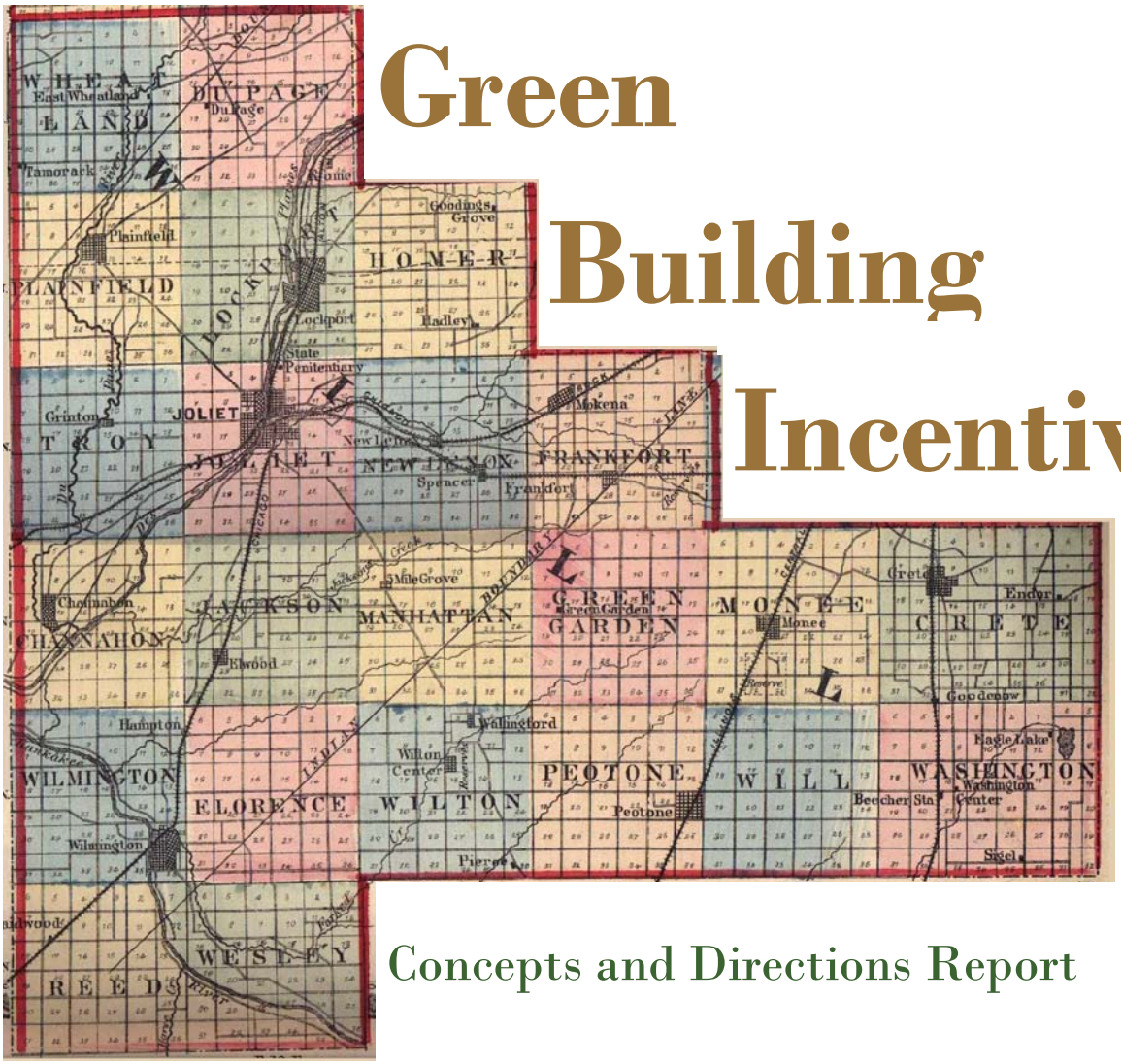
Will County Green Building Incentives



Concepts and Directions Report

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duncan associates
Primera
LAKOTA

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INTRODUCTION

The Project

Will County has embarked on a project that will result in a comprehensive update of the zoning ordinance and strategic additions to the building ordinance that promote green/sustainable development practices. Both the zoning and building ordinance updates are intended to help implement the draft *Will County Long Term Energy Efficiency and Conservation Plan* by promoting energy efficiency and sustainable development practices. The zoning ordinance update also has the broader focus of helping to ensure that the county's land use regulations are consistent with the *Land Resource Management Plan* and the Chicago Metropolitan Agency for Planning's *Go To 2040* regional plan.

This Report[1]

This report focuses on the building ordinance portion of the overall project. It outlines a recommended approach for incentivizing energy efficient and sustainable building practices.

Basis of Recommendations

The concepts and recommendations included in this report are based on:

- staff and consultant analysis of the county's building ordinance and permit review process;
- analysis of plans and policy documents related to sustainable building and development practices in Will County;
- comments and input from staff and key interest groups; and
- our team's knowledge practices used in other jurisdictions to promote energy efficient and sustainable building practices.

