects, the Streetscape and Sustainable Design department did extensive testing of different techniques and materials. Different mixes of permeable pavement and high albedo concrete, for example, were tested and refined.

A special kind of contract, called a Job Order Contract (JOC), made these project-by-project changes possible, allowing for more flexibility between the City and the contractor. Mistakes were made along the way. In one case, the construction crew removed the old pavement layer just prior to heavy rainfall, leaving large pools of sitting water on the unpaved alley that subsequently leaked into the basements of adjacent property owners. The use of reverse crown or center trench drainage and the practice of leaving some of old pavement in place along alley edges during construction helped to rectify this problem. Crews also began paying closer attention to weather reports.



An important element of the funded pilot program was the Green Alleys Handbook, which was widely distributed to stakeholders and helped to build support for the program.

FIGURE 12 CHICAGO'S GREEN ALLEY HANDBOOK

CHALLENGES

FUNDING AND MAINTENANCE

In 2007, the Green Alley Program was expanded to an additional thirty-two alleys. The Program is now an established component of the Department of Transportation (DOT), and continues to grow in popularity. The DOT funds the maintenance, but it is the responsibility of Streetscapes and Sustainable Design to monitor the alleys—recording temperatures of the albedo concretes, taking core samples to test the permeability and structure of the soil, and generally keeping track of the wear and tear. Given the converted alleys use permeable pavement, little daily maintenance is required, a significant cost savings for the City.

By 2008, funding for the Green Alleys Program had become a line item in the city's annual budget. Funds now come out of the Alderman's budgets for capital improvements and discretionary funds. An important aspect of this system is the flexible application of techniques. The Aldermen's budget menu is broken down by item, so Green Alleys are not ordered as a package deal. Instead, a request might be made for an alley with new lighting, or only the permeable paving. Each Alderman and neighborhood can decide which elements are best suited for them.

DESIGN & MATERIALS

The greatest challenge was development and production of the new materials. At the outset of the project, there were no local manufacturers of permeable or high albedo pavements. The city had to hire a company to develop these materials. Testing these new materials and techniques was costly and in the first projects, the city was overcharged for materials and labor. As demand for these new materials increased, regional suppliers began producing them based on the city's specific requirements.

How best to design the alleys was at first a source of concern. Initially there was pressure for the alleys to be designed for a 100-year storm event, which would have been cost prohibitive. Since the Chicago storm drain wastewater system is overloaded more from long, sustained rain rather than short, intense rain, the requirement was lowered to the existing standard: a 2-year storm event. If the stormwater exceeds the alley's capacity to absorb it, then the excess water runs down the reverse center crown to the nearest catch basin.

RESULTS AND FUTURE DIRECTIONS

The Green Alleys program has been a significant success. In 2007, it received the Chicago Innovation Award, from *The Chicago Sun Times* and Kuczmarski & Associates, and was a feature article in *The New York Times*.[15] The *Green Alleys Program* has garnered the attention and enjoyed the support of many of Chicago's citizens. This feedback has led to the program becoming a permanent fixture in Chicago's ongoing greening efforts.

SEATTLE

The goal of the *Street Edge Alternative* (SEA) program is to restore natural drainage patterns for the Seattle region. This includes managing stormwater and preventing spot flooding, recharging groundwater and watersheds, and cleaning pollutants from runoff. Additional goals are described in the adjacent text box.

The SEA program is run by Seattle Public Utilities (SPU), which is in charge of sewage, water supply, and piping infrastructure for the city. In creating the program, SPU worked in close collaboration with the Department of Transportation (DOT) to ensure that new street design met their requirements.

The program has undertaken two different types of projects. The first involves installing management equipment and techniques on a single street (a few blocks at most). The second creates Green Grids, which cover much larger areas.

Program: *Street Edge Alternative* (SEA)

Main Purpose: Restore natural drainage patterns

Additional objectives: Manage stormwater and prevent flooding, recharge groundwater, clean pollutants, maintain healthy wildlife habitat in creeks, and improve neighborhood

Tools: Reduce impervious surfaces, increase tree and shrub plantings, install bioswales, and landscape and repave streets

Pilot(s): Street Edge Alternative project, 2001; Broadview and Pinehurst Green Grids.

Maintenance: Informal agreement with adjacent property owners

Funding: Drainage fees collected by Seattle Public Utilities (SPU); general funds; capital improvement projects

Challenges: Public acceptance and participation; loss of parking.

HOW THE PROGRAM WAS DEVELOPED

The first Street Edge Alternative pilot was installed in 2001, and is located on 2nd Ave. NW between NW 117th and 120th Streets, near Carkeek Park in the north end of the city. The pilot includes roadway design, shifted sidewalks and altered drainage systems, and reduced impervious surfaces by an estimated 11 percent.[16] The total cost of the project was $850,000, including design and outreach.[17] In addition to creating a more pervious environment, the SEA pilot increased tree and shrub plantings, especially native species, installed bioswales, and completed landscaping and repaving.

Tests by SPU show that the improvements have reduced stormwater runoff from the street by 99 percent.[18] The converted street meets the retention requirements of a 25-year storm event. Air and water quality have improved around the pilot. Summer heat has been reduced and city workers report that surrounding residents are happy with the project.[19]

For the second project, SPU expanded its scope. The Broadview Green Grid project was planned in conjunction with roadway development upstream of the project, as part of a water treatment mitigation strategy. The project's dimensions encompassed sixteen city blocks and employed many of the same tools and techniques used in the Carkeek Park pilot.

The Broadview project also reduced street parking to one side of the street to allow for bioswales and green infrastructure. A second grid, Pinehurst Green Grid, was completed in 2006 and encompassed twelve city blocks.

FIGURE 13 SEATTLE'S FIRST STREET EDGE ALTERNATIVE PROJECT, BEFORE AND AFTER

CHALLENGES

FUNDING AND MAINTENANCE

Maintenance has been a significant challenge for the SEA program. Originally, SPU had made informal, verbal agreements with adjacent property owners that they would help maintain the vegetation, while SPU would maintain sewage infrastructure, drainage, and other infrastructure. But this agreement has been met with mixed success: some of the property owners have performed the maintenance, while others have not.[20] To encourage owners to do regular maintenance, the "Site Steward" and "Backyard Steward" programs were established and a "Maintain Your Ditch Day" was sponsored to promote local efforts.[21] Unfortunately, none of these programs has provided the response SPU had hoped for. As of June 2008, the department was trying to restructure maintenance operations, such that one person would be the program lead for each project and coordinate maintenance efforts. How this staff person will be funded is still unresolved.

FIGURE 14 SEATTLE'S NEW STREET EDGE ALLOWS RUNOFF TO BE ABSORBED BY VEGETATION

The operating funds used by Seattle Public Utilities for the program come from drainage fees charged to property owners. Additional funding for projects comes from Capital Improvement Project funds, used in this case when an SEA street is installed in place of a traditional street upgrade. The SEA program also gets funding from the City's general fund and enjoys the support of the mayor. Although the Seattle DOT was a partner in the design

of SEA streets, the DOT is generally funded by federal and state grants and levies, and so does not contribute funds to the projects.

Funding thus remains uncertain. The SEA is not a well-established city program, and funding originally designated for SEA project may be redirected to other needs, if deemed necessary. For example, if a street suddenly became flooded, dealing with such flooding would likely be prioritized before launching a proposed SEA project.

OTHER CHALLENGES

Acceptance has required continued outreach to the property owners. SPU worked hard to meet each property owner individually prior to the project, providing them with details and explaining the benefits. Many of the property owners felt that the SEA project would increase their property values, but others were resistant to the loss of street parking, inconveniences associated with construction, and the maintenance requirements. Public acceptance has increased over time, though some resistance to the projects remains. Issues of contention include public right-of-way use, which is technically under city control.

RESULTS & FUTURE DIRECTIONS

While the technical aspects, such as reducing stormwater flows, have been successful, developing a maintenance program has been a challenge. maintenance and funding of the project has been less so. Neighborhood support has been mixed. The future of the program remains in doubt.

Pending the approval of funds, Seattle Public Utilities' next project slated for construction is even larger than the Green Grids, and addresses stormwater management at the regional level. One of the project proposals includes funneling water from a 70-acre basin into swales that line three to four blocks. SPU estimates that these swales can absorb all of the basin's water, and the project's larger scale will result in better return for the construction and maintenance costs.

