

# EPA Technical Assistance for Sustainable Communities: Building Blocks

## Technical Assistance Tool: Sustainable Design + Development

PARK FOREST, IL

April 18-19, 2013

To: John Ostenburg, Mayor  
Tom Mick, Village Manager  
Hildy Kingma, Director of Economic Development and Planning

From: Chris Duerksen, Clarion Associates  
Roger Millar, Smart Growth America

Date: May 7, 2013

Re: Sustainable Code Workshop Summary And Suggested Next Steps As Outcome Of Technical Assistance

### 1. Overview/Background

- The evening public meeting on April 18 was opened by Mayor John Ostenburg, who has been a prime mover for sustainable development initiatives in the village. Attendees included representatives of the village board, planning commission, village staff, and a few citizens—a total of about 25. There appears to be significant support for sustainability measures among citizens who attended evening meeting, including members of the village board and planning commission.
- At the April 19 all-day workshop a working group of about 15 people (including the mayor, planning board members, village staff and village professional consultants, and representatives from the Chicago Metropolitan Agency for Planning and the U.S. EPA) reviewed the recommendations for sustainable code amendments from the SGA/Clarion team. The village manager, Tom Mick, and heads of most of the key village departments such as public works and parks and recreation participated and expressed support for the development code amendments that were discussed by the working group. Notably, the village has signed the U.S. Mayor's Climate Protection Agreement which calls for reduction of greenhouse gas emissions in the village to below 1990 levels.
- Already the community has taken some important strides to promote sustainable development:
  - Purchase and revitalization of the village commercial core
  - Completed the Central Park Wetlands restoration project
  - Created a grant-funded, full-time sustainability coordinator position
  - Adopted a cutting-edge sustainability plan
  - Installed a green roof and solar panels as part of demonstration project at the village-owned Aqua Center
  - Undertook a rain barrel distribution project
  - Made energy efficiency improvements at village buildings including the police department and library
- As Ms. Kingma underscored in pre-meeting discussions with the SGA/Clarion team, development opportunities in Park Forest will be focused largely on redevelopment and infill. The village has acquired numerous commercial and residential properties throughout Park Forest and is already witnessing redevelopment of several parcels (e.g., the Dollar General store in the village center). Other major opportunities for infill include the village-owned site near the Park Forest Metra rapid transit station. The largest tract of undeveloped "greenfield" is the approximately 70-acre former village golf course near Governors State University. However, the village has lost population over the past decade and has a significant number of moderate- and lower income residents. Growth has

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been slow given the recession, and the village manager and some village board members cautioned against making the development review process more difficult.

- The day before the tour with village staff, Chicago experienced a major rain storm which led to serious flooding and stormwater management issues throughout the region. Several main streets in the village were flooded, underscoring the importance of one of the key issues—stormwater management—identified by staff to be addressed in the code audit as discussed below.

### 2. Key Issues Addressed during the Site Visit

There was general agreement on three main topics for further detailed analysis in terms of potential code amendments as discussed below. The village's goals in each of these three areas are discussed in greater detail in the 2012 Growing Green Sustainability Plan.

- Energy Conservation/Alternative Energy—Reduce energy use and increase use of renewable energy sources.
- Stormwater Management and Water Conservation—Address the village's significant stormwater management issues and take steps to promote water conservation.
- Open Space and Green Infrastructure— Continue the village's proud record of providing ample open space and, where possible, utilize "green," non-structural approaches to stormwater management such as bioswales, vegetation protection, and rain gardens in concert with more traditional "gray" infrastructure engineered solutions.

The SGA/Clarion team conducted a detailed audit of the village's zoning and subdivision regulations to determine where amendments should be considered to help implement the village's goals in each of these three general areas. The team's recommendations were offered to the working group in a PowerPoint presentation, which was followed by an in-depth discussion as recounted in the following section.

### 3. Targeted Sustainable Code Issues and Recommendations Discussed during the Workshop

This section summarizes the three key sustainability issues discussed at the Day 2 workshop and recommendations for potential zoning code and other village ordinance amendments. The recommendations are set forth in two categories—priority amendments that should be pursued immediately within the next few months and longer-term revisions that may need more discussion and study before new code language is proposed. In each category, the working group discussed removing barriers in the existing codes, creating incentives, and filling regulatory gaps.

- a. **Energy conservation/renewable energy goals:** Reduce fossil-fuel based energy use and increase use of renewable energy sources such as solar, wind, and geothermal (e.g., ground-source heat pumps).

#### **Priority Amendments/Low-Hanging Fruit**

##### i. Alternative energy facilities

1. The village's zoning and subdivision regulations do not address solar collection systems, small and large-scale wind-energy collection systems (WECS), or geothermal installations (such as ground-source heat pumps) as either accessory or primary uses. Lack of definitions and clear standards will likely slow review and processing of applications for those alternative energy installations (e.g., height and location of solar and wind energy collection

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- systems; ground-source heat pumps often require equipment and underground pipes in setbacks areas).
2. Steps should be taken quickly to add standards for solar and geothermal systems to the zoning ordinance. These typically address issues such as height and location. Many other communities have adopted solar collection systems standards that can be used by the village as models. However, it was the consensus of the working group that standards for WECS, because of their height and other potential impacts, would be a longer-term undertaking.
  3. The village should allow solar energy systems as PRIMARY uses in some zone districts (e.g., industrial). They are currently not contained in any district use lists. Further study is needed regarding WECS regulation as noted above.
  4. The village should specifically add clothes lines to the list of allowed accessory uses in the zoning code and prohibit any homeowner or condominium/cooperative owner association covenants that ban clothes lines when a development is seeking approval through a planned unit development (Section 188-191 of the ZO).<sup>1</sup>
- ii. Nonconforming use/building regulations: Article 4 of the zoning ordinance contains strict rules on expansion of legal non-conforming uses and structures (uses and buildings that do not meet current use, height, setback, etc. regulations). They cannot be added to or enlarged “in any way” unless they are made to be conforming. As experience in Salt Lake City and other communities demonstrates, this can be a roadblock to desired green renovations because the cost of a full upgrade of a site or building to complete conforming status may render the project infeasible. The nonconforming regulations should be amended to allow green renovations of non-conforming uses and structures without having to make a use or structure fully conforming. Park Forest will need to define what is a qualifying green renovation (e.g., addition of alternative energy facilities, installation of a green or cool roof)
  - iii. Bicycle parking regulations: The village currently does not have any requirements for bicycle parking. There was strong support to create an incentive for bicycle parking by allowing a reduction in required off-street parking spaces if a commercial or multi-family residential development provided bicycle racks or lockers. In other communities, a typical incentive is to allow a reduction of one parking space for every 3-4 bicycle parking spaces (often with a maximum credit of 5-10 off-street parking spaces). Many communities now require bicycle racks or lockers in all new multifamily and nonresidential development. A good source for standards relating to bicycle parking is the Association of Pedestrian and Bicycle Professionals (<http://www.apbp.org/>).
  - iv. Energy efficient outdoor lighting standards: The sign, PUD, and parking regulations in the Park Forest zoning code address lighting, but focus mainly on light spillover and pollution, not energy conservation. Studies show that reducing outdoor lighting can result in major energy savings. The village should consider requiring businesses to substantially reduce or turn off outdoor lighting and signage when they are not open for business and to put security lighting on motion-detectors. The village should also explore a comprehensive new approach to energy-saving outdoor lighting such as

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<sup>1</sup> Because the village is a home-rule community, it may have the power to ban such restrictive covenants in any development. Staff should consult with the village attorney for an opinion on this point.

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embodied in the recently published national outdoor lighting code recommended by the professional Illuminating Engineering Society of North America and the Dark Sky Association. Among other things, this model code recommends energy-saving lighting budgets tailored to use types (e.g., commercial, multifamily) and specifies energy-efficient lighting fixture types. Variations have been adopted by Plymouth, MN, and are under consideration in St. Louis County, MO, and Salt Lake City.

- v. Priority parking for alternative fuel vehicles: The village should adopt priority parking provisions for alternative fuel vehicles and consider requiring electric vehicle recharging stations in all large parking lots. Village staff noted that Walgreens has installed electric vehicle recharging stations at an existing store in Park Forest so there is a precedent in the Village.

### ***Longer-Term Priority Amendments (More study/discussion needed)***

- vi. Small- and large-scale wind collection systems: As noted above, the village's zoning ordinance does not address either small- or large-scale wind collection systems (WECS). While it is unlikely that there will be great demand for such systems in Park Forest (due in part because of the lack of strong, continuous wind and the existence of many large trees that would require very tall WECS to be efficient), the village should initiate discussions to determine whether WECS might be allowed in certain locations (e.g., the village staff reports that a large prospective "green-oriented" business desired to install an large-scale WEC). Because of the relatively modest size of most residential lots in Park Forest, it is unlikely that WECS would be feasible from a safety/setback perspective (most ordinances require a WECS to be set back from a property line by a distance at least equal to the height of the WECS). Moreover, to be efficient a small-scale residential WEC would need to be 25-50 feet above any surrounding trees, which would undoubtedly raise aesthetic concerns in many neighborhoods. Nevertheless, in the longer-term, the village should explore WECS. A recent American Planning Association PAS report contains model regulatory provisions the village can study.
- vii. Solar access/orientation: If the village is serious about promoting solar energy, it will eventually have to address the issue of maintaining solar access for solar installations. As discussed at the workshop, a number of communities that have put such protections in place including Laramie, WY, and Boulder, CO, provide a range of approaches Park Forest might consider. For example, Laramie allows a resident who installs a solar collection system to register it with the planning commission. That system is then protected against a certain amount of shadowing by new trees or buildings on an adjacent site. An issue for discussion will be the tradeoff of protecting solar collection systems and the multiple benefits that trees provide (shade that reduces cooling costs, reduction of stormwater runoff). Additionally, as recommended in the Park Forest Sustainability Plan, the village should explore requiring solar orientation of new buildings on larger development sites (such as the former village golf course) where it would fit the scale of existing buildings. Basically, this means the long axis of the building runs east/west to provide more exposure to the sun. This can result in significant solar gain in the winter when the largest amount of fuel is used to heat buildings in the village. Such orientation can also reduce demand for artificial indoor lighting. A good source for potential ordinance language from other communities can be found in the publication Solar Access Law in the United States. Suggested Standards

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- for a Model Statute and Ordinance prepared by Colleen McCann Kettles and available on-line in pdf format.
- viii. Mixed use/transit-oriented (TOD) developments: These developments typically help reduce vehicle miles traveled (VMTs) and associated greenhouse gas emissions by 5-25%. Both the village sustainability plan and downtown plan recommend mixed-use development, and the village strongly supports TOD near its Metra station. However, the village zoning code does not contain any mixed-use or TOD districts, and use restrictions and dimensional standards (setbacks, lot coverage, floor-area ratio, heights, etc.) in its commercial and multi-family zone districts make any kind of more urban, mixed-use development virtually impossible. For example, the impervious cover limit in the C2 zoning district is 80%. The working group and village mayor and trustees in attendance at the workshop strongly supported creating more flexible mixed-use districts for key areas in the community such as downtown, the West Gateway on Sauk Trail, and TOD area, but there was agreement that neighborhood compatibility is a key issue. Other cities that have promoted mixed-use development such as Colorado Springs have also adopted compatibility standards (e.g., building design guidelines, use regulations, enhanced lighting controls, limits on hours of operation of some uses) to ensure that such development does not have an adverse impact on surrounding residential areas. Education will also be important so that neighbors understand the importance of such new development to the community and potential benefits in terms of shopping, restaurants, and village tax revenues. Importantly, an increasing number of cities have preserved key sites near transit stops for higher density mixed-use developments, and some such as Charlotte, NC, Aurora, CO, and Salt Lake City, UT, have even required minimum densities and building height (e.g., two-five stories) in these areas.
  - ix. Live-work units: Live/work units--incidental residential units attached to businesses and allowed in commercial, office, and industrial areas--are becoming increasingly popular. They help small business people (artists, personal services, restaurants, etc.) both from a financial and work perspective while bringing 24-hour presence to commercial areas and reducing vehicle miles traveled among other benefits. Many communities allow (Chicago, Oakland, Seattle), but this use type is not addressed in the Park Forest zoning code (although there are live-work units in Legacy Square project in downtown Park Forest). It should be defined and added to appropriate district use lists.
  - x. Cool roofs: An increasing number of cities are creating incentives for or requiring buildings to be covered with cool roofs (i.e., white roofs with high reflectivity). New York City now requires all new buildings to have 75% of their roof area covered with a reflective, white coating. Studies show that with a very low initial cost differential from standard roofing, cool roofs can realize a payback in literally a few months and result in substantial energy savings over their lifetime by reducing use of air conditioning. Neither the village zoning code or building code mention cool roofs. Further discussion should be undertaken with developers, architects, and others in the construction industry to ascertain whether cool roofs should be encouraged or required by the zoning or building code.
  - xi. Parking lot landscaping: (See the following section on Stormwater Management.)
  - xii. Green roofs: (See the following section on Stormwater Management.)

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**b. Stormwater Management and Water Conservation:** Stormwater management is a major issue in Park Forest. The recent torrential rains that fell the day before the workshop vividly illustrated the challenges the village faces to control stormwater and reduce its adverse impacts on the community. Many village streets were temporarily flooded and serious erosion occurred throughout the community. The village currently operates under the stormwater management regulations of Will County, which apparently are not state-of-the-art. Cook County and the State of Illinois are reportedly close to adopting new stormwater management standards that reflect more modern best management practices. In the meantime, the village should consider a number of amendments to its zoning and subdivision regulations as set forth below to make clear that “green” alternative stormwater management techniques such as permeable pavement are allowed. The Water Quality Scorecard (published by the U.S. EPA Sustainable Communities Office) which was circulated at the workshop and is available on-line, provides a comprehensive list of potential green infrastructure techniques.<sup>2</sup>

### ***Priority Amendments/Low-Hanging Fruit***

- i. Off-street parking requirements: The current off-street parking regulations in the zoning code for commercial development are some of the most demanding that the SGA/Clarion team has seen in development codes across the U.S. For example, while Article VI of the zoning code allows some flexibility in meeting off-street parking requirements through techniques such as shared parking, it requires one space per 175 square feet. Many communities require only 1/300 or 400 square feet. Moreover, an increasing number of jurisdictions allow adjacent on-street parking on the same side of the street to be counted against off-street requirements. Excessive off-street parking results in more pavement, more runoff, and less compact, walkable development. The village should also consider maximum parking limits to ensure that any future large-scale projects do not provide parking far in excess of what is necessitated by a new development. Many local governments impose a 110-125% maximum limit over the minimum off-street standards. An increasing number of jurisdictions such as Duluth, MN, grant an automatic reduction in off-street parking spaces of from 15-30% for projects within walking distance of a bus rapid transit stop or rail mass transit station.
- ii. Parking lot landscaping: Park Forest is one of the few communities of similar stature and size that does not require perimeter and interior parking lot landscaping through clear standards in its zoning ordinance. Not only would such landscaping help create a more attractive atmosphere throughout the village, it would also help reduce stormwater runoff and ameliorate the urban heat island effect associated with acres of unshaded parking lots. Other communities in the Chicago region such as Evanston, Lake County, and Schaumburg have parking lot landscaping requirements that can serve as models. This issue could be on the short-term priority list, but some in the working group felt it needed to be part of the discussion on implementation of green infrastructure techniques such as green roofs and street-side swales/rain gardens. In

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<sup>2</sup> The village’s sustainability plan cites water supply and conservation as a significant issue. However, on further discussion with village staff and working group members, it appears that the village has adequate water supplies and that water conservation is not a major issue. For example, few developments reportedly use landscape irrigation systems which can consume significant amounts of energy—rainfall provides adequate water for lawns and vegetation in most instances.



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this discussion, the village should consider allowing or requiring parking lot landscaping to be depressed below grade so that it can accept some stormwater, thus reducing runoff.

### ***Longer-Term Priority Amendments (More study/discussion needed)***

- iii. Pervious pavement and green roofs: The zoning and subdivision codes do not appear to contemplate the use of green infrastructure techniques as part of a development site's stormwater management plan. For example, Section 94-41 of the subdivision regulations requires a "system" of pipes, tiles, inlets, and manholes. Green infrastructure techniques such as permeable pavement are not mentioned. Similarly, there is no mention of green roofs anywhere in either code, and Section 118-279 of the zoning ordinance requires bituminous surfaces in parking lots and streets. Section 118-276(c) of the zoning ordinance requires that surface water accumulation be disposed of by an approved stormwater drainage system "connected to a public drainageway," a standard that would appear to prohibit rain gardens and bioswales.

Many communities have revamped their codes to encourage green infrastructure techniques. Portland has led the way with density and height bonuses for installation of green roofs in business districts and also gives stormwater fee rebates. San Francisco has expedited permit program for green roof development. Chicago now requires green roofs for all new buildings in downtown. Workshop attendees noted that there is significant resistance to green roofs by developers who worry about the weight on buildings from storing stormwater on a roof. More education is needed to inform the development community of the variety of modern green roofs and building techniques that reduce any potential problems. Questions were also raised about permeable pavement, particularly the issue of maintenance. The consensus of the working group was to initiate a discussion with experts from the U.S. EPA regional office and local development practitioners and stormwater professionals to determine whether techniques such as permeable pavements and green roofs should be encouraged in Park Forest, in what circumstances, and potential standards for installation and maintenance.

- iv. Green infrastructure street standards: There are no provisions in the subdivision regulations addressing green infrastructure, notably for streets. We recommend that the village study adoption of subdivision, street, and parking lot pavement and landscaping standards that will allow and promote the use of green infrastructure (e.g., stormwater infiltration inlets for landscaping, street-side bioswales, etc.).
- c. **Open Space/Green Infrastructure Goals**: Park Forest has a long and proud history of providing both passive and active open space for its residents. Moreover, the community is laced with and surrounded by acres of open space as part of the Will and Cook County Forest Preserve Districts. The village is committed to continuing to provide appropriate open space for its citizens. This open space can also serve an important function in allowing infiltration of stormwater. Similarly, the village has a tremendous canopy of mature, beautiful trees. These trees not only add immensely to the village's character and attractiveness, but also absorb greenhouse gases and reduce stormwater runoff.

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## **Priority Amendments/Low-Hanging Fruit**

- i. **Open space set aside requirements:** Currently the village requires new subdivisions to set aside 10 acres per 1,000 residents in a new development for use of its residents or a proportional fraction thereof. While this standard might be kept in place for potential new development on the former village golf course, it is excessive for any new infill and mixed-use compact development in the village core or near the Metra Station. Rather, the village should consider adopting a parallel set of “urban” open space amenity standards as used in other developed, mature communities that are trying to promote redevelopment and infill. These parallel standards are tailored to an urban context and allow, for example, substitution of amenities like landscaped courtyards for acres of open space. Similarly, community gardens and green roofs might be allowed to count as open space.
- ii. **Tree protection:** Another key recommendation in this arena relates to tree protection. The zoning ordinance currently requires the planting of street trees, but offers no protection for mature trees on private property. We suggest the village consider new standards in its zoning ordinance to protect existing trees when new development on site occurs. The tree protection regulations in the zoning ordinance of Clayton, Missouri, a progressive suburb of St. Louis might serve as a model for the village to consider. It requires developers to protect existing trees to the maximum extent feasible and install fencing to protect mature trees during construction. Recognizing that not all trees can always be protected on infill and redevelopment sites, as an alternative the Clayton ordinance permits replacement on a caliper inch for caliper inch basis any trees removed (or payment into a city tree planting fund).

## **4. Implementation Strategy**

The working group spent the last half of the afternoon session discussing implementation strategies. The village has a running start on implementation having already enlisted the assistance of staff from the Chicago Metropolitan Agency for Planning (CMAP) to update its development codes. We recommend that to assist CMAP staff in this important next step that the village convene a technical advisory committee (TAC). The TAC would be built on the working group that was made up largely of village staff and its consultants. We suggest adding representatives from the business community (e.g., realtors, development consultants, business owners), neighborhood organizations, and conservation groups. Ideally, the new members would have some working knowledge of the village’s current development codes and review processes. The TAC would meet periodically with village planning and CMAP staff and the village sustainability coordinator to review drafts of proposed code amendments.

To further inform the code revision process, the village should convene focus groups (e.g., with solar system installers, real estate development community, neighborhood and conservation group representatives) to meet with village and CMAP staff and the TAC to solicit input on specific priority issues such as small-scale solar, WECS, green and cool roofs, and green infrastructure (such as pervious pavement). There was agreement that it will also be important to use web-based tools to inform and involve the general public in this effort as many households—particularly those with children or who have long job commutes—find it difficult to attend public meetings to provide input.



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Given the economic situation in the region and village, members of the village board and working group expressed concern about new regulations that might impede needed development and growth. The consensus was to focus on removing regulatory barriers and providing incentives for sustainable development whenever possible to achieve village sustainability goals. The working group discussed examples such as reducing excessive off-street parking requirements in exchange for additional landscaping and green infrastructure in parking lots or height bonuses in the downtown and TOD areas for green roofs.

The village also has a powerful potential incentive to offer for added sustainability features in new development—the ability to offer reduced price land it owns in key development locations such as downtown. However, based on experience in other communities, the village should try to make the procedure of providing such incentives as clear as possible rather than negotiating tradeoffs from scratch with each new prospect—which can create a great deal of uncertainty and delay in the approval process and cause developers to shy away. In this regard, we suggest the village attempt to create a menu of compensating public sustainability benefits (such as installation of green roofs or solar collection systems) ahead of time to guide such negotiations. Henderson, Nevada, and other communities have adopted processes that might serve as a prototype in this regard (See Section 19.7.11 of the Henderson Development Code available on the internet.)