

# DEVELOPING GREEN BUILDING PROGRAMS

A STEP-BY-STEP GUIDE FOR  
LOCAL GOVERNMENTS



## CONTRIBUTORS

Pamela Cepe  
Monica Gilchrist  
Walker Wells

Copy Editor  
Lisa McManigal Delaney

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Global Green USA  
2218 Main Street, 2nd Floor  
Santa Monica, CA 90405  
310-581-2700  
www.globalgreen.org

***A green building program is an innovative and effective way to improve local quality of life and create a more efficient City Hall.***

## Why Build Green?

Conventional building construction, use and demolition, together with the manufacturing of building materials, has multiple impacts on the local, regional, and global environment. In the United States, buildings account for:

- 65% of electricity consumption
- 30% of greenhouse gas emissions
- 30% of raw materials use
- 30% of landfill waste
- 12% of potable water consumption

In addition, numerous studies have shown a correlation between poor indoor air quality and respiratory health problems, leading to reduced productivity and increased absenteeism.

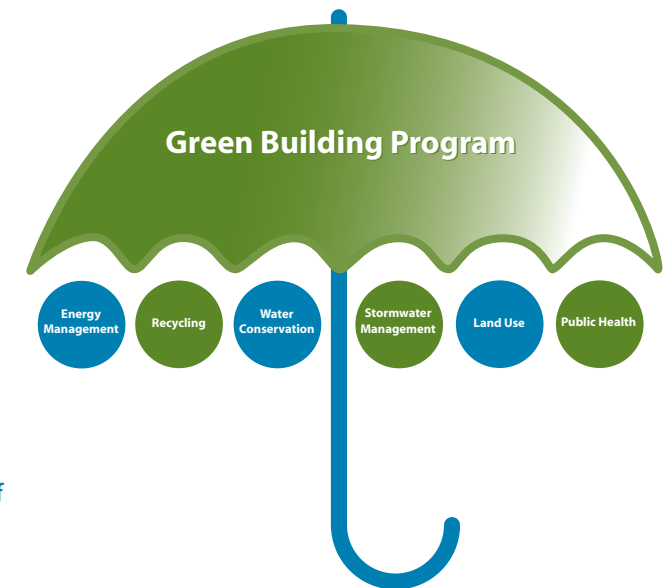
Green building is a proactive way to address these issues by creating buildings that:

- Minimize the use of resources
- Are healthier for people
- Reduce harm to the environment

## The Green Umbrella

A green building program can be the “umbrella” that brings your city’s programs together in a coordinated and streamlined way so that staff are working toward common goals.

Green building is a holistic process that addresses a broad range of issues including community and site design, energy efficiency, water conservation, resource-efficient material selection, indoor environmental quality, construction management, and building maintenance.



A green building program should build on a municipality’s existing efforts in recycling, water conservation, and stormwater management and promote coordination among departmentals. By integrating and enhancing your agency’s existing activities, green building programs stretch local tax dollars and create a more effective and efficient delivery of services.

## Show Environmental Leadership

As awareness of environmental issues continues to grow, being a good steward of the environment plays a major role in attracting progressive businesses and new residents. Establishing a green building program allows your city or county to showcase its environmental leadership and demonstrate that it is contributing to larger efforts to reduce resource consumption and waste generation, improve air and water quality, preserve natural resources, and create sustainable communities.

## Common Green Building Questions

### What are the benefits of green buildings?

Direct financial benefits of green buildings come from lower energy and water bills and the reduced need for maintenance and infrastructure. For example, designing for on-site water retention can lead to downsizing or eliminating storm water conveyance pipes. Indirect benefits of green buildings include improved health of residents and increased productivity of employees. The global benefits of green building include the protection of natural resources and the mitigation of climate change.

### Does it cost more to build green?

A common misperception is that green buildings cost significantly more than conventional buildings. In fact the increased cost for green buildings is typically 5%, depending on the features, building type, and location. In some projects, where green measures are considered early and fully integrated into the building design, there is no increased cost.

### Is it cost effective for the local government to develop and implement a green building program?

Developing and implementing a green building program is a practical and proactive way for your local government to address multiple issues under a common theme or “umbrella”. By linking and augmenting existing efforts and procedures green building adds significant value for relatively low additional cost and without overburdening staff or department budgets.

### Are green building materials hard to find?

A common myth is that green buildings require exotic, hard-to-find products. While a valid concern in the early days of green building, the supply and availability of green materials, such as recycled-content carpet or energy efficient appliances, is no longer a significant issue in most regions. As the demand for green buildings continues to grow rapidly, building material manufacturers are responding by either offering new green products or by improving the environmental performance of well-known product lines. For example, most national paint manufacturers now offer environmentally friendly products that have reduced levels of harmful volatile organic compounds (VOCs).

### Improve Quality of Life

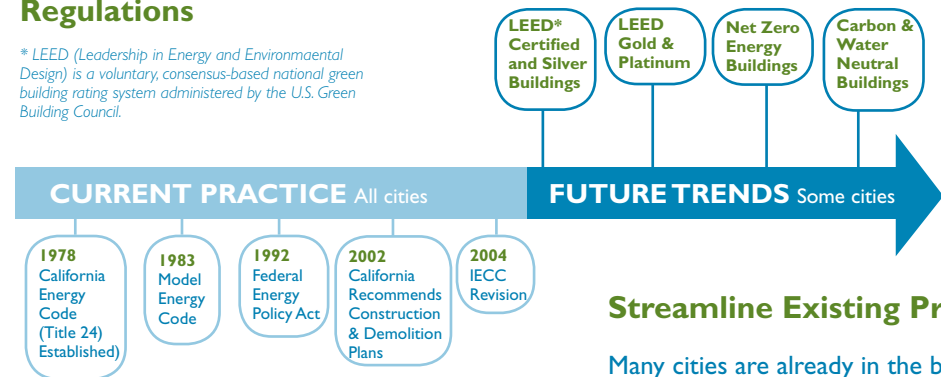
The overall fabric of a community is enhanced when its buildings are constructed in a manner that is respectful of the surrounding built and natural environments. In addition to creating healthier places for people to live and work, green building programs can spark a broader discussion of the city’s sustainability in terms of how it builds buildings, operates infrastructure, and guides land use.

1978 (Title 24), and the establishment of building accessibility requirements by the Americans with Disabilities Act (ADA) in 1990.

Green building expands on these efforts by promoting energy efficiency and use of resource-efficient and healthy materials beyond code requirements, and incorporating products with reduced impact on global resources such as forests and the ozone layer.

### Green Building Related Local, State & Federal Regulations

\* LEED (Leadership in Energy and Environmental Design) is a voluntary, consensus-based national green building rating system administered by the U.S. Green Building Council.



### Stay Ahead of the Curve

Green building programs help cities or counties be proactive in how they plan and permit future development, keeping ahead of changing regulations.

Green building can be seen as the next step in the 100-plus year history of improving building standards to protect the health and safety of occupants. Important milestones include the 1901 New York City Tenement House Law that addressed fire safety and ventilation, the initial seismic standards developed for southern California in response to the 1933 Long Beach earthquake, the inclusion of energy efficiency as part of the California building code in

### Streamline Existing Programs

Many cities are already in the business of environmental protection -- through policies and programs that encourage energy efficiency, recycling, water conservation, open space preservation, and public health protection.

Examples of local policies and programs that relate to green building include:

- General Plan: land use, open space, transportation, and conservation elements
- Zoning Ordinance requirements for items such as parking, refuse enclosures and bicycle storage
- Low-water use landscaping ordinances
- Recycling requirements
- Building and energy codes
- Storm water pollution prevention programs

Other policies and programs that relate to environmental issues can include:

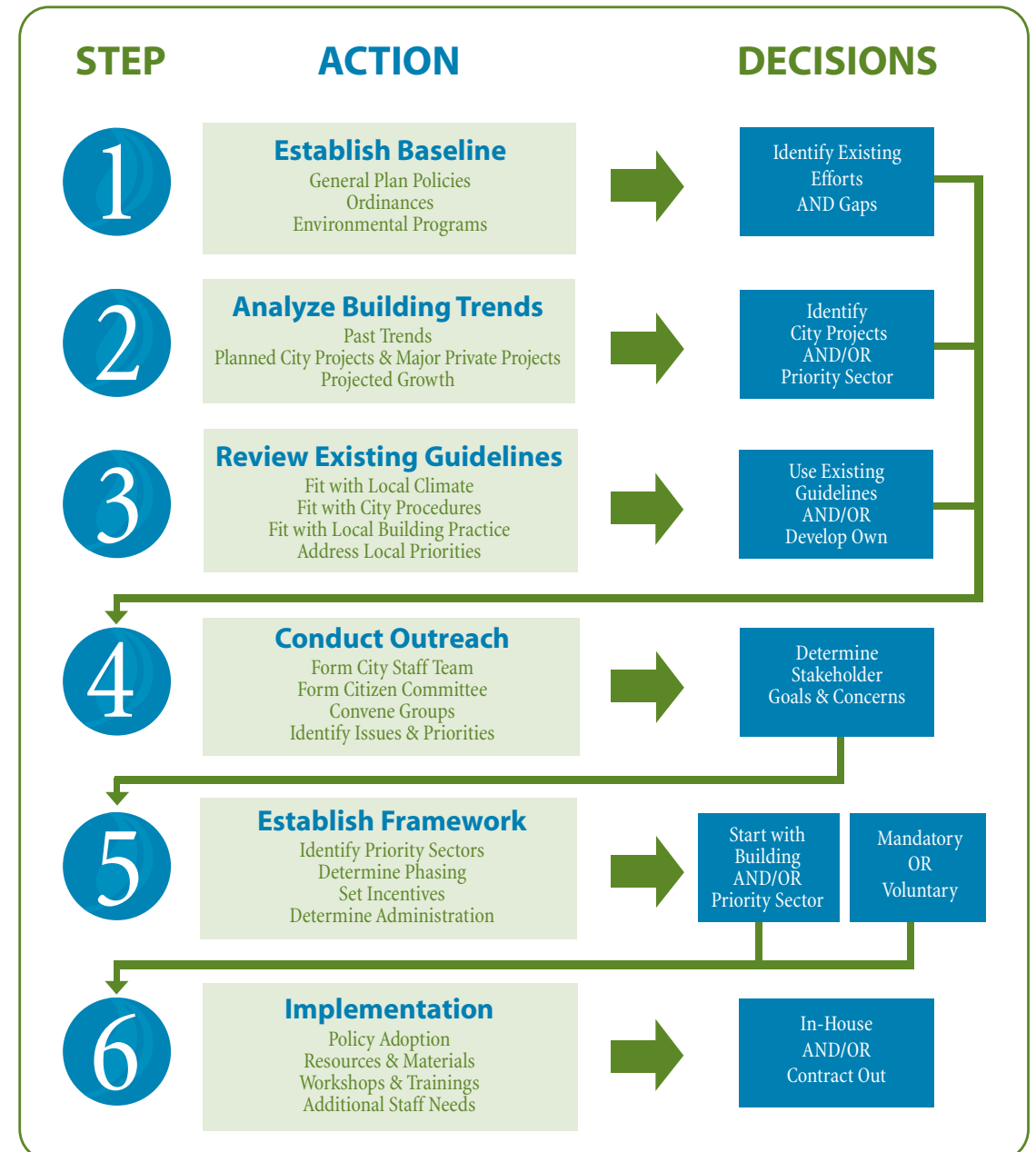
- Transit-Oriented Development Ordinances
- Local carbon dioxide (CO2) reduction commitments like the U.S. Conference of Mayors
- Adoption of U.N. Urban Environmental Accords

Unfortunately, programs often operate in isolation. For example, recycling staff may be unaware of what storm water management staff is trying to accomplish.

This can lead to a lack of coordination and understanding between programs and departments that may actually have the same or intertwining goals. A green building program helps to coordinate these efforts in a more efficient manner.

Green building methods are the future of building and construction regulations. Just as energy and stormwater considerations have been incorporated into building regulations, green building strategies and methods will likely be incorporated into building standards in the near future. Developing a green building program sooner rather than later will allow your municipality to stay ahead of the curve, leading the way towards sustainability rather than being regulated to do so. Developing your own program will also allow you to craft a program that speaks to local issues and concerns, which would likely not be addressed in broad mandates. The image on page 3 shows many of the major policy changes concerning building construction that have occurred over the past 30 years. The continuum also includes the stringent and comprehensive building criteria and building concepts that some cities have already adopted or are exploring.

The development of a green building program should follow a sequence of steps. For each step, specific actions lead to the development of information that enables stakeholders to make critical decisions regarding the purpose, structure, and implementation of the program.



## KEY ISSUES

What general policies already support or are complementary to green building?

What ordinances and regulations relate to green building?

What programs are provided by other utilities or regional agencies?

Where are the gaps?

**Many local policies and programs either support, link to, reward or directly overlap with components of green building.**

Analyzing existing programs and policies provides a context for a green building program and identifies current efforts that can be built on or expanded.

Some examples of green building related policies or programs that may already be in place include:

- General plan policies that support sustainability or resource conservation
- Recycling programs
- State or local energy codes
- Low-water use landscape and irrigation regulations
- Solar easement requirements
- Construction waste management requirements

### Conduct an Inventory

To conduct an inventory, explore areas such as the following:

- Sustainability goals or resolutions
- General Plan elements
- Local ordinances and regulations
- Municipal recycling, water conservation, and stormwater management programs.
- State and local utility efficiency programs, and

Look for instances of policies, programs and practices that support or encourage green-building related measures, such as:

- Incentives for transit-oriented, mixed-use, or compact developments
- Increased energy efficiency through goals or requirements to exceed local or state codes
- Rebates for the use of renewable energy systems such as solar hot water and photovoltaic panels
- Water conservation, efficiency, or reuse programs. This can include low-water use landscape regulations or educational programs on native and drought-tolerant landscapes

- Natural resources conservation, including encouragement of recycling and purchasing recycled products for use in public buildings
- Storm water management requirements
- Urban heat island mitigation through tree planting
- Resolutions to protect the ozone layer, reduce carbon emissions, or promote the use of environmentally preferable products
- Resolutions supporting the use of the precautionary principle – avoiding the use of materials that have a known risk of harming public health or safety.

The City of Pasadena, after reviewing its policies and programs, realized that many green building issues were already addressed to some extent through existing efforts. However, there was little coordination between programs, and a number of green building topics related to global issues such as forestry protection and ozone layer protection were not addressed. By developing a green building program, the City was able to coordinate existing environmental efforts and address the gaps. This process provided Pasadena with the opportunity to streamline and expand on the work already being performed. Once the green building program was in place, the city moved forward adopting the United Nations Urban Environmental Accords, which includes green building programs as a recommended action.

### Examples of Policies, Regulations and Programs

Below are several examples of city policies, regulations or programs that relate to green building goals or practices.

#### POLICY EXAMPLE

##### City of Pasadena General Plan

*Policy 5.6 - Human Values: Future development should reflect concern for the well-being of citizens - for workers, visitors, neighbors and passersby - and should embody the cultural values of the community; it should be accommodating, inspiring, inviting, and enduring.*

*Policy 9.5 - Stewardship of the Natural Environment: Encourage and promote the stewardship of Pasadena's natural environment, including water conservation, clean air, natural open space protection, and recycling. Encourage the use of native, water-conserving, and regionally appropriate landscaping.*

# STEP 1

## INVENTORY EXISTING POLICIES AND PROGRAMS

### ORDINANCE EXAMPLE

**Emporia, Kansas**  
ORDINANCE NO.95-32

**Objectives.** To promote the public health, safety, and general welfare of the citizens of Emporia, this Storm Water Management Ordinance is enacted for the general purpose of assuring the proper balance between the use of land and the environment.

Section 10-74. **Storm Water Management Plan Required.** It shall be the developer's responsibility to submit a storm water management plan, prepared by a licensed professional engineer or architect, to the city engineer in those cases as hereinafter required. The plan shall show that there will not be an increase in the quantity and rates of storm water emanating from the development area except in accordance with an approved storm water management plan as provided in this Article.

### PROGRAM EXAMPLE

**Seattle, Washington Energy Program**  
The utility Seattle City Light offers assistance and incentives that include technical assistance with conducting energy use modeling, and rebates for purchasing energy efficient appliances.

**Rochester, New York Reuse/Recycle Program**  
Rochester's Materials Give Back program returns recycled materials and products to the public free of charge. Leaves are collected at curbside, treated, and turned into compost. Wood is collected and cut for use as firewood, or chipped and returned as wood chips. Holiday trees are chipped and converted into mulch. Excess chipstone, scrap lumber, and buildable fill are recovered and returned. Individuals use these materials for flower gardens, household beautification projects, or other home improvement projects.

# STEP 2

## ANALYZE CURRENT AND PROJECTED BUILDING TYPES

### KEY ISSUES

What is the character of local development?

What has been built in the past 3-5 years?

What private projects are in the development pipeline?

What public projects are expected?

*An effective green building program should be relevant to the types of buildings and construction activity typical to the city, as well as to projected development patterns and activity.*

Once existing policies and programs are identified the next step is to conduct a thorough analysis of your municipalities current and projected building trends.

The analysis should identify the following:

- Historic building trends
- Projected areas of growth and types of development
- Future public sector projects
- Major land owners' or developers' future plans

### Historic Development Trends

It is important to understand the historical context and trends in the City or County's land development. By understanding what factors impacted development in the past, it is possible to determine how and where green building can best influence the future.

Some historical factors to study include:

- Trends in types of buildings that have been built in the past
- Trends, needs and issues that have been determined by policies or agencies, such as the General Plan, Specific Plans, or the redevelopment agency.

### Projected Development Trends

Analyzing past and current development will help to predict what types of environmental impacts your city may experience as a result of construction and ensure that the green building program targets sectors where development will most likely occur: single-family homes, apartments, commercial and municipal buildings.

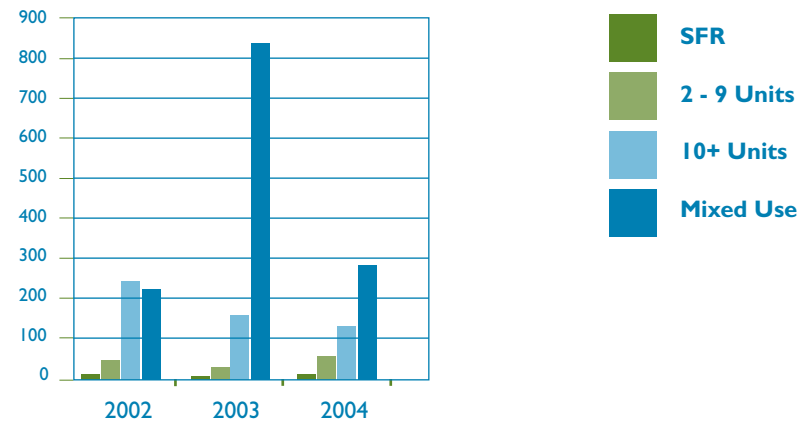
Consider major municipal projects that have been proposed or will be developed. Upcoming municipal projects provide an excellent opportunity to employ green building methods and showcase a city's or counties commitment to sustainability.

High-profile private developments represent an opportunity to incorporate green building methods and reduce related impacts on the surrounding environment. A green building program can help address these impacts and allow both public and private development to serve as showcases of sustainability.

### RESIDENTIAL UNIT COMPARISON

Compare total units between 1) new single family residential, 2) Projects 2-9 units, 3) Projects over 20 units, & 4) Mixed Use Projects

#### SFR - Only 56 New SFR in three years



The City of Irvine, in conducting its analysis, discovered that development had historically been low-density residential, but several recently proposed high-density and mixed-use projects indicate an emerging trend. This led the city to ensure that the green building program addressed both single-family and multi-family construction. Some factors to consider include:

- Current status of available land: infill, former agricultural land, brownfields, etc.
- Building types expected and needed (i.e., multi-family residential, single-family residential, commercial, mixed use, etc.)
- Potential locations of activity

### Existing Review and Permit Process

It is important to understand the steps of the building construction and review process so a green building program and its criteria can be seamlessly integrated with this process.

Some examples of common project review stages are:

- Zoning Conformance Review
- Conditional Use Permit
- Development Agreement
- Building Permit Plan Check
- Certificate of Occupancy

Any additional requirements that a green building program will place on developers should be set into place alongside the existing thresholds and requirements that developers are already familiar with. Builders will better receive a green building program, which does not slow down the building process.

### Summarize Your Analysis

Once a thorough analysis of the development picture is completed, summarize the findings to determine the sector with the greatest projected growth and with the most potential benefit from a green building program.

# STEP 3

## REVIEW EXISTING GUIDELINES AND PROGRAMS

### KEY ISSUES

Are there existing guidelines that can be used “off the shelf”?

Are there existing guidelines that can be modified for local conditions?

Should the city develop its own guidelines?

How will the guidelines fit into the overall program?

### Selecting the right guidelines for your local government is critical.

Green building guidelines are tools to get building professionals, consumers and city officials on the same page in terms of defining green building.

A number of good-quality green building guidelines and programs already exist. Many are time-tested and kept up-to-date by reputable third parties, making them easy for a municipality to adopt without large commitments of time or money. However, local needs may lead a public agency to develop specific local guidelines.

To determine what guidelines are a good fit, it is important to understand the differences between green building guidelines and green building programs. Guidelines serve as informational tools and provide parameters for developers, building professionals, and the general public. Programs enable the implementation of guidelines through technical assistance, incentives, and/or regulations. Generally, there are three types of guidelines:

#### Educational Guidelines

Educational guidelines provide a list of various green building practices and the benefits provided by each. Guidelines usually focus on specific building types such as residential, commercial or multi-family, and describe green building practices as they relate to each building type. No score or relative value is given to the practices. Such guidelines are useful for education, but cannot readily be used as the basis of a green building program.

#### Guidelines with Points

Guidelines with a scoring or rating component allocate points to the green practices.

Some guidelines leave the task of establishing the minimum score needed to officially designate a building as “green” to the individual municipality. In other instances, the scoring thresholds are pre-established, and each city or county must decide if the scoring works in its local context. Target levels can be mandated or encouraged via incentives. Because the scoring structure is already established, such guidelines are easier to adopt as the basis of a program.

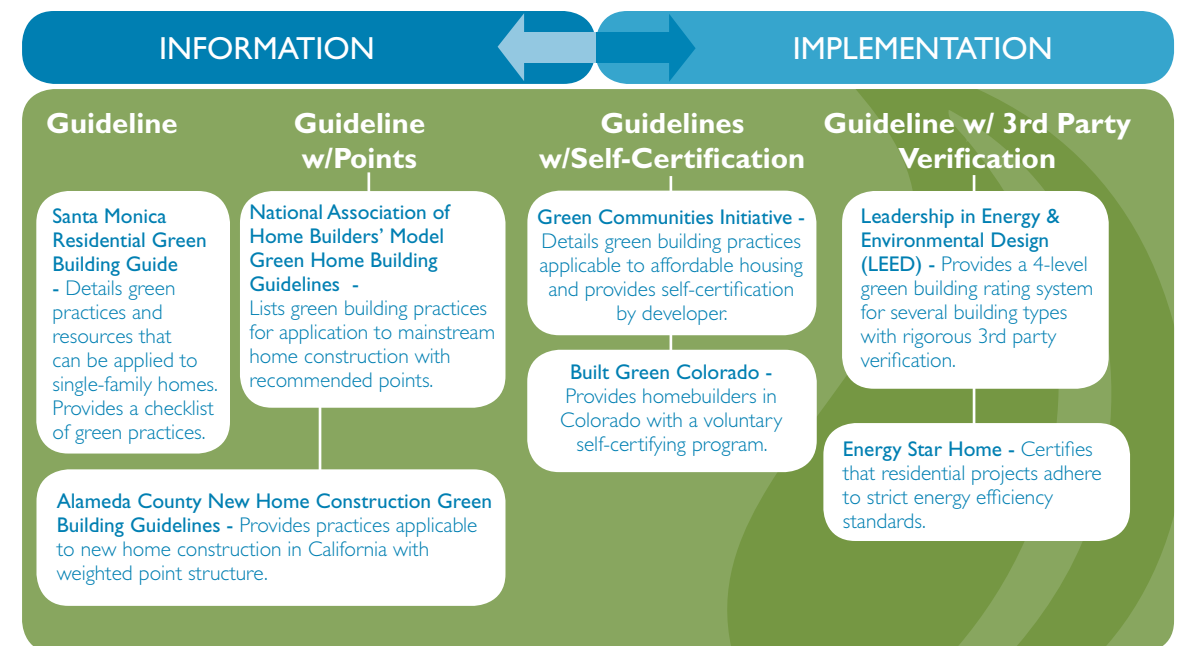
# STEP 3

## REVIEW EXISTING GUIDELINES AND PROGRAMS

### Guidelines with Certification and Verification

The final type of green building guideline includes verification and certification for designating a project as a “green building”. This can be conducted either by the builder, the city or county, or a third party. Such guidelines are typically part of a green building program in which an entity independent of the local government certifies that a building adheres to green standards. Two such entities and their programs are the US Green Building Council’s LEED program, and the US Environmental Protection Agency’s Energy Star Home program.

These programs can be more cost-effective for a local government because they are administered by another organization. Additional benefits include the objectivity of those verifying the project, and the fact that the programs are designed to be applicable to any area of the country, rather than a specific geographic region or climate zone.



## KEY ISSUES

What city departments should be included?

Who are the local architects and contractors?

Who is building in the city?

What organizations should be represented in a green building committee?

What format should be used for the meetings?

### Stakeholders that will be expected to participate in the program need to be involved in the program's development

#### Prepare an Outreach Plan

The outreach process should be a combination of information gathering and idea exchange. This is an opportunity to both educate people on environmental issues and the benefits of green building and listen to their experiences and concerns.

A good outreach effort involves both internal and external stakeholders.

As with the process of creating green buildings, early collaboration generates better results. Engaging in an open dialogue with these stakeholders will enhance the resulting program and give policymakers confidence about the feasibility of the proposed green building program and show that it has the support of the development community.

#### Form the Green Building Team and Green Ribbon Committee

A staff Green Team, composed of city staff members that are developing the program, should meet regularly to discuss how the program would impact various city departments and existing project review and permitting procedures. Representatives from planning, public works, the city manager, and the building department should be included.

### Examples of Stakeholders

#### Internal Stakeholders

- Municipal employees from departments such as planning, environment, building and safety, recycling, waste management, public works, parks and recreation
- City Council and Planning Commissioners
- Staff responsible for designing and constructing municipal projects
- County Board of Supervisors
- City Manager's Office

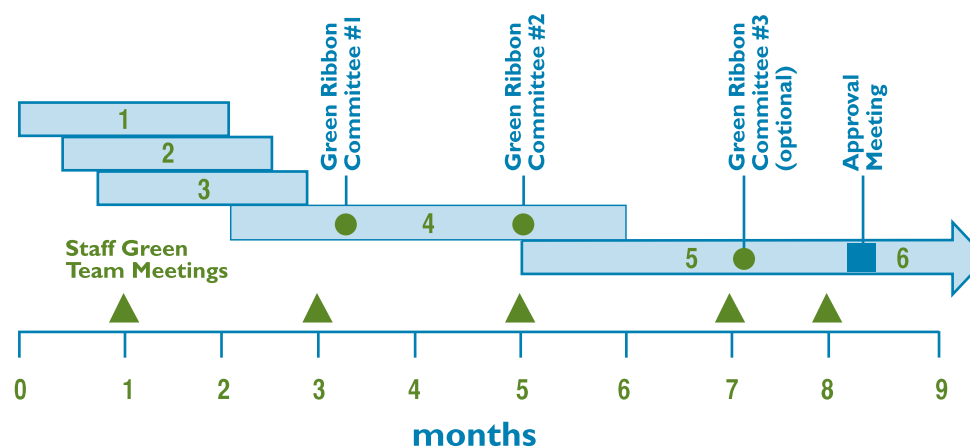
#### External Stakeholders

- Developers of residential and commercial properties
- Local contractors, builders and engineers
- Architects and designers
- Local suppliers of materials
- Local utility staff
- Energy and construction-related consultants
- Residents and property owners
- Local business owners
- Environmental advocates
- Community groups

The Green Ribbon Committee, composed of external stakeholders, should meet at least three times during the program development process. This will increase buy-in by keeping the process open, and by offering opportunities to help shape the green building program through feedback and commentary.

A good example of this outreach approach was used in the City of West Hollywood, California. The City formed both a "Green Building Team" composed of city staff, and a "Green Ribbon Committee" composed of external stakeholders. These two stakeholder groups helped to identify the goals, limitations and priorities of the program that was developed through a series of meetings and facilitated discussions over a nine month period.

### Typical Timeline



### Hold Green Ribbon and Green Team Meetings

#### Green Ribbon Meeting #1: Information Sharing

The first meeting also offers an opportunity to educate those unfamiliar with green building and share information between program developers and stakeholders. Information gleaned from analyzing existing policies, past construction trends, current building types and the format of other guidelines should be presented for discussion. Discussion should focus on critical local environmental issues (i.e. solid waste management, storm water management, energy conservation), current development trends, and approaches utilized by other local governments in establishing green building programs.

# 4

## OUTREACH TO STAKEHOLDERS

### Green Ribbon Meeting #2: Initial Proposals

The second meeting should focus on reviewing a draft version of the green building program and discussing its framework, guidelines, and incentives.



### Green Ribbon Meeting #3: Program Revisions

A third meeting should be held to review any modifications that have occurred to the proposed green building program. A fourth meeting can be held if needed to gain consensus on final details.

It is important to maintain communication with the Green Ribbon Committee, as they will be effective advocates when the program is presented for adoption. For example, Green Ribbon members may want to speak at Planning Commission, City Council, or other public meetings in favor of the program or provide context on program development to elected officials or the media.

### Staff Green Team Meetings

This group should meet as needed in a parallel schedule to the Green Ribbon Committee, to review analysis and public input, develop the proposed program structure, make suggestions on guidelines, and review issues of concern prior to the Green Ribbon Committee meetings.

At a minimum, at least two meetings should be scheduled during Steps 1-3, prior to each Green Ribbon Committee meeting, and at least once during Step 5.

# STEP 5

## DEVELOP GUIDELINES & GREEN BUILDING PROGRAM FRAMEWORK

### KEY ISSUES

**How should the program link to and be consistent with local ordinances, policies and programs?**

**What thresholds for participation should be established?**

**What guidelines should be used?**

**What departments and staff should be responsible?**

**Will the program be mandatory or voluntary?**

### *Setting up the program to reflect local needs and complement existing procedures sets the stage for effective implementation.*

In developing the program framework the issues include what building sectors to target, which guidelines to use, what are the thresholds for participating, incentives, and responsibility for administration.

Input gathered in earlier steps will help you to develop the program structure. For example, if Step 1 shows that there is an established set of ordinances, codes or other policies that relate to green building, these can be the basis of the program framework. If no such structure currently exists, the green building program should be developed independently. Step 2 shows that the majority of projected growth is in the commercial sector, then developing guidelines and incentives for commercial buildings should be prioritized.

Likewise, if stakeholder feedback conducted in Step 4 reveals that area developers have a strong interest in “fast track” permitting versus other incentives, that option should be given highest priority.

### Thresholds

The thresholds should address specific sectors (such as residential, commercial, and institutional) and what sizes of buildings will be mandatory and voluntary. Ideally, these thresholds should be consistent with existing procedures, such as the project size that requires a conditional use permit, a development agreement, or other municipal review and approval.

# STEP 5

## DEVELOP GUIDELINES & GREEN BUILDING PROGRAM FRAMEWORK

### Sample Framework

This chart offers a snapshot of the various elements that should be incorporated into your municipalities green building program, and includes typical thresholds and guidelines for various building types.

BUILDING TYPE	MANDATORY or VOLUNTARY	THRESHOLD	GUIDELINE	REQUIREMENT/ CRITERIA
Municipal Buildings	Mandatory Voluntary	> 5,000 sq. ft. < 5,000 sq. ft.	LEED-NC, EB & CI LEED-NC, EB & CI	LEED Silver Register w/LEED Complete & submit LEED checklist w/building permit
Commercial & Mixed-Use	Mandatory Mandatory	>100,000 sq. ft. >10,000 sq. ft.	LEED-NC, EB & CI LEED-NC & CI	LEED Certified Register w/LEED Complete & submit LEED checklist w/building permit
Multi-Family Residential	Mandatory	> 75 units	LEED-NC or LEED-Home	LEED Certified
Multi-Family Residential	Mandatory	>10 units and 4 stories & above	LEED-NC or LEED-Home	Register w/LEED Complete & submit LEED checklist w/building permit
Multi-Family Residential	Voluntary	4-10 units, 3 stories or less	Energy Star plus locally developed	Verification from a Home Energy Rater (HERS)
Tenant Improvements	Voluntary	>10,000 sq. ft. & requiring building permit	LEED	Register w/LEED Complete & submit LEED checklist w/building permit
Single-Family Residential/New Construction and Remodeling	Voluntary	n/a	Locally Developed Resource Guide	None

### Guidelines

The green building guidelines are the foundation of the program and therefore should be:

- Relevant to local conditions
- Consistent with existing policies and programs
- Compatible with rebates and incentives
- Supported by outreach and education programs

Ideally, existing guidelines can be used, thus shortening the program development period. But, after evaluating existing guidelines in Step 3 and Step 4, you may find that it best suits your city's needs to develop guidelines that address specific local development practices.

### Incentives

With a mandatory approach, incentives are not needed. If the program is voluntary, incentives are a must.

Developers typically view expedited processing as the most valuable incentive. But providing preferential treatment during the permitting process is not always possible due to staffing. More importantly, it is difficult to expedite processing consistently in all departments. Other possible incentives are reduced permit fees, the most common being a waiver of the energy-related review. Other incentives include property tax reductions, density or floor area ratio bonuses,

and parking reductions. Finally, public recognition through awards programs, articles in the local newspaper, and visits to the project by the mayor or other elected officials can be valuable from a marketing perspective, for both the project and for the developer. The heightened attention can increase sales or accelerate the lease-up period.

Providing incentives demonstrate to the public that the city or county is supportive of green building and is actively encouraging the recommended green building practices. Finally, incentives help offset the costs of the learning curve while builders begin to understand the nuances of the program.

### FINANCIAL INCENTIVES

#### State of Maryland Tax Credit

Maryland green building tax credit worth up to 8% of the total construction cost of a building. Buildings must be located in a priority funding area and at least 20,000 square feet. The tax credit uses the U.S. Green Building Council's LEED rating systems (i.e. LEED-NC, LEED-EB, LEED-CS and LEED-CI) as standards.

#### City of Santa Monica Grants

The city of Santa Monica's Green Building Program offers grants for new private sector buildings certified to LEED standards. Grants start at \$20,000 for a LEED-certified building and increase up to \$35,000 for LEED Platinum. All new construction and major renovation projects that fall in the commercial, affordable housing, mixed-use, and multifamily residential categories are eligible.

### Start-Up, Administrative and Marketing Costs

The type and intensity of the program directly impacts implementation costs. For example, the costs for a voluntary program based on existing guidelines will have low start-up costs, low administrative costs, and moderate education and marketing costs. An intensive program, with locally developed mandatory requirements and verification, will have high up-front and administrative costs, but lower marketing costs.

Start-up costs include printing and distributing the guidelines, holding workshops to introduce the program, and training staff. These costs can range from \$5,000 - \$20,000 depending on the type of printing, number of staff to be trained, and number and type of workshops.

Ongoing costs include salaries for current or new staff to support the program, any financial incentives, staff or consultant time to update the guidelines, reprinting, program marketing, and conducting future workshops.

Carefully consider what additional staff or consultants will be required to carry out the work effectively and what the additional staff costs will add up to over time. Ongoing costs can range from \$5,000 - \$10,000 annually for a program with limited staff support to over \$100,000 annually for a program with a dedicated staff person.

Funding the program offers an additional opportunity to gain internal buy-in and support. For example, if the funding comes from different departmental budgets, each department has a vested interest in the success of the program and will stay engaged.

# STEP 5

## DEVELOP GUIDELINES & GREEN BUILDING PROGRAM FRAMEWORK

### GREEN PROJECT EXAMPLES



#### **Municipal - Transit Maintenance Facility, Santa Clarita, CA**

This 11.8-acre project includes bus storage, maintenance facilities and office buildings. The project, which is aiming for LEED certification, uses straw bale insulation for increased energy efficiency and includes a photovoltaic canopy to reduce energy consumption.



#### **Commercial & Mixed-Use – Tricom Building, Pasadena, CA**

The first private sector, privately funded, LEED Silver Certified project in the San Gabriel Valley.

This building receives more than 50% of its electricity from solar power and uses recycled or reused materials throughout. The building is used for offices, warehouse and showroom space.

#### **Residential - Terramor Village, Ladera Ranch, CA**

Terramor Village in Southern California is one the country's largest examples of green residential development. For-sale single-family homes and townhomes built to Energy Star standards. Buyers can opt to increase the "green-ness" of their home through packages of upgrades that offer a selection of green finishes and features to be included in the home.

The following are examples of how guidelines can be applied to common building types:

#### **Municipal Projects**

Over 50 municipalities in the United States have decided to hold themselves to a high standard by adopting the LEED rating system for their own developments. Some examples of public buildings that were built to LEED standards include Santa Clarita's (California) Transit Maintenance Facility, the Scottsdale (Arizona) McDowell Village Senior Center, and the new Seattle City Hall.

#### **Commercial & Mixed-Use**

Most cities initially turn to LEED for private sector commercial and mixed-use projects. However, concerns with the administration and costs of the LEED certification process are often raised. Some local governments encourage projects be built to LEED standards by requiring registration but leaving certification (final verification that the building meets LEED standards) up to the developer. LEED is frequently required for large projects as part of the development agreement and recommended for smaller projects and tenant improvements. Examples of green commercial and mixed-use buildings include the Natural Resources Defense Council offices in Santa Monica, the Genzyme Center in Massachusetts, a Whole Foods Market in Sarasota, FL and the Tricom building in Pasadena.

#### **Residential**

Some examples of green building guidelines that apply to residential construction include Alameda County Waste Management Authority's New Home Green Building Guidelines, Built Green Colorado, Earth Craft, and LEED for Home. Your local government will need to decide if green building guidelines will be mandatory or voluntary for residential construction, and if they will address both new construction and remodeling projects. Green residential projects include custom-built homes, multi-family homes, single-family production, and remodeling.

# STEP 6

## IMPLEMENTATION: ADOPTION, PHASING, & TRAINING

### *A well-developed and thorough implementation plan is critical to program success.*

Implementing the program involves gaining approval from the city council, training and hiring staff, preparing outreach and education materials, and offering workshops and other green building events for the community at large.

A well-developed plan for launching the program includes:

- Adoption
- Phasing of the components
- Training staff
- Providing a source of funding for marketing and incentives
- Preparing for future revisions and improvements.

#### **Program or Policy Adoption**

Gaining support from the local governing body lays the foundation for successful implementation. Conducting a study session to "demystify" green building early in the process can set the stage for a good reception by the city council when it is time to present an ordinance or resolution.

A study session provides time to introduce the council to the language and benefits that green building offers to your city, and to address any concerns prior to requesting approval of a specific ordinance or resolution. This is particularly important for a city council that has not previously dealt with green building issues and may lack familiarity with the topic.

Council support can take the form of a general green building resolution or a specific ordinance. For voluntary measures, clear direction from the city council enables staff to move forward with confidence. For mandatory measures, an ordinance is essential.

#### **Phasing**

The capacity of staff to manage and incorporate the green building program into their workflow is a key to determining when and how each segment of the green building program should be implemented.

Most cities start the program by announcing that an upcoming public project will be built to green standards, then initiating the private sector portion.

#### **Training and Workshops**

When the green building program is ready to be implemented, builders, developers, homeowners, city or county staff, and the general public will need to be trained on any new technologies, methods, materials or processes.

### KEY ISSUES

What existing staff need training?

Are new staff members required?

Who will administer the program?

What is the funding source for the program?

What ongoing resources and support are needed?

From the outset, it is critical that staff be fully prepared to provide guidance on the new program. Training on any new permitting or application review procedures should be a top priority.

Workshops for the general public can offer topics like “Green Building 101” to familiarize people with the terminology and details of green building. Other workshops can delve into the nuances of the green building program and still others can offer specific technical training for designers and builders. These workshops also provide an opportunity to stay connected with the stakeholders and offer assistance in bringing builders up to speed.

In offering workshops, first determine if your city possesses the requisite knowledge in-house, or if there are local resources to assist you. To locate such resources, consult the U.S. Green Building Council’s website (see Appendix); the “Membership” section can help you identify member consultants in your area. Your local utility also may know of consultants knowledgeable about green building.

### Educational Materials

Developing effective educational materials to hand out at the building permit center and other prominent locations is an important part of the marketing strategy. There are many examples of brochures and handouts that can serve as a model. As a growing number of municipalities adopt green building programs; many of them have placed informational materials (as well as guidelines, case studies, and other information) on their websites. Examples include the City of Seattle, WA, the City of Santa Monica, CA, the City of Austin, TX, Arlington County, VA and Sarasota County, FL.

### Marketing the Program

In addition to providing general information about green building and the specific green building program a city has created or adopted, it is important to dedicate time and resources to growing the public perception of the program. Developing and distributing consistent outreach materials to promote the program is an important step in building and maintaining a brand for the program.

Using a consistent name and logo in marketing the program is essential. A good marketing approach is also a communication tool to inform developers about the incentives offered.

The following are examples of local government green building logos:



### Green Building Basics

**Global Green USA – Green Building Resource Center**  
[www.globalgreen.org/gbrc](http://www.globalgreen.org/gbrc)

**US Green Building Council**  
[www.usgbc.org](http://www.usgbc.org)

**GreenerBuildings.Com**  
[www.greenerbuildings.com](http://www.greenerbuildings.com)

**Environmental Building News**  
[www.buildinggreen.com](http://www.buildinggreen.com)

**Healthy Building Network**  
[www.healthybuilding.net](http://www.healthybuilding.net)

**Environmental Design & Construction Magazine**  
[www.edcmag.com](http://www.edcmag.com)

**Green Home Guide**  
[www.greenhomeguide.com](http://www.greenhomeguide.com)

**Rocky Mountain Institute**  
[www.rmi.org](http://www.rmi.org)

**Natural Resources Defense Council**  
[www.nrdc.org/cities](http://www.nrdc.org/cities)

### Tools for Building Green

**Construction Waste Calculator**  
[www.wastematch.org/reuse/calculator.htm](http://www.wastematch.org/reuse/calculator.htm)

**BEES (Building for Environmental & Economic Sustainability)**  
[www.bfrl.nist.gov/oae/software/bees.html](http://www.bfrl.nist.gov/oae/software/bees.html)

**Whole Building Design Guide**[www.wbdg.org](http://www.wbdg.org)**California Integrated Waste Management Board Sustainable Building Tool Kit**[www.ciwmb.ca.gov/GreenBuilding/](http://www.ciwmb.ca.gov/GreenBuilding/)**EarthCraft House**[www.earthcrafthouse.com](http://www.earthcrafthouse.com)**Materials and Products****GreenSpec Directory--BuildingGreen's product directory**[www.buildinggreen.com](http://www.buildinggreen.com)**Environmental Home Center**[www.environmentalhomecenter.com](http://www.environmentalhomecenter.com)**Oikos - Green Building Products and News**[www.oikos.com](http://www.oikos.com)**Energy****U.S. Department of Energy - Energy Efficiency & Renewable Energy**[www.eere.energy.gov/buildings](http://www.eere.energy.gov/buildings)**Home Energy Saver**[www.homeenergysaver.lbl.gov](http://www.homeenergysaver.lbl.gov)**Energy Star**[www.energystar.gov](http://www.energystar.gov)**Leadership in Energy & Environmental Design (LEED)**[www.usgbc.org/LEED](http://www.usgbc.org/LEED)**Alameda County Waste Management Authority**[www.stopwaste.org](http://www.stopwaste.org)**Collaborative for High-Performance Schools (CHPS)**[www.chps.net](http://www.chps.net)**Green Communities Initiative**[www.enterprisefoundation.org/resources/green](http://www.enterprisefoundation.org/resources/green)**Third Party Certified Materials & Products****Forest Stewardship Council**[www.fscus.org](http://www.fscus.org)**GreenGuard**[www.greenguard.org](http://www.greenguard.org)**Green Seal**[www.greenseal.org](http://www.greenseal.org)**Scientific Certification Systems**[www.scscertified.com](http://www.scscertified.com)**US Environmentally Preferable Products Database**[www.epa.gov/opptintr/epp](http://www.epa.gov/opptintr/epp)**Carpet and Rug Institute--CRI**[www.carpet-rug.com](http://www.carpet-rug.com)**California Integrated Waste Management Board Recycled-Content Product Database**[www.ciwmb.ca.gov/rcp](http://www.ciwmb.ca.gov/rcp)**Green Building Case Studies****California Integrated Waste Management Board**[www.ciwmb.ca.gov/GreenBuilding/](http://www.ciwmb.ca.gov/GreenBuilding/)

This website has links to case studies in California (by building type, including schools, public facilities, commercial buildings, etc.) and outside California, as well as links to other websites with case studies.

**American Institute of Architects Top Ten Green Projects**

<http://www.aiaopten.org/hpb/>

Annual selection by AIA's Committee on the Environment of the top projects in terms of resource and energy efficiency and other green design criteria. Winners are profiled online.

**American Institute of Architects Top Ten Green Projects**

<http://www.aiaopten.org/hpb/>

**Affordable Housing Design Advisor**

[www.designadvisor.org](http://www.designadvisor.org)

Resources and in-depth examples of affordable housing, with a section devoted to green affordable housing. Includes projects selected in the annual AIA Show You're Green Awards.

**Municipal Green Building Programs****City of Austin, TX**

[www.ci.austin.tx.us/greenbuilder](http://www.ci.austin.tx.us/greenbuilder)

**City of Santa Monica, CA**

<http://www.greenbuildings.santa-monica.org/>

**City of San Jose, CA**

<http://www.sanjoseca.gov/esd/natural-energy-resources/greenbuilding.htm>

**City of Seattle, WA**

[www.cityofseattle.net/sustainablebuilding/](http://www.cityofseattle.net/sustainablebuilding/)

**City of Scottsdale, AZ**

<http://www.scottsdaleaz.gov/greenbuilding/>

**Greenbuilder.com**

[www.greenbuilder.com/general/BuildingSources.html](http://www.greenbuilder.com/general/BuildingSources.html)

Greenbuilder.com has a list of government green building programs (state, county, city) as well as utility and building industry programs and rating systems.

**ABOUT GLOBAL GREEN USA**

Global Green USA is a national environmental organization addressing three of the greatest challenges facing humanity:

- Stemming global climate change by creating green buildings and cities
- Eliminating weapons of mass destruction that threaten lives and the environment.
- Providing clean, safe drinking water for the 2.4 billion people who lack access to clean water.

Through the Local Government Green Building Initiative, Global Green works in partnership with local governments and other public entities to demonstrate the benefits of green building, outline options for establishing green building programs that protect local quality of life and the environment, provide training for staff and constituents, and encourage the development of incentives for green building projects. Current and past partners include San Mateo County, the Los Angeles Unified School District, the Los Angeles Community College District and the Cities of San Francisco, Los Angeles, Santa Monica, West Hollywood, Santa Clarita, Pasadena, Irvine, and New Orleans.





# DEVELOPING GREEN BUILDING PROGRAMS



A STEP-BY-STEP GUIDE FOR  
LOCAL GOVERNMENTS