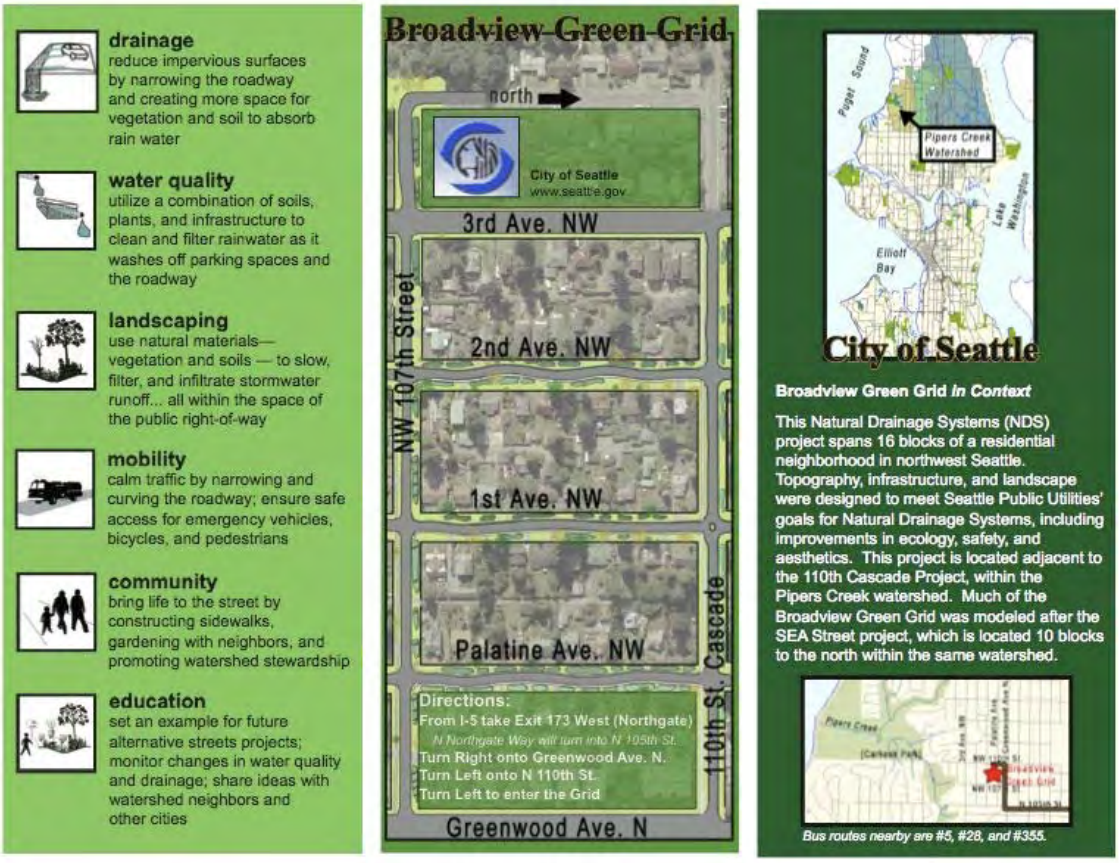


FIGURE 15 BROCHURE OF SEATTLE'S GREEN GRIDS CONCEPTS AND TOOLS

An additional challenge is to create a manual for street improvements. The old Right-Of-Way Improvement Manual, written by DOT, did not include information on design, permitting and maintenance information for sustainable streets. Standardizing this information would streamline participation for and by developers.[22] Until then, grids and streets will continue to be implemented on a case-by-case basis.

In spring 2008, SPU began conducting soil quality tests. Due to the high prevalence of clay soil types, Seattle often has large-scale drainage problems. By filling a four-foot pit with water and monitoring its drainage rate, SPU can better understand how well each soil type and location will drain stormwater and how fast different areas will saturate. Knowing the various drainage rates will help the City plan the location and size of future projects.

BALTIMORE

The City of Baltimore has an *Alley Gating and Greening* application process that neighborhood groups can initiate. This process was established with help from the organization Community Greens. This nonprofit works with neighborhood groups to convert underutilized yards and alleys into shared community green spaces.[23]

Baltimore's *Alley Gating and Greening Ordinance* allows residents to lease their alley from the City and gate it or green it. The fist alley project was completed in June 2008 and is seen as a model to connect neighbors and strengthen social ties within the neighborhood block through the redesign of community space.

To allow for this ordinance, the state of Maryland modified Baltimore's charter, allowing residents to lease alleys from the city without the use of a covenant or easement. The city can re-open the alley to the public if necessary.

It took almost four years for the original applicants to legally gate and green their alley. Yet these efforts have made it much easier for other neighborhoods in Baltimore to follow the alley gating and greening process.

Program: *Alley Gating and Greening Ordinance*

Main Purpose: Allow alleys to be leased and gates, to empower communities and foster development.

Additional objectives: Connect neighbors and strengthen social ties; create a vibrant, safe, and useful community space.

Tools: State and city legislation passed to legalize and streamline process; residents lease alleys from city; no covenant or easement is necessary; city can re-open alley to public if needed

Pilot(s): Luzurne-Glover neighborhood block group and Patterson Park Community Development Corporation and Community Greens

Maintenance: Responsibility of the homeowners

Funding: Funded by each individual group; property owners adjacent to alley responsible for process; some funding sources found in local foundations

Challenges: Formerly was illegal to gate alleys; original city requirement of 100% buy-in from adjacent residents; "takings" claim

HOW THE ORDINANCE WAS DEVELOPED

In 2002, a group of residents contacted the Patterson Park Community Development Corporation (PPCDC), looking for assistance in reclaiming their back alleys, as they were fed up with the crime, dumping and rodent problems. The group became known as the Luzurne-Glover block. About the same time, Community Greens, an organization whose motto is "Shared Parks in Urban Blocks," also contacted the PPCDC, looking for a demonstration project in Baltimore.[24] The Patterson Park CDC put the two groups in touch with each other.

Members of the Luzerne-Glover block first participated in a design charrette, with the assistance of a local non-profit firm, the Neighborhood Design Center. Block members

ended up selecting an alley design that favored green space. The group then applied for a gating permit from the City of Baltimore, even though there was no process in place to receive a permit to do so. The City responded that alley gating is illegal according to the city charter, as alleys are a public right-of-way. The city, however, was willing to grant a rare temporary gating permit.

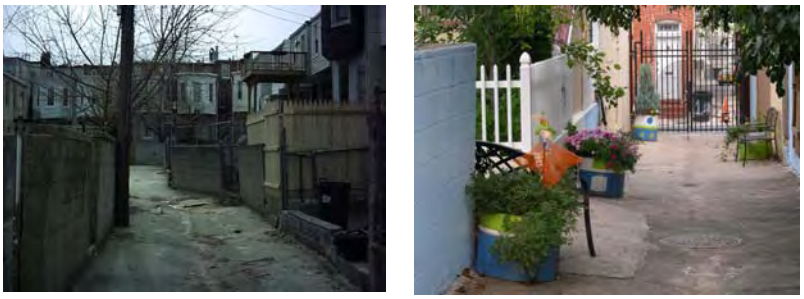


FIGURE 16 LUZERNE-GLOVER ALLEY, BEFORE AND AFTER ITS GATING

To make alley gating a permanent feature of the city charter, Community Greens, the Patterson Park CDC, the Patterson Park Neighborhood Association and the Luzurne-Glover block group enlisted the help of Barbara Bezdek, a University of Maryland law professor. Bezdek ran a law clinic in which her students offered free legal help each semester. The students researched existing laws as well as which entities used and had jurisdiction over alleys.

Their research formed the basis of a formal request to the City, to develop a city ordinance to allow alleys to be gated. This request was denied but the coalition of groups then went to officials in Annapolis, Maryland's capital, to make their case. With support from the Mayor's Department of Neighborhoods and a Baltimore-based state representative, Peter Hammen, who sponsored a bill, the alley group testified before the Environmental Committee of the state legislature and the legislature passed the bill in 2004.[25]

Community Greens then gained the *pro bono* assistance of the law firm Hogan & Hartson. Working with law professor Barbara Bezdek, Hogan & Hartson drafted a city alley gating and leasing ordinance and submitted it to relevant city departments (Transportation, Sanitation, Fire, Police) for review. These departments approved the ordinance. Before all of the approvals could be lined up, however, a local resident from another neighborhood raised an objection, arguing alley closings could be an unconstitutional taking of property. This led to a requirement in the ordinance that 100% of residents adjacent to the alley in question agree to its closure. The Alley group protested, noting that many of the properties are vacant in Baltimore and therefore getting 100% would be extremely difficult. This led the city's attorneys to propose the requirement be that 100% approval is necessary for occupied properties.

FIGURE 17 MAYOR DIXON SIGNS ALLEY GATING AND GREENING ORDINANCE INTO LAW

While the community groups and city legal department were still in disagreement, little progress was made until the next city election. In January of 2007, Baltimore elected Sheila Dixon as Mayor, who had supported the alley closure concept. Soon after her election, the City proposed a draft ordinance that proposed a two-tiered gating and greening program. Property owners adjacent to the alley would need to lease it. The ordinance required that traffic would not be obstructed and that a residential group needed at least 80% of the owners of adjacent occupied properties to agree. If traffic were to be obstructed, the interested party would need 100% of the owners of occupied properties to agree. To ensure all residents on a particular block were aware of the proposed alley gating, the Department of Public Works required a public hearing be held with due advance notice. The City and block residents also have the option of having the gates removed if the residents default on the lease or if 51% or more of them decide the gates should be removed.

In April, 2007, the ordinance passed, and on May 9, 2007, Mayor Dixon signed City Council Bill 05-0034, or the "Alley Gating" bill.[26] According to Community Greens, Dixon was instrumental in getting the ordinance passed.[27]

The Luzerne-Glover block is now fully gated. With alleys cutting through the block in the shape of a combined "F" and "T," four gates were required. The gates used can be opened by each resident, who has a key. The City requires that all gates also have lock boxes for use by the Fire Department. The alleys have a safe feel, and have been beautified by the residents with potted plants, chairs, a barbecue and brightly painted walls. Block parties and neighborhood gatherings are now possible.

FIGURE 18 NEIGHBORHOOD PARTY IN THE CONVERTED LUZERNE-GLOVER ALLEY

CHALLENGES

The first challenge was getting the alley gating passed. Now the challenges relate to primarily to maintenance and funding.

FUNDING AND MAINTENANCE

The Baltimore ordinance states that residents are responsible for maintenance. Should a city utility need to alter any of the alley improvement, they are required to restore it but not liable for compensation. For reasons of maintenance, most alleys have focused on gating, not greening. In the Luzerne-Glover Alley, greening is confined to movable pots and planters boxes. Community Greens, however, is hopeful some alley project will remove concrete and put in proper drainage, sod, or permeable pavers.[28]

Financing is a major issue for those resident associations considering alley gating. Mayor Dixon is supportive but the city ordinance does not provide funding for improvements. Residents currently must bear the entire cost or apply to foundations and other sources of financial support.

RESULTS & FUTURE DIRECTIONS

As of March 2008, 24 residential blocks were going through the application process in 11 different neighborhoods. A multi-step process (see Appendix B) requires dedicated champions among the residents. The first stage of the process contains an early kill provision if the Department of Transportation or Bureau of Sanitation and Solid Waste feel alley gating is infeasible or conflicts with existing plans. Once an application is initially approved by these departments, block residents can then proceed with the more involved application process. To keep residents from getting discouraged, some CDCs facilitate the process by requesting initial approval from DOT and Sanitation for the gating.

Currently, scale is limited to a single city block. Although this makes networks of alleys more difficult, it has helped unify individual blocks and create a stronger sense of community among residents. Community Greens reports that some Luzurne-Glover home owners have lowered their back fences and others are considering moving their fences back, effectively giving up some private property to create more community space.[29]

Baltimore recently convened a meeting to discuss using some of the alley redesign techniques used in Chicago.[30] Baltimore has also created a new sustainability department, which may ramp up greening efforts citywide. Community Greens has hired staff to assist residents and other local community groups to gate and green alleys. They are also working with professors from the University of Maryland and the College of William & Mary to assess the impact of the gating and greening on residents' lives and demands on city services. This analysis will be completed in 2010.

VANCOUVER

Country Lanes aims to reduce impervious surface and increase vegetation. Three pilot projects have been completed and Vancouver's Street Design department is assessing the best design before moving forward with additional projects.

A second program, *Sustainable Streets*, also aims to reduce stormwater flows by increasing permeability, but on a larger scale than Country Lanes. A pilot project on Crown Street uses bioswales, a detention pond, and native landscaping, and is similar in design to Seattle's *Street Edge Alternatives* program.

Program: *Country Lanes, Sustainable Streets*

Main Purposes: Storm water management, salmon habitat, and street beautification

Additional objectives: Manage stormwater, improve natural environment and urban sustainability

Tools: Reduce impervious surface, increase tree and shrub plantings, esp. native species; install bioswales, and landscaping and repaving

Pilot(s): Three Country Lane pilot projects; one sustainable street pilot

Maintenance: City's responsibility; mostly necessary due to poor performance of grid products

Funding: Pilots funded by City and grant from the Federation of Canadian Municipalities; program will be funded by local improvements program

Challenges: Higher cost than standard paving, poor performance of materials, finding residential groups willing and able to fund projects.

HOW THE PROGRAM WAS DEVELOPED

In the early 1990s, a neighbor asked Vancouver homeowner David Defrochers to construct a shared driveway between their adjoining properties. Defrochers was head of the Street Design department in the City of Vancouver at the time and decided that the most ecologically responsible option was to install two strips of concrete for vehicles to drive on and plant grass in between. After completing the project he decided that what is good for driveways might be good for streets and alleys; Vancouver's *Country Lane* program was born.

In Vancouver, improvements to streets are funded through Local Improvement Programs in which block members contribute funds for capital improvements, including street, sidewalk, and lighting maintenance and upgrades. This made a pilot project for the Country Lane program difficult initially as residents were not willing to pay for the street redesign. Unable to find residents to bear all the costs, Defrochers went back to the city council asking them to fund three pilot lanes to test materials and provide evidence of feasibility. The council provided $150,000 for the pilots.[31]

One of the pilots was in East Vancouver where neighbors had previously expressed interest but could not find the funds. Another was a lane that leads up to City Farmer, a school that teaches residents how to be urban farmers. All the pilots sought to minimize hard surfaces and keep maintenance costs to a minimum. Street Design experimented with a number of different methods, including alternating soil and grass with a hard material, usually plastic or concrete grids. Other methods included cast-in-place concrete that uses forms, and roller compacted concrete, which is placed, compacted, and left to dry.

FIGURE 19 GRASSY BIOSWALES HELP ABSORB AND CLEAN RUNOFF

Some of these grids worked better than others. The Street Design team observed hot weather negatively affected the concrete and plastic grids. The concrete absorbed so much heat the nearby grass died off, while the plastic grids would expand and sometimes buckle, creating a rolling, uneven surface.

While completing the pilots, the Street Design team visited Seattle to observe the SEA program (see Seattle section). Impressed, they decided to implement something similar to the Local Improvement Program. Crown Street, a local street in need of repair and adjacent to a park, was an ideal candidate. With two creek crossings, Crown Street was negatively affecting the salmon population in the creek—an important issue for many in the region.

Called the *Sustainable Streets* program, this new Street Design project was funded in part by the City with local improvement funds and in part by a $600,000 grant from the Federation of Canadian Municipalities.[32] Street Design partnered with Sewage and Drainage to design and implement the project.

FIGURE 20 VANCOUVER'S *COUNTRY LANE* USES MINIMAL AMOUNTS OF IMPERMEABLE SURFACE

High-quality features meant that the project was expensive. The meandering road, narrowed from 8.5 meters (28 feet) to 6.7 meters (22 feet), is bordered by granite weirs and reinforced grass.[33] Sidewalks and drainage were shifted to create room for trees and bioswales. The finished street resembles a lush green park.

One month after completion, salmon were returning to the creeks. Water quality and infiltration are being monitored in partnership with the University of British Columbia, which plans to collect measurements for the first five years of the project and then compare the results to a standard street.

CHALLENGES

FUNDING & MAINTENANCE

The primary challenge for Vancouver's programs has been cost. Because the programs were funded by local improvement programs, there was no annual or earmarked budget for new projects. Instead, local residents have had to contribute financially. Although some groups remain interested in the Country Lanes program, cost has become a barrier. The designs of the various pilots are being assessed. It appears that Street Design favors permeable asphalt similar to that used in Chicago (see Chicago section). Permeable asphalt is cheaper to install than strips of concrete, but the department was concerned about the asphalt pores clogging with silt, as Vancouver has significantly more rain than Chicago. When the best design is agreed upon, which may be a combination of several elements, Street Design plans to propose increasing City fund contributions to the programs.

FIGURE 21 VANCOUVER'S PILOT SUSTAINABLE STREET WAS INPIRED BY SEATTLE'S SEA PROGRAM

RESULTS & FUTURE DIRECTIONS

FIGURE 22 THIS COUNTRY LANE PILOT FEATURES CENTER STRIP PAVING

Street Design plans to apply for grants in 2008 and 2009 for further research on the social and environmental benefits of *Country Lanes*. According to Street Design, this research will further justify the projects' high costs.[34] Once a new design is chosen, the city plans to install a new pilot lane to measure cost and performance. Street Design hoped to complete its testing in spring 2008 and begin implementing the new pilot in summer 2008.

IV. CREATING A GREEN ALLEY PROGRAM IN LOS ANGELES

The case studies of four cities — Chicago, Seattle, Baltimore, and Vancouver—provide considerable insight into how the City of Los Angeles might most efficiently develop and effectively deploy its own *Green Alley Program*. Each of the case studies offers lessons, examples and possibilities for Los Angeles to draw upon: Chicago's permeable, high-albedo and recycled pavements; Seattle's bioswales and larger-scale green grids; Baltimore's option to green alleys while maintaining traffic flow through a resident-initiated process; and Vancouver's reduction of paved surfaces and use of grass-filled grids and innovative financing structure. The experiences of these cities reconfirm that it is possible to implement innovative techniques in a large city with a dense, diverse population.

By and large the city programs focus on one aspect of greening or revitalization, whether it is stormwater in Chicago or community building in Baltimore. Los Angeles can do more. By taking the best elements from each city, the City can build a unique alley conversion program that simultaneously addresses the vital issues of stormwater management, open space and recreation, heat-island effect, and community building. In the sections below, we provide an analysis of the lessons learned from the four cities and offer suggestions on what the City Los Angeles should replicate or avoid.

ESTABLISHING A PROCESS

Each of the cities used a different approach to establish the pilots. The Baltimore program was spearheaded by local residents, which drove the legislative changes necessary to legally gate and green alleys. These residents formed an alliance with a local nonprofit, a law firm that donated time, and interested city officials. In contrast, the programs in the other cities were initiated by officials and staff within government. Funds were secured to implement pilot projects. Yet without community support these pilots may not be replicable elsewhere. Seattle's Edge Alternative pilots resulted in a significant reduction in stormwater and yet in part due to their design, support from local residents has been lukewarm.

MEASURING RESULTS

Each case study highlights the importance of assessing the benefits of the pilot projects. This is deemed crucial to expanding the program. Chicago's Green Alleys program was not approved until it had installed a pilot project. Seattle and Vancouver have placed particular emphasis on assessing the benefits. In Los Angeles, assessments are already being done on a stormwater management pilot on Oros Street in East Los Angeles that was initiated by the local nonprofit North East Trees in 2007.[35] The Los Angeles and San Gabriel Rivers Watershed Council's Elmer Avenue project is slated for construction in late 2008 and will likewise be monitored. This project will install stormwater management infrastructure both in the public right-of-way and on private homes along a neighborhood block in the Sun

Valley community of Los Angeles. The experiences at the Oros Street and Elmer Avenue projects could inform development of a Green Alley program for Los Angeles.

FUNDING & MAINTENANCE

All the case studies illustrate the primacy of funding and maintenance and offer a variety of strategies to secure the necessary funds. In Baltimore, funds must come from each block organization but Community Greens is also cultivating a network of foundations and organizations willing to assist the neighborhood groups. Vancouver asks its residents to pay for their *Country Lanes*, though in the form of a Local Improvement Program. This Program collects tax dollars from residents on a block-by-block basis, but allows each block to decide how to spend the funds. This ensures the availability of alley conversion to all neighborhoods, regardless of socio-economic status. These funds are augmented by other sources: the Country Lanes Program received a grant from the Federation of Canadian Municipalities. Numerous grants and funding opportunities are available through state and national organizations and government bodies.

In the context of limited resources, the City of Los Angeles can be creative and look to these case study cities and others for solutions. One funding strategy would be to focus on the multiple benefits of green alleys—stormwater control, habitat restoration, recreation spaces, and neighborhood 'connectors' that encourage non-motorized transport—as a way to tap into a variety of funding sources. Most of the case study city programs focus on only one or two of these benefits, rather than the entire suite of potential benefits.

MAINTENANCE

In addition to funding, maintenance has been a challenge for the other cities. The Seattle programs have relied upon informal agreements with homeowners regarding maintaining planting but many have proved unreliable. Alley redesign schemes must therefore place a community's ability to maintain the new alley, at the heart of any design process (see next section).

ALLEY REDESIGN

The materials used in alley conversion determine both capital and maintenance costs. The Chicago program invested in developing and testing quality materials and reportedly has been able to produce permeable concrete that that is less expensive ($45/cubic yard) than conventional concrete ($50/cubic yard).[36] They were also cognizant that operational costs can quickly outpace capital costs. They developed porous paving materials that could be cleaned with equipment the city already owned. Suction machines used to clean sewage drains, for example, were used on the permeable pavement. The Seattle example provides a reminder that vegetation planted should require little upkeep. In Los Angeles, planting drought-tolerant native species could help reduce this maintenance, following the plants' initial establishment.

POLICY REFORM

Policy changes are required if the City aims to institutionalize the concept of green alleys. First, there is a need to establish a *broad* policy goal: a 'sea change' that involves conceptualizing alleys as vital untapped resources that can yield multiple benefits. Second, there is a need to develop *specific* planning criteria, design guidelines and requirements.One example would be an Alley Overlay Zone to ensure that urban planners, engineers, and other stakeholders who affect alley use incorporate principles of green alleys in their planning, design, and maintenance efforts.

IMMEDIATE STEPS

- *Convene/continue the Green Alley Subcommittee of the Green Streets Committee, making sure to involve all departments with alley jurisdiction and uses.* Even amongst the agencies that have some responsibility for alleys there is limited inter-agency collaboration, which hinders development of policies for alley reuse and design. The Department of Public Works Green Streets Committee offers an opportunity to advance several departments' missions while producing multiple benefits for the city and its residents.

- *Recruit additional supporters.* Extend support to groups interested in converting alleys, including local neighborhood councils, community-based organizations, and local residents living adjacent to or near alleys. Such organizations include umbrella groups, city-wide organizations, and neighborhood nonprofit organizations, many of which have strong environmental and community credentials and are already involved in city policy change.

- *Create an educational brochure and guidebook for alley stakeholders and decision makers*. The Center for Sustainable Cities will produce an educational brochure and guidebook to be distributed to city council members and their staff, as well as other influential city agency staff and community-based organizations. The brochure will introduce the green alley concept, educate stakeholders about the potential of alleys and alley networks as sites for multiple benefits, and solicit feedback that can be used to guide Planning Criteria, Design Guidelines, and Green Alley Overlay Zone models (see below).

SHORT-TERM STEPS (1 TO 3 YEARS)

Support for alley conversion may build quickly or slowly, depending on political will. In either case, there are a number of steps to take in the short term that can further the process and begin addressing some of the policy gaps, such as creating a clear, streamlined process for residents to use in applying for alley revitalization, identifying funding sources, and incorporating alley conversion into existing programs.

- *Develop planning criteria to create green alleys*. Some alleys are more suitable for conversion than others. Factors to consider when assessing suitability include: physical dimensions, current/planned use, influence on walkability/connectivity, neighborhood open-space and park deficits. Based on these factors and others, a second short-term goal should be to develop a 'typology' with criteria that help identify the most suitable alleys for conversion in terms of physical characteristics such as soils, and neighborhood geography. The creation of community plans, transportation and/or street improvement plans, and major (re)development projects would trigger consideration of the plan area's alleys and their potential to become green alleys.

- *Create urban design guidelines to convert alleys.* Urban design guidelines would help all those involved in the green alley design process—planners, street and sanitation engineers, parks and recreation staff, public school leaders, and community residents and businesses—articulate a new vision for specific alleys. This short-term goal seeks to create such design parameters, including paving, street furniture, exercise equipment (such as par courses or fitness zones), landscaping, lighting, signage, and best practices for runoff mitigation.

- *Draft a 'Green Alley Overlay Zone' ordinance to promote alley conversion of existing alleys and multi-benefit development of new alleys.* Overlay zones are an effective tool to promote a richer, multi-purpose urban fabric. These zones can help communities protect natural resources, preserve historic structures and districts, or encourage transit-oriented development. Drafting a Green Alley Overlay Zone ordinance would target city locations where alley conversions would be especially beneficial. This would also smooth the way for motivated neighborhood groups to begin making positive changes in their own alleys, including planting trees, installing porous pavement, and posting educational signage notifying the community of the value of the improvements.

- *Create a resident-initiated alley conversion process.* No established alley conversion program exists in L.A. This report proposes a potential alley conversion process (see Appendix B), but a collaborative effort by city officials and neighborhood and community groups would develop a process agreed upon and supported by all involved parties. This effort should begin shortly, and in conjunction with the passing of the above ordinance.

- *Identify financial resources.* A sustainable flow of financial resources will be needed to develop green alleys throughout the City. Thus a major goal is to change budget priorities related to alleys per se. This includes both public and private (re)development projects that could involve green alleys. Other potential funding sources include water bond monies, Safe, Accessible, Flexible, Efficient Transportation Equity Act (SAFETEA-LU) funds for urban multi-use trails, Safe Routes to School resources, and park funds such as those generated as a result of the state's Quimby parkland set-aside requirements. Financial support might also be found with the Environmental Protection Agency, Green House Gas reduction funds, Propositions O and 84, local conservancies, and the LA Department of Water and Power.

- *Incorporate alley conversion into existing programs and propositions. These include:*

    - The *Integrated Resources Plan (IRPs)* for water, developed by the Department of Public Works Bureau of Sanitation, aims to connect all of the water flows within the City of Los Angeles.[37] There are other IRPS in development, including one for solid waste.
    - The *Integrated Regional Water Management Plan* functions on a larger scale and is attempting to manage water resources within the greater Los Angeles region by integrating stormwater, runoff and wastewater planning.[38]
    - Part of the LA Stormwater Program, the *Water Quality Compliance Master Plan* is in development and will create a strategy for Los Angeles to achieve Clean Water Act standards and comply with runoff regulations and mandates.[39]
    - The *Los Angeles River Revitalization Master Plan* aims to reclaim the river as a site for natural process, recreation, and connection to nature, and includes stormwater cleansing efforts that reach into nearby neighborhoods.

LONG-TERM STEPS (3 TO 6 YEARS)

A permanent policy shift can be facilitated by demonstrating the feasibility and effectiveness of converting individual alleys and networks of alleys into easily accessible spaces for recreation and active living, while at the same time showing multiple additional benefits, including mitigating urban runoff, improving water quality, and recharging groundwater. The long-term goals thus center on using the Wilmington and other pilot projects and an assessment of their success to encourage development of other green alleys. By validating green alley techniques, long-term goals can make alley conversion a standard for development in Los Angeles. In addition, development of management strategies, planning and street engineering criteria, and ways to incorporate green alleys into budgets for regularly-scheduled street network upgrades will be essential to institutionalize a Green Alleys Program. Goals for the next three to six years are:

- *Before/after implications*. Los Angeles should quantify changes in environmental parameters, including runoff infiltration, groundwater recharge, heat-island mitigation, and habitat conservation, through the collection of baseline data before the project and performing monitoring once the project is completed. In addition, changes in physical activity and use of alleys for non-motorized transport associated with the introduction of a green alley should be subject to study. Such studies could also assess the social implications of green alleys -- for example, changes in crime rates, resident satisfaction, and perceptions of safety.

- *Green alley management strategies.* To be successful, green alleys need to be valued by the community. Formally or informally, they need to be managed so they remain safe, attractive, and well-maintained. A long-term goal is to identify alternative community-based management strategies, based on a land trust or other model, to ensure that green alleys remain assets to local residents.

- *Incorporate alley design guidelines into planning and engineering requirements.* Providing incentives and triggers in the building code to support green alley creation will incorporate alley revitalization into developer responsibilities. The recent Los Angeles City Council ordinance requiring large developments to incorporate green building techniques could be expanded to include attractive, multi-beneficial alley projects.[40]

- *Integrate alley conversion into annual street maintenance and upgrade budgets.* Such integration will ensure that resources for green alleys are made available over time throughout the city, and that the idea of streets and alleys as multi-benefit, multi-function public spaces becomes engrained in the everyday budgeting systems of the City.

A PILOT PROJECT: THE WILMINGTON GREEN ALLEY

Wilmington, a polluted, low-income, dense, and park-poor community with high rates of chronic disease and obesity is an ideal location for a pilot green alley. Support for additional open space for Wilmington is strong both at the City level and in Wilmington itself. For example, the East Wilmington Steering Committee for the area's Community Development Block Grant program's "Targeted Neighborhood Initiative-TNI" determined that increasing public open space was the community's highest priority.

The Center for Sustainable Cities and its community partner Trust for Public Land have identified a specific alleyway well-suited for conversion. Located in a residential area (Figure 23), the T-shaped alley is in close proximity to several neighborhood schools, the 6.6-acre East Wilmington Greenbelt Park, and the new East Wilmington Recreation Center. Key benefits include urban runoff management, and habitat linkages that allow a range of native wildlife species to move between the Greenbelt Park and the elementary school. In addition, this location for a green alley demonstration project has other potential benefits, related to physical activity, transportation, and community cohesion.

FIGURE 23 PROPOSED ALLEY CONVERSION IN WILMINGTON

The greenbelt park has basketball courts, a children's play area, and picnic facilities. It is one of a limited number of areas in the community for unstructured physical facilities for children and youth; the recreation center has a gymnasium with basketball facilities and a community/activities room. The green alley site would connect these park and recreation facilities to Wilmington Park Elementary School and surrounding residential blocks, serving as the first link in an green alley network that would allow neighborhood children, youth and adults to walk safely to the park, to schools, and to each other's homes (Figure 24).

Such a network could also link many residents to a major new waterfront recreational open space slated for development. This green alley project thus has the potential to serve as a community connector, linking previously isolated destinations—namely, a school and greenbelt park—thereby increasing possibilities for physical activity and encouraging less automobile use among residents.

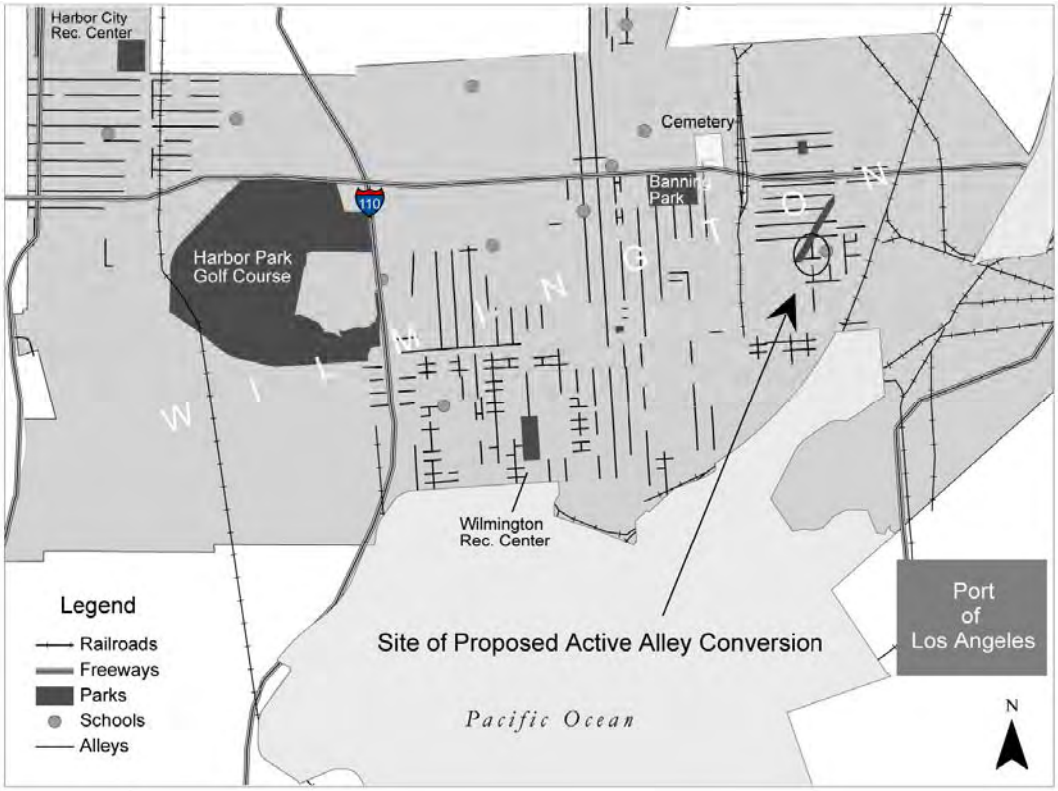


FIGURE 24 ALLEY INFRASTRUCTURE OF WILMINGTON

In the focus group conducted by USC and Trust for Public Land near this alley site, Wilmington residents indicated that parents desire clean, safe, and green alleys to walk their children to school. As one participant said "We use [the alleys] a lot...sometimes we go through them with our kids, on the way to school, and they're really dirty. Sometimes people throw clothes back there, or people throw out sofas…in those alleys, there's a lot of filth there. We try to clean up. We try to paint. We try to make the alleyways better, so we'll feel better about walking through them with our children." Other participants agreed: "We really need some new ideas for the alleys." Their suggestions were to clean the alleys, landscape them, and install lighting and security cameras. As one participant exclaimed: "It would be nice to turn the alleys into green spaces, wouldn't it?"

V. APPENDIXES

APPENDIX A: HOW TO LEAD AN ALLEY REVITALIZATION EVENT

This guide, prepared by TreePeople staff, is adapted from TreePeople's Citizen Forester Manual: A Workbook for the Citizen Forester.

Some of Los Angeles' most overlooked assets can be found in every part of the city: alleys. The city has over 900 linear miles of alleys, and they present opportunities to improve the quality of life in your community. In many Los Angeles neighborhoods, alleys can be transformed to provide multiple benefits to the community, including:

- **Improving watershed health** by preventing flooding and recharging groundwater.
- **Greening the city** through the planting of drought-tolerant trees and shrubs.
- **Reducing the heat-island effect** by removing pavement and providing shade
- **Enhancing neighborhood safety** by creating attractive, adequately lighted, safe play and exercise space, and encouraging neighborhood presence and interaction.
- **Reducing pollution** by keeping alleys clear of trash and debris and preventing chemicals from polluting waterways

The City of Los Angeles has jurisdiction over alleys and must approve any changes or improvements. Nevertheless, with a positive vision and the help of your community, revitalizing a neighborhood alley is possible.

The first step in the process is the selection of an Alley Revitalization Leader Although the conversion effort will involve many members of the community, it helps to have one point person who maintains all records and timelines, has an idea of where the process is at each step, and can delegate tasks to the rest of the Alley Revitalization Team.

PROJECT READINESS CHECKLIST

Take some time to meet your neighbors and request a site visit or review of your project area from the Bureau of Engineering. Determine the following:

- ❑ Are your neighbors interested in an alley revitalization project?
- ❑ Does your neighborhood have too much pavement and not enough plants and trees?
- ❑ Does your neighborhood lack a safe recreation area, open space or a walkway or bikeway?
- ❑ Will the majority of the owners of properties bordering the alley give their OK for the project?
- ❑ Are there at least two other neighbors willing to help you organize an alley revitalization work day?

- ❑ Will your community come out to volunteer on the revitalization work day(s)?
- ❑ Will your neighbors commit to ongoing care of your newly revitalized alley, including caring for trees and plants, and picking up trash?

Depending on the extent of your alley revitalization project, you may need approvals from several City departments. The Bureau of Engineering, part of the City of Los Angeles Department of Public Works, has ultimate jurisdiction on most improvements and its district office will help bring your proposal through the permitting process.

STEPS TO A SUCCESSFUL PROJECT

GET YOUR IDEA OUT THERE

1. TALK TO YOUR NEIGHBORS. Begin canvassing your neighborhood. Introduce yourself and the project. Who is interested? Who supports alley revitalization?

2. FAMILIARIZE YOURSELF WITH WHAT IS POSSIBLE. Can your alley be greened with trees and plants? Can your alley be converted to a pleasant walkway or bikeway? Is your alley a good candidate for stormwater capture using green infrastructure that could include infiltrators and trees?

3. TALK TO YOUR NEIGHBORHOOD COUNCIL AND CITY COUNCIL. Introduce yourself and your project and ask for their support.

LEARN MORE ABOUT YOUR ALLEY

4. IDENTIFY ALLEY STAKEHOLDERS. Who has a stake in the way your alley is treated? Neighbors who live next to it? Children who use it to walk to school? Businesses adjacent to it? Utilities that pick up trash or service power lines? The homeless or other "informal" users? The police?

5. GATHER INFORMATION ABOUT THE ALLEY AND ITS USERS. Collect information about condition, patterns of use, and existing utilities.

6. REQUEST A REVIEW OR SITE VISIT. Once you have a location and a project concept, request an initial review or site visit from the Bureau of Engineering to learn what is possible.

GET YOUR NEIGHBORHOOD INVOLVED

7. NEIGHBORHOOD MEETING. Introduce the project, discuss options for revitalization, answer questions, and get a sense of what your community hopes to see happen. Emphasize the need for community participation in developing the project and in maintaining it after it's completed.

8. CREATE A PROPOSAL. Interpret what you learned at the neighborhood meeting and create a proposal for alley revitalization.

GET YOUR PROJECT FUNDED AND PERMITTED

9. DETERMINE FUNDING SOURCE. How will you fund your project? Community donations? Grants? Private funding?

10. BEGIN CITY PERMITTING PROCESS. Submit your completed proposal to the Bureau of Engineering of the City of Los Angeles Department of Public Works.

11. DISCUSS YOUR PROPOSAL WITH AN INSPECTOR. Discuss your proposal with a Bureau of Engineering inspector to determine if everything can be implemented.

12. RECEIVE AN ALLEY REVITALIZATION PERMIT. At this stage, you will receive final approval for the elements included in your proposal.

PLAN YOUR EVENT

13. DETERMINE COMMUNITY WORK DATE(S). Choose your date(s) and make fliers.

14. PUBLICIZE THE EVENT AND RECRUIT VOLUNTEERS. Make and post fliers. Invite friends, family and neighbors.

15. SCHEDULE A CARE & MONITORING MEETING. Discuss project adoption and plan for the care and monitoring of trees, plants and other project elements.

16. IF PLANTING OR DIGGING, CALL DIG ALERT. If planting trees or digging holes, call Dig Alert (Underground Service Alert of Southern California) to determine the location of underground utility wires and pipes.

17. ORDER MATERIALS AND TOOLS. If planting trees or plants, call local nurseries for price bids. If installing recreational equipment or furniture, shop around and purchase highest quality at lowest price.

18. IF PLANTING, TAG YOUR TREES AND CALL SMALL TREES. Visit your nursery of choice to select healthy, well-formed trees and plants for your project. Call Small Trees, a Los Angeles agency that will approve and tag your selections.

19. IF REPLACING INFRASTRUCTURE, WORK CLOSELY WITH THE CITY. Your project may include ambitious plans to install "green infrastructure" such as permeable pavement, stormwater infiltrators, swales or cisterns. This requires collaboration with city agencies.

20. SOLICIT FOOD DONATIONS. Solicit any final food or money donations for your community event.

REVITALIZING YOUR ALLEY AND KEEPING YOUR NEIGHBORS INVOLVED

21. ALLEY REVITALIZATION EVENT. The big day has arrived!

22. ONGOING CARE AND MONITORING. Continue to keep members of the Alley Revitalization Team (and other members of the community) involved in maintenance. Hold periodic meetings to ensure involvement and ownership of the project.

TIMELINE

It generally takes 6 to 12 months to get your alley revitalized, but it could take longer if your project includes replacement of pavement or installation of underground infrastructure. Keep in mind that if you are applying for a grant, the funding process can carry on for several months. Read through this timeline to get a better understanding of what you can expect.

6 TO 12 MONTHS BEFORE

- Familiarize yourself with the steps included in this guide and the timeline associated with each task.
- Meet your neighbors and evaluate your site.
- Get your neighborhood and city council involved and ask for their support.
- Identify alley stakeholders.
- Collect information about how the alley is used. Information should include:
    - Vehicle use: numbers of vehicles and time of entry and exit
    - Pedestrian and bicycle use: frequency and reason for use
    - Dumping of large or nuisance items: frequency and amount
    - Utilities: what utility infrastructure exists?
    - Trash or recyclables pick-up: frequency and number of receptacles
    - Sewer infrastructure
    - Storm drain infrastructure
    - Pavement: type and extent of paved area
    - Landscaping: existing trees and plants
    - Drainage and flooding: does the alley flood during and after a rainstorm?
    - Parking access: what percentage of residences or businesses access parking through the alley?
    - Policing activity: are there any concerns about alley crime?

- Call your district office of the Bureau of Engineering to request a review of your proposed site and to begin the permitting process.
- Hold a neighborhood meeting. Present information about current alley use and share your vision for the project. Work with community members to create a proposal that reflects their visions.
- Determine funding source(s) and begin grant application process if necessary.
- If your project involves infrastructure replacement or installation, coordinate with appropriate city agencies as specified by Bureau of Engineering.

3 TO 6 MONTHS BEFORE

- Secure alley revitalization permit.
- Schedule alley revitalization work day(s).

2 TO 3 MONTHS BEFORE

- Secure local funding donations.
- Begin planning a post-event completion celebration.
- Publicize your event and recruit volunteers.
- Solicit locally for food and material donations.
- Hold a neighborhood meeting to discuss monitoring and maintenance of the project. Create a maintenance plan and enlist people for the required tasks.

1 MONTH BEFORE

- Call nurseries and other stores to get information on tool and material availability.
- If removing concrete, call concrete cutters to obtain bids and the Department of Transportation to secure “No Parking” signs and barricades.
- If your project involves digging, call Dig Alert to have utilities marked.
- If planting, choose a nursery, select and order trees and plants. Call Small Trees to tag your chosen trees.
- Create and distribute revitalization event flier.
- Recruit volunteers for revitalization event and site preparation.
- Finalize event schedule and arrange speakers for the revitalization day ceremony.
- Secure all food and cash donations.
- Purchase necessary tools for event day(s

1 WEEK BEFORE

- If you’re cutting concrete or removing asphalt, it may be necessary to post “No Parking” signs beforehand. Contact the Department of Transportation to find out.
- Cut and remove concrete or asphalt; water soil to make digging easier; and place barricade or caution tape to secure open areas.
- For event day(s), determine: sources for watering trees and plants; locations for sign-in, task demonstrations, bathrooms and garbage bins.

2 DAYS BEFORE

- If planting, deep water all planting sites.
- Receive delivery of any materials; have volunteers on hand to help unload large items.

1 DAY BEFORE

- Pick up water and refreshments.

AFTER THE EVENT

- Alley Revitalization Team and other community members provide ongoing care and maintenance.

IMPORTANT CONTACTS

CITY OF LOS ANGELES BUREAU OF ENGINEERING

Contact your local Bureau of Engineering district office.

http://eng.lacity.org
CENTRAL DISTRICT
201 N. Figueroa St., 3rd Floor, Los Angeles, CA 90012
Lemuel Paco
Phone: 213 482-7049
Fax: 213 482-7007

HARBOR DISTRICT OFFICE

638 S.Beacon St., Suite 402, San Pedro, CA 90731
Larry Cuaresma
Phone: 310-732-4663
Fax: 310-732-4670

VALLEY DISTRICT OFFICE

6262 Van Nuys Blvd., 2nd Floor, Van Nuys, CA 91401-2615
Mati Laan
Phone: 818-374-4600
Fax: 818-374-4618

WEST LOS ANGELES DISTRICT OFFICE

1828 Sawtelle Blvd., 3rd Floor, Los Angeles, CA 90025-5516
Mike Walters
Phone: 310-575-8381
Fax: 310-575-8631

LOS ANGELES NEIGHBORHOOD COUNCILS

To find your local Neighborhood Council, visit the Department of Neighborhood Empowerment's Web site at www.lacityneighborhoods.com or call (213) 485-1360.

District 1 – Ed Reyes
City Hall Office (213) 473-7001
200 N. Spring Street, Rm 410
Los Angeles, CA 90012
Field office:
Field Rep:

District 2 – Wendy Greuel
City Hall Office (213) 473-7002
200 N. Spring Street, Rm 475
Los Angeles, CA 90012
Field office:
Field Rep:

District 3 – Dennis P. Zine
City Hall Office (213) 473-7003
200 N. Spring Street, Rm 450
Los Angeles, CA 90012
Field office:
Field Rep:

District 4 – Tom LaBonge
City Hall Office (213) 473-7004
200 N. Spring Street, Rm 480
Los Angeles, CA 90012
Field office:
Field Rep:

District 5 – Jack Weiss
City Hall Office (213) 473-7005
200 N. Spring Street, Rm 440
Los Angeles, CA 90012
Field office:
Field Rep:

District 6 – Tony Cardenas
City Hall Office (213) 473-7006
200 N. Spring Street, Rm 435
Los Angeles, CA 90012
Field office:
Field Rep:

District 7 – Alex Padilla
City Hall Office (213) 473-7007
200 N. Spring Street, Rm 465
Los Angeles, CA 90012
Field office:
Field Rep:

District 8 – Bernard Parks
City Hall Office (213) 473-7008
200 N. Spring Street, Rm 460
Los Angeles, CA 90012
Field office:
Field Rep:

District 9 – Jan Perry
City Hall Office (213) 473-7009
200 N. Spring Street, Rm 420
Los Angeles, CA 90012
Field office:
Field Rep:

District 10 – Herb Wesson
City Hall Office (213) 473-7010
200 N. Spring Street, Rm 430
Los Angeles, CA 90012
Field office:
Field Rep:

District 11 – Bill Rosendahl
City Hall Office (213) 485-7011
200 N. Spring Street, Rm 415
Los Angeles, CA 90012
Field office:
Field Rep:

District 12 – Greig Smith
City Hall Office (213) 473-7012
200 N. Spring Street, Rm 405
Los Angeles, CA 90012
Field office:
Field Rep:

District 13 – Eric Garcetti
City Hall Office (213) 473-7013
200 N. Spring Street, Rm 470
Los Angeles, CA 90012
Field office:
Field Rep:

District 14 –Jose Huizar
City Hall Office (213) 473-7014
200 N. Spring Street, Rm 425
Los Angeles, CA 90012
Field office:
Field Rep:

District 15 – Janice Hahn
City Hall Office (213) 473-7015
200 N. Spring Street, Rm 435
Los Angeles, CA 90012
Field office:

DIGALERT - UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

As California continues to grow, so does the buried infrastructure that we depend on Just about anywhere you dig there could be an underground facility lying in wait. How do you avoid hitting it? The easiest way (and the legally required way) is to call Underground Service Alert of Southern California, a.k.a. DigAlert. It's a simple one-call process that will help you avoid the costly error of cutting a fiber optic cable or the hazard of damaging a power line or a gas main. Visit www.digalert.org, or dial 811 from any phone, anywhere nationwide to be connected to the local center.

CONCRETE AND ASPHALT REMOVAL

Pacific Concrete Cutters
3042 Cordua Ct.
Simi Valley, CA 93063
(818) 888-6347 ph
(805) 583-0129 fax
Contact: Jeanne or Rick
License # 689826 D06

Intra Cut
7131 Owensmouth #63
Canoga Park, CA 91303
(818) 702-9785 ph
(818) 778-1895 fax
Contact: Lisa
License #664590

Independent Concrete Cutting
3411 Camino Del Sol
Oxnard, CA 93030
(818) 785-8498 ph
(323) 864-2419 cell
(805) 485-7829 fax
Contact: Kenny Grimm or Mike Kirkendall
License #543268

Boething Treeland Farms
23475 Long Valley Rd.
(818) 883-1222 ph
Woodland Hills, CA 91367
(818) 712-6979 fax
Contact: Mark

Green Thumb
7659 Topanga Cyn. Blvd.
(818) 348-9266 ph
Canoga Park, CA 91304
(818) 348-7699 fax
Contact: Rafael

Valley Crest Tree Co.
13745 Sayre St.
(805) 524-3939 ph
Sylmar, CA 91342
(805) 524-4354 fax
Contact: Bill Long

Norman's Nursery
8665 E Duarte Rd.
(626) 237-0613 ph
San Gabriel, CA 91775
(626) 237-0662 fax
Contact: David Sanchez

Sakaida Nursery
8626 E. Grand Ave.
(626) 285-9981 ph
Rosemead, CA 91770
(626) 285-0870 fax
Contact: Mike

Mejia's Nursery Inc.
2100 Greenwood Ave.
(323) 727-2821 ph
Monterey Park, CA 91754
(323) 727-1100 fax
Contact: Eddie Mejia

APPENDIX B: BALTIMORE'S GATING AND GREENING PROCESS

GATING AND GREENING APPLICATION PROCESS

All applicants must:

1. Submit query to the Department of Public Works (DPW)
    a. DPW forwards the request to Sanitation and Transportation for review (example consideration: can trash be moved to front?)
    b. EARLY KILL PROVISION. If alley gating or greening is deemed infeasible by the City, they may reject the application.

If application passes the early kill provision, the following are required:

2. A statement about how greening or gating will improve health and welfare
3. Written approval from police commissioner and fire marshal
4. A statement that no parking will be lost/ no extra parking will be needed on street (wiggle room: applicant can point to extra street parking, give written consent for loss of parking, etc.)
5. Written consent on form provided by city from all properties that abut alley
    a. 80% for greening (traffic not impeded)
    b. 100% for gating (traffic impeded)
    c. Vacant properties not counted in percentages, but City recommends good faith effort to contact property owners
    d. Affidavit stating attempt to gain consent from those dissenting
6. An application fee of $750
7. Affidavits from person submitting application on behalf of group (under penalty of perjury)

If application looks good to public works thus far, residents must

8. Post notice 10 days before of hearing and mail notification of hearing

DPW gives response within 30 days of hearing

9. Resident group must sign lease with the City

Should applicants default on lease OR should 51% of residents want gates removed, City will take them down.

APPENDIX C: FOCUS GROUP SUMMARIES

PACOIMA

The Pacoima focus group was conducted in spring 2007 by Pacoima Beautiful and USC.

Pacoima, a Los Angeles neighborhood in the northern the San Fernando Valley, has experienced flooding and crime in its alleys. The Pacoima focus group described safety and beauty as primary concerns. Issues include broken glass, tagging, drug use, aggressive drivers and furniture dumping. They suggested better lighting and increased police patrols, gates, and video surveillance to improve safety. In considering possible improvements for their alleys, focus group members cited a need to reduce the conflict between residents and vehicles.

Suggested changes included planting trees and shrubs, putting in benches, tables and trash containers, and installing play equipment and speed bumps to slow traffic. People at the focus group suggested that residents would be willing to take care of a revitalized alley, as it would improve the neighborhood character and their stake in the community.

SUN VALLEY

The Sun Valley focus group was conducted in spring 2007 at the Sun Valley branch of the Los Angeles Public Library by TreePeople and USC.

In Sun Valley, a neighborhood just south of Pacoima, there was consensus among focus group participants that alleys are a concern for themselves, family members and neighbors and that they are unsafe. Alleys seem to attract illicit behavior, according to the group, including drinking, drug use, sex, tagging, sleeping and illegal dumping. Participants reported these acts are often committed by individuals not living in the neighborhood

Participants said they use alleys frequently: to access a garage, to avoid traffic on main streets and to walk to school or stores. Ideas for improvement included: installation of additional lighting; gating of alleys; planting vegetation; establishing recreation spaces; and installing pervious pavement that allows for continued vehicular use. Participants reported a willingness to help with alley maintenance duties.

SOUTH LOS ANGELES

The South Los Angeles focus group was conducted in spring 2007 by USC.

Large and sprawling, the South Los Angeles area stretches from just southwest of downtown west to Inglewood and south to the 105/110 freeway junction. Focus group members reinforced the area's tough reputation, saying that "there is a lot of gang member and drug activity" and that one of them had "seen some guys on these bikes with bandannas and that was really scary to me."[41]

Other concerns included trash and dumping, graffiti, lighting, and stray dogs and cats. Participants had also observed homeless people and other strangers collecting bottles and cans, changing clothes, sleeping, urinating, smoking marijuana, selling drugs, and loitering, all in nearby alleys. Because of this, they said, "We teach the kids to stay away from the alleys."[42]

In envisioning a revitalized alley, safety was one of the primary concerns of focus group members. Suggestions included lights, surveillance, security, increased police presence, and community presence. Space for recreation, including basketball and soccer, was a popular suggestion, but heavy vegetation was vetoed "so [gang members and strangers] cannot hide anything" or "stash stuff in it," according to participants.[43] Although gates were considered, the drawback of limiting police access seemed to unite group members against them.

HOLLYWOOD

The Hollywood focus group was conducted in spring 2007 by USC.

Just south of the Santa Monica Mountains, the Hollywood area is home to many of the City's homeless. Although the focus group there complained less of crime and gang activity than in other areas, participants described multiple incidents of people exposing themselves, homeless persons living in nearby alleys, and human excrement. Residents generally felt safe in alleyways, but were frustrated with the high levels of trash dumping.

The Hollywood focus group was unique in that it had two alleys to compare. The first, and alleyway near to their meeting place, was unconverted, while the second, the Gower Gulch alley, had been gated and greened as part of the city's now-defunct alley gating program. Despite the presence of this improved alley, residents had suggestions for both alleys, including more plantings, shaded benches, flowers, habitat for wildlife, porous surfaces, tables for families, play equipment for kids to "get all their giggles out after dinner," and restrooms.

WILMINGTON

The Wilmington focus group was conducted in spring 2007 by Trust for Public Land and USC.

Wilmington, a neighborhood of Los Angeles adjacent to the port, is a predominantly Hispanic, low-income community. Focus group participants reported that many of them use alleys daily to access their homes and cars, to walk their children to school, and as shortcuts. Most alleys, however, were embarrassingly dirty and trash-filled, they said. "We try to clean up, we try to paint, we try to make the alleyways better…" one woman said, but many conveyed feelings of frustration and abandonment by the city. Potholes, double-parking, urination, graffiti, and dumping were some of their complaints. Very few had ever seen any city services cleaning or repairing neighborhood alleys.

When asked how they would like to improve their alleys, most said that they would like to keep the alleys paved, as they were the main way for accessing their homes, but that greenery and cleanliness would be greatly appreciated; in fact, most participants said they would be happy to help clean the alley once a week, if it were improved. Gates, lighting, security cameras, and potted plants were some of their suggestions. One concern was that too nice of an alley would attract gang activity.

APPENDIX D: BASIC CONTACTS AND RESOURCES

LOS ANGELES

WATERSHED PROTECTION DIVISION

Department of Public Works
Bureau of Sanitation
Department of Watershed Protection
1149 S. Broadway Street, Suite 1000
Los Angeles, CA 90015-2213
p: 213 485-0587
f: 213 485-3939

STREET SERVICES

Department of Public Works
Bureau of Street Services
1149 So. Broadway, Suite 400
Los Angeles, CA 90015
p: 800 996-2489 or 213 473-8410
i: http://www.lacity.org/BOSS/

ENGINEERING

Department of Public Works
Bureau of Engineering
1149 S. Broadway, Suite 700
Los Angeles, CA 90015-2213
p: 213 485-4933
i: http://eng.lacity.org/index.cfm

DWP

Department of Water and Power
111 N. Hope Street
Los Angeles, CA 90012
p: 213 367-4211
f: 213 367-3301
i: http://www.ladwp.com

CHICAGO

Janet Attarian, Streetscape and Sustainable Design, Green Alleys Project Manager
t: (312) 744-5900

SEATTLE

Tanya Treat, Associate Civil Engineer Specialist
t: (206) 615-1636

BALTIMORE

Kate Herrod, Director, Community Greens
t: (703) 527-8300 x224
f: 703-527-8383
e: kherrod@ashoka.org

VANCOUVER

David Defrochers, Manager of Sewers Design
t: (604) 873-7353
Harley Macheilse, Street Design
t: (604) 871-6680
e: harley.machielse@vancouver.ca

WEB LINKS

Oros Green Street Project
http://www.lastormwater.org/siteorg/events/Oros/oros.htm
The River Project: Know Your Watershed, map of LA basin watersheds
http://www.theriverproject.org/know.html
The Los Angeles & San Gabriel Rivers Watershed Council: LA Basin Water Augmentation Study
http://www.lasgrwc.org/WAS.htm
North East Trees: Green Way L.A.
http://www.northeasttrees.org/news/greenwayla.asp
The Los Angeles River Revitalization Master Plan
http://www.lariverrmp.org/
Green Alley Webpage
http://egov.cityofchicago.org/city/webportal/portalContentItemAction.do?blockName=Transportation%2fGreen+Alleys%2fI+Want+To&deptMainCategoryOID=-536883915&channelId=0&programId=0&entityName=Transportation&topChannelName=Dept&contentOID=536946345&Failed_Reason=Invalid+timestamp,+engine+has+been+restarted&contenTypeName=COC_EDITORIAL&com.broadvision.session.new=Yes&Failed_Page=%2fwebportal%2fportalContentItemAction.do&context=dept
Green Alley Handbook
http://egov.cityofchicago.org/webportal/COCWebPortal/COC_EDITORIAL/GreenAlleyHandbook.pdf
Chicago Department of Transportation
http://egov.cityofchicago.org/city/webportal/portalEntityHomeAction.do?entityName=Transportation&entityNameEnumValue=42
Seattle Public Utilities: Street Edge Alternatives
http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/Natural_Drainage_Systems/Street_Edge_Alternatives/index.asp
Seattle Public Utilities: Green Grid Project
http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/Natural_Drainage_Systems/Broadview_Green_Grid_Project/index.asp
Community Greens
http://www.communitygreens.org/
Vancouver Engineering Services: Country Lane and Sustainable Streets Programs
http://www.city.vancouver.bc.ca/engsvcs/streets/design/enviro.htm

VI. REFERENCES

[1] Newell, J, Sister, C., Wolch J., Swift, J, P. Ghaemi, J. Wilson, and T. Longcore. 2008. The Green Vision Plan for 21st Century Southern California. 18. *Creating Parks & Open Space Using Green Visions Planning Toolkit 1.0.* University of Southern California GIS Research Laboratory and Center for Sustainable Cities, Los Angeles, Californnia.

[2] Dillon, David. 1994. Fortress American: More and more of us are living behind locked gates. Planning magazine, *June, 1994*. Retrieved March 27, 2008, from http://www.planning.org/25anniversary/planning/1994jun.htm.

[3] Carolyn Ramsay. 2008. Councilmember LaBonge proposes greening LA's alleyways. Retrieved April 1, 2008, from http://www.tomlabonge.com/news/story/98.

[4] Wilmington Focus Group, May 8, 2007; Pacoima Focus Group, May 15, 2007; South Los Angeles Focus Group, June 9, 2007, Hollywood Focus Group, (No Date); Sun Valley Focus Group, (No Date).

[5] Wilmington Focus Group, May 8, 2007; Pacoima Focus Group, May 15, 2007; South Los Angeles Focus Group, June 9, 2007, Hollywood Focus Group, (No Date); Sun Valley Focus Group, (No Date).

[6] G. Moore, phone interview with Rebecca Drayse, November 27, 2007.

[7] H. Lee, phone interview with Rebecca Drayse, November 27, 2007.

[8] Section 505 of Los Angeles City Code.

[9] W. Tam, phone interview with Edith Ben Horin, November 16 and November 19, 2007

[10] H. Noyes, phone interview with Edith Ben Horin, November 6, 2007

[11] Los Angeles Police Department, Planning and Research, phone interview, October 29, 2007.

[12] Inspector Thuele, phone interview, October 31, 2007.

[13] Saulny, S. (2007, November 26). In Miles of Alleys, Chicago Finds Its Next Environmental Frontier. *The New York Times,* p. A12.

[14] J. Attarian, phone interview, September 19, 2008

[15] J. Attarian, phone interview, September 19, 2008; and

Saulny, S. (2007, November 26). In Miles of Alleys, Chicago Finds Its Next Environmental Frontier. *The New York Times,* p. A12.

[16] Seattle Public Utilities. (2008). *Street Edge Alternatives (SEA Streets) Project*. Retrieved on October 11, 2007, from http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/Natural_Drainage_Systems/Street_Edge_Alternatives/SPU_001805.asp.

[17] Seattle Public Utilities. (2008). *Community Costs and Benefits.* Retrieved on October 11, 2007, from http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/Natural_Drainage_Systems/Street_Edge_Alternatives/COMMUNITY_200406180902084.asp.

[18] Seattle Public Utilities. (2008). *Street Edge Alternatives (SEA Streets) Project*. Retrieved on October 11, 2007, from http://www.seattle.gov/util/About_SPU/Drainage_&_Sewer_System/Natural_Drainage_Systems/Street_Edge_Alternatives/SPU_001805.asp.

[19] T. Treat, phone interview, February 6, 2008.

[20] Ibid.

[21] Ibid.

[22] Ibid.

[23] Mayor Shelia Dixon, Deputy Mayor Andrew Frank, Delegate Peter Hammen, Councilman Jim Kraft, Izzie Patoka, the Patterson Park CDC, Loretta Colvin, Barbara Bezdek probono counsel from the University of Maryland School of Law, Don Lehr probono counsel from the law firm of Hogan & Hartson LLP, Doug Nazarian former probono counsel from the law firm of Hogan & Hartson LLP, the Patterson Park Neighborhood Association, the Reservoir Hill Improvement Council and the Parks & People Foundation;

Community Greens. (2008). *What are Community Greens?* Retrieved on January 22, 2008, from http://www.communitygreens.org/AboutUs/aboutus.htm.

[24] Community Greens website: http://www.communitygreens.org

[25] Maryland State Legislature. (2008). *Article 26 of the Baltimore City Charter: Surveys, Streets, and Highways.* Retrieved on February 21, 2008, from http://cityservices.baltimorecity.gov/charterandcodes/Code/Art%2026%20-%20Streets.pdf.

[26] Baltimore Mayor Sheila Dixon. (2007, May 9). *Mayor Sheila Dixon Signs Alley-Gating Bill; Announce Clean and Green Block Action Plans.* Retrieved on February 21, 2008, from http://www.baltimorecity.gov/news/press/05-09-2007PRESSRELEASEAlleyGating.pdf.

[27] K. Herrod, phone interview, February 20, 2008.

[28] Ibid.

[29] Ibid.

[30] Ibid.

[31] Ibid.

[32] Ibid.

[33] City of Vancouver, Engineering Services. (No Date). *Crown Street: Sustainable Streetscape and Fish Habitat Enhancement Program.* Retrieved on October 26, 2007, from http://www.city.vancouver.bc.ca/engsvcs/streets/design/images/CrownStProjectCompletionReport01_31_06.pdf.

[34] H. Macheilse, phone interview, February 25, 2008.

[35] Oros Green Street, Stormwater Program: http://www.cityofla.org/san/wpd/Siteorg/events/Oros/oros.htm.

[36] Saulny, S. (2007, November 26). In Miles of Alleys, Chicago Finds Its Next Environmental Frontier. *The New York Times,* p. A12.

[37] City of Los Angeles, Department of Public Works, Bureau of Sanitation. (No date). *Integrated Resources Plan*. Retrieved on May 14, 2008, from http://www.lacity.org/san/irp.

[38] Integrated Regional Water Management Plan. (2006). *About Integrated Regional Water Management*. Retrieved on May 14, 2008 from http://www.ladpw.org/wmd/irwmp.

[39] City of Los Angeles, Department of Public Works, Bureau of Sanitation, Stormwater Division. (). *Water Quality Compliance Master Plan.* Retrieved on May 14, 2008 from http://www.lastormwater.org/Siteorg/general/WQCMP/intro.htm.

[40] Roosevelt, M. (April 23, 2008). On Earth Day, L.A. passes a 'green' building law to clean the air. The Los Angeles Times. Retrieved May 5, 2008, from http://www.latimes.com/news/local/orange/la-me-green23apr23,1,3150503.story

[41] Focus Group Member. (2007, July). South Los Angeles Focus Group.

[42] Ibid.

[43] Ibid.