Benefits of Sustainable Building Practices

Buildings are one of the largest end users of energy. They also account for a substantial portion of the world's fresh water withdrawal and wood harvest. Greater use of green building practices presents a major opportunity to use resources efficiently, while improving human health, building a better environment, and providing long-term cost savings for building owners and occupants. Green buildings offer benefits that go beyond individual buildings and property owners. They can help create jobs, reduce infrastructure demands and inspire economic growth and innovation.

In recognition of the manifold benefits of sustainable building practices, the County's draft *Long Term Energy Efficiency and Conservation Plan* focuses a good deal of attention on the promotion of energy-efficient and sustainable building practices. While most of

[1] Possible revisions to the Will County's zoning ordinance are addressed in a separate companion report.

that plan is aimed at county-owned and county-occupied buildings, it also recommends that actions be taken to encourage greater use of sustainable building practices in new and existing privately owned buildings. This report examines some of the ways in which that encouragement can be provided.

INCENTIVES FOR SUSTAINABLE BUILDINGS

The most common ways that local governments encourage green building is through development (standards or process) incentives and financial incentives. Also common are official green recognition programs often accompanied by plaques designating achievement levels and governmental assistance in marketing a project's green attributes. Rewarding builders, developers and homeowners who elect to employ sustainable building practices has proven to be a very popular and effective way to encourage use of green building practices.

Development Incentives

Development incentives are typically offered in the form of density/intensity bonuses or expedited plan/permit approval.

Density Bonuses

Some local governments allow for increases in development "yield" (i.e., additional building floor area or dwelling units) for qualifying green buildings. Such bonuses offer direct dividends for builders and developers through the ability to sell or lease additional floor space or housing units.

Expedited Plan/Permit Approval

Reducing the duration of development review and permitting processes can also provide great dividends to developers in the form of decreased financing costs. Through such incentive programs, qualifying green buildings are given priority reviews over other applications, often with guaranteed review times. Expedited permitting is a very common incentive used by local governments.

Financial Incentives

Direct financial incentives are also used by state and local governments to encourage green building.

Development Review/Permit Fee Reductions

Some local governments offer fee reductions or waivers for builders and developers who commit to employ qualifying sustainable building practices.

Other Financial Incentives

Other direct financial incentives are sometimes offered in the form of grants, tax credits, revolving funds or low-interest loans.

Sample Incentive-based Programs

Chicago, IL

The City of Chicago's Green Permit Program provides developers and owners with an incentive to build green by streamlining the permit process timeline for projects that are designed to maximize indoor air quality and conserve energy and resources. Projects that have been accepted into program can receive permits in 15-

30 business days. Projects that meet the most stringent sustainability guidelines can also qualify for a reduced (out-sourced, consultant) permit review fees of up to $25,000.

Acceptance into the city's Green Permit Program is contingent on meeting one of two tiers of Green Building Certification:

- Commercial projects and large residential/mixed-use projects must earn various levels of certification for their respective LEED (Leadership in Energy and Environmental Design) rating system.
- Small residential projects must earn a two-star or greater rating system under the Chicago Green Homes program.

Northbrook, IL

Northbrook adopted its Green Building Initiative ordinance in 2008. Under the voluntary program, builders who construct new buildings or remodel an existing building to meet LEED standards is eligible for incentives. The incentives include permit fee rebates, expedited permitting and review over all other non-enrolled applicants, and recognition from the village. Fee rebates of 10, 20, 30 and 40% are offered to projects that obtain Certified, Silver, Gold or Platinum status, respectively.

Bellingham, WA

In 2010 the City of Bellingham launched a pilot program to encourage and support green building projects by reducing building permit review time for certified green projects and assigning them special green project staff expeditors. The pilot program, which is locally referred to as the "Bin-Bump-Up" program, decreases standard permit review times for eligible projects by one "bump." For example, a project that typically would be eligible for 28-day review is "bumped-up" to a seven-day review. Qualified green projects are also eligible to work with the city's designated Green Project Review Team to identify potential code conflicts between the project's concepts and city building codes.

San Diego County, CA

San Diego has a Green Building Incentive Program designed to promote the use of resource efficient construction materials, water conservation and energy efficiency in new and remodeled residential and commercial buildings. The program offers incentives for qualifying projects in the form of reduced permit turnaround times and a 7.5% reduction in plan check and building permit fees. To qualify for the incentives, projects must comply with at least one of the county's resource conservation measures, as follows.

- New buildings using baled straw from harvested grain for the construction of the exterior walls.

- Buildings in which 20% or more of primary building materials contain, in aggregate, a minimum weighted average of 20% post-consumer recycled content materials (reused materials count as 100%).
- Buildings in which at least one primary building material (such as roofing) is 50% or more post-consumer recycled content.
- Installing a gray water system in new or renovated buildings.
- A residential project that exceeds minimum state energy conservation standards by at least 15%
- A commercial project that exceeds minimum state energy conservation standards by at least 25%.

Issaquah, WA

The City of Issaquah promotