

# Technical Assistance for Sustainable Communities: Building Blocks

## Technical Assistance Tool: Sustainable Design + Development

Blue Springs, MO

September 19-20, 2013

To: Scott Allen, Planning Director  
Jim Holley, Asst. Planning Director  
From: Chris Duerksen, Clarion Associates  
Roger Millar, Smart Growth America  
Date: October 16, 2013  
Re: Sustainable Code Workshop Summary And Suggested Next Steps As Outcome Of Technical Assistance

### 1. Overview/Background

- The evening public meeting on September 19 was opened by Planning Director Scott Allen. Attendees included a representative from the Jackson County Health Department, a Blue Springs planning commissioner, and a few citizens—a total of about 8. According to Mr. Allen, most of the citizens who attended had not previously been involved in the city's current comprehensive plan effort or land use issues generally.
- At the September 20 all-day workshop a working group of about 15 people (including one council member, one planning commission member, city staff and professional consultants, and representatives from Mid-America Council of Governments and HUD, state agencies, and surrounding municipalities, one developer, and the U.S. EPA) reviewed the recommendations for sustainable code amendments from the SGA/Clarion team.
- Already the community has taken some initial strides to promote sustainable development such as using planned unit development approvals, parkway plans, and a healthy communities initiative.
- As Mr. Allen pointed out during the pre-meeting tour with SGA/Clarion staff, future growth in Blue Springs will likely be a combination of infill and redevelopment (e.g., in the small downtown and around the planned mass transit station) and greenfield sites on the periphery of the community. The city is projected to continue to grow from approximately 53,000 people today to approximately 56,500 by 2020, an annual growth rate of around 1 percent. Total population growth since 2000 has been about 10.3%.

### 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.

- Energy Conservation/Alternative Energy—Reduce energy use and increase use of renewable energy sources.
- Stormwater Management and Green Infrastructure—Address the city's significant stormwater management issues and take steps to promote better water quality. 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.
- Health/Safety—Promote improved health and safety of city residents.

The SGA/Clarion team conducted a detailed audit of the city's unified development code (UDC-- found in Section IV of the Blue Springs Municipal Code) to determine where amendments should be considered to help

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implement the city's goals in each of these three 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 UDC and other municipal code 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/Alternative Energy:** 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 UDC does not address solar collection systems 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 systems; ground-source heat pumps often require equipment and underground pipes in setback 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 city as models. MARC has also published a very useful manual on solar energy systems that includes model zoning code provisions.
3. The city 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 city should specifically add clothes lines to the list of allowed accessory uses in the UD 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 403.1400 the UDC) or planned residential overlay district (Section 404.220).
5. The UDC currently contains standards governing wind energy collection systems (WECS) in the form of "micro-turbines." The current standards in Section 405.020 are quite restrictive, particularly with regard to height—restricted to 60 feet or the maximum allowed in the applicable zone district. Not surprisingly, only one property owner has erected small-scale WECS in an industrial area. The city should reexamine these standards and review model code provisions provided by the American Planning Association in a recent publication entitled

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Planning For Wind Energy (Planning Advisory Service Report No. 566 which Clarion helped draft) if it desires to promote small-scale WECS.

- ii. Energy efficient outdoor lighting standards: The Blue Springs UDC addresses outdoor lighting, but focuses mainly on light spillover and pollution, not energy conservation. Studies show that reducing outdoor lighting can result in major energy savings. The city 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 city should also explore a comprehensive new approach to energy-saving outdoor lighting such as 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.
- iii. 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 city 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 UDC or building code.
- iv. Priority parking for alternative fuel vehicles: The city should explore adopting priority parking provisions for alternative fuel vehicles and consider requiring electric vehicle recharging stations in all large parking lots.

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

- v. Nonconforming use/building regulations: Chapter 409 of the UDC contains relatively strict rules on expansion of legal non-conforming uses and structures (uses and buildings that do not meet current use, height, setback, etc. regulations). These rules, while not as strict as those of some other cities, are still quite limiting. For example, no new structures can be added to a nonconforming use. 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. Blue Springs will need to define what is a qualifying green renovation (e.g., addition of alternative energy facilities, installation of a green or cool roof)
- vi. Promote mixed use/transit-oriented developments (TOD): These developments typically help reduce vehicle miles traveled (VMTs) and associated greenhouse gas emissions by 5-25%. The UDC contains an innovative mixed-use district, but staff reported it has never been used. The UDC does not have a special TOD district. The UDC does not allow residential in any non-residential zone districts except through the

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mixed-use overlay district (Section 404.230). The PUD regulations do not allow residential in non-residential PUDs if not permitted in the underlying zone district—and most of the UDC non-residential districts do not allow residential units. The PUD regulations do allow office/retail in residential PUDs to support residents, but not residential in non-residential PUDs if the underlying base zone district does not allow residential—which none do. Notably, Kansas City, MO, allows mixed use throughout the community in all commercial districts and residential in some neighborhood-serving retail districts. The city should recognize that neighborhood compatibility will likely be a key issue if new mixed-use developments are proposed. 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 city 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.

- vii. Green roofs: (See the following section on Stormwater Management.)
- viii. Solar access/orientation: If the city 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 Blue Springs 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, the city should explore requiring solar orientation of new buildings on larger development sites (such as the former city 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 city. 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 for a Model Statute and Ordinance prepared by Colleen McCann Kettles and available online in pdf format.

**b. Stormwater Management and Green Infrastructure:** Stormwater management and water quality are major issues in Blue Springs. The State of Missouri has served notice on the city that its stormwater management standards (contained in Section 406.060 (“Drainage”) of the subdivision regulations) are inadequate and not sufficient to meet federal and state stormwater management/water quality standards. The city should consider a number of amendments to its UDC 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

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the U.S. EPA Sustainable Communities Office) which was circulated at the workshop and is available online, provides a comprehensive list of potential green infrastructure techniques. The city also has a tremendous canopy of mature, beautiful trees that warrant protection. These trees not only add immensely to the city's character and attractiveness, but also absorb greenhouse gases and significantly reduce stormwater runoff.

### ***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, Chapter 407 requires one space per 150 square feet for restaurants, one space per 200 square feet for banks, and one space per 200 square feet for retail stores. Many communities require only one space per 300 square feet or even less for these uses. 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 as well as being very costly to developers (one surface parking space can cost from \$5,000-\$10,000). An increasing number of jurisdictions such as Duluth, MN, grant an automatic reduction in off-street parking spaces of 15-30% for projects within walking distance of a bus rapid transit stop or rail mass transit station.
- ii. Stream buffers: Stream buffers that require development to setback a specified distance from perennial streams are recognized as one of the most effective tools to protect water quality. If sized adequately, they allow stormwater to infiltrate and purify rather than running off directly into rivers and creeks. The State of Missouri has been pressing Blue Springs to add such requirements to its UDC. Many communities have adopted stream buffer regulations requiring development to setback anywhere from 50 to 100 feet from perennial streams. The city should consider such buffers in revamping its UDC to address stormwater runoff more effectively.
- iii. Landscape regulations: Section 407.040 of the UDC contains the city's landscaping and buffering requirements. Staff and members of the working group felt that the city needs to take a comprehensive look at these regulations and consider a variety of updates. On the positive side, the landscape regulations do require the planting of a minimum number of trees and shrubs on most development sites and parking lot landscaping. Additionally, credit is given towards landscaping requirements for preservation of healthy existing trees. In reviewing Section 407.040, the city should consider issues such as use of native vegetation (which typically uses less water), more specific tree protection regulations (see discussion below), and tailored landscaping standards for infill areas. The city might also consider allowing (or requiring) sunken landscape islands in parking lots that can allow infiltration of stormwater rather than contributing to runoff.

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

- iv. Green infrastructure stormwater management techniques: Many communities, including Kansas City, MO, and Lenexa, KS, have revamped their codes to encourage green infrastructure techniques such as green roofs, pervious pavement, rain gardens, and rain barrels. There are no provisions in Blue Springs' UDC addressing green infrastructure, including streets. We recommend that the city study adoption of

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subdivision, street, and parking lot pavement and landscaping standards that will allow and promote the use of green infrastructure (e.g., pervious pavement, stormwater infiltration inlets for landscaping, street-side bioswales, etc.). The consensus of the working group was to initiate a discussion with experts from the U.S. EPA regional office, MARC, and local development practitioners and stormwater professionals to determine which green infrastructure techniques should be required or encouraged in Blue Springs, in what circumstances, and potential standards for installation and maintenance.

- v. Green roofs: Green roofs can be a very effective stormwater management technique. 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 an expedited permit program for green roof development. Chicago now requires them for all new buildings in downtown. MARC has published an excellent stormwater best practices manual that encourages green roofs among other green infrastructure techniques. Workshop attendees felt that more education is needed to inform the development community of the variety of modern green roofs and building techniques that reduce any potential problems. The UDC should be tuned up to promote this option and make clear it and other green infrastructure techniques are not only allowed but preferred.
- vi. Parking maximums: The city 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.
- vii. Tree protection: Another key recommendation in this arena relates to tree protection. The UDC currently requires the planting of street trees, but offers no protection for mature trees on private property, although according to staff this is sometimes negotiated as part of the PUD process. We suggest the city consider new standards in its UDC to protect existing trees when new development on site occurs. The tree protection regulations in the zoning ordinance of Clayton, Missouri, a vibrant suburb of St. Louis, might serve as a model for the city 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 for any trees removed (or payment into a city tree planting fund).

**c. Community Health/Safety:** One of the valuable assets Blue Springs has as a community is its extensive system of parks and open space. The city is committed to continuing to provide appropriate open space for its citizens. This open space helps contribute to overall community health by providing opportunities for recreation and exercise.

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

- i. Open space requirements: There are only vague open space requirements in the subdivision section of the UDC. No minimum amounts of either private open space set asides or public land dedication requirements are specified. Similarly, while there are some open space standards in multifamily design standards (must be within 500 feet of every dwelling unit), no specific amounts are required. The PUD regulations (Section

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407.110) require 20% open space in nonresidential PUDs and 40% in residential, but does not clearly define what qualifies. According to staff, leftover, undevelopable land with little recreational utility is often offered as open space. It is also not clear whether community gardens or green roofs might qualify as open space. The city should consider a number of open space-related amendments to the UDC. First, it should consider minimum open space requirements for ALL developments, not just PUDs. For example, Lenexa requires pedestrian furniture, plazas, and similar amenities in larger commercial developments. Legally, open space requirements should be calculated based on number of people in a development (e.g., 10 acres of open space for every 1000 persons or fraction thereof is a national standard used by many communities). Second, it should make a distinction between passive and active open space and clarify what qualifies in each category (e.g. stream buffers, community gardens, tennis courts, etc.). Standards regarding such issues like location and minimum size and dimensions should also be discussed. Finally, the city 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.

- ii. Bicycle parking regulations: The city currently does not have any requirements for bicycle parking except in the mixed use overlay district. 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/>).
- iii. Pedestrian connectivity between developments: An increasing number of communities require connectivity between adjacent residential or commercial developments to encourage walking and reduce the use of motor vehicles. For example, Franklin, TN, requires connectivity between adjacent subdivisions. Blue Springs should consider amending its subdivision regulations and commercial zone district regulations to require both vehicle and pedestrian connectivity between adjacent developments. Currently, the planned residential overlay district requires a pedestrian open space system as part of a required open space plan (Section 404.220), but there is little else in the UDC addressing connectivity and pedestrian circulation.
- iv. Community gardens: Community gardens can help supply healthy foods and areas for physical activity. Also they help reduce energy consumption associated with importing food. The UDC does not define community gardens or list them as allowed uses in any zone district. Agricultural uses must be at least 3 acres and are not permitted in residential areas. Community gardens should be an allowed use in all zone districts. However, the city should consider size limits in residential areas and issues like the size and location of accessory structures (e.g., to house tools, greenhouses) and whether to allow sales from the community garden. Similarly, the UDC does not address farmers markets that can help provide fresh, healthy foods to residents. The Blue Springs municipal code waives peddler’s licenses for vendors at farmers markets, but the UDC

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does not list them as allowed uses in any zone district. The UDC should be amended to allow farmers markets in specific locations with standards regarding hours of operation, parking, and similar considerations

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

- i. Sidewalks. The UDC's subdivision regulations (Section 406.030 Subdivision) require sidewalks only on one side of the street on local streets and none for short cul-de-sacs (less than 200 ft.). Pedestrian ways can be required to provide access to public facilities, but this is not mandatory. Detached sidewalks are required by the multifamily design standards. There was consensus in the working group that to encourage walking, enhance pedestrian safety, and ensure compliance with the Americans With Disability Act, sidewalks should be mandatory on both sides of all streets except in larger lot developments that have a more rural character.
- ii. Pedestrian/trail network: While not strictly an issue pertaining to the UDC, the working group discussed the need to update the city's trails and pedestrian master plan. Having such a plan can be invaluable when new developments are proposed, and the city is considering open space set aside/dedication requirements and pedestrian circulation plans for the project.

## **4. Implementation Strategy**

The working group spent the last half of the afternoon session discussing implementation strategies. Blue Springs has a head start in sustainable code implementation measures because a rewrite of its comprehensive plan is already underway. Through that process, the city can further explore issues highlighted above, such as open space and pedestrian connectivity, and lay a solid policy groundwork for future amendments to the UDC.

In revamping the UDC to incorporate sustainability measures, there was consensus in the working group that removal of regulatory barriers and incentives be explored and utilized to the extent possible to achieve the community's sustainability goals before considering new regulations.

There was also agreement that a broad group of stakeholders needed to be brought to the table when discussing specific changes. Any involvement strategy should feature both an "inside" and "outside" aspect. The inside group is often overlooked in code implementation efforts by local governments— inclusion of all city departments that are involved in or affected by land development decisions. The working group listed city agencies that should participate, in addition to community development agencies such as parks and recreation, public works/maintenance, finance, police, and the historic preservation commission.

The outside group will include both government agencies as well as non-profit and private sector organizations. The working group identified a host of key government entities such as MARC, the U.S. EPA regional office, county stormwater district and other watershed organizations, public service commission, school district, fire district, and the economic development commission that might be invited to discuss specific sustainability issues. Non-profit and private organizations listed included fraternal organizations, local homeowners associations and local citizen groups, the local hospital and county health department, the East Johnson County Building and Development Association, the Kansas



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City Home Builders Association, local realtors, churches, gardening organizations such as the local master gardeners, and the historical society among others.

Fortunately many of these groups are already engaged in the comprehensive planning process. Also, a number of the city's other departments as well as the planning commission were represented on the working group and are therefore well aware of the city's efforts to incorporate sustainability goals into the comprehensive plan and UDC.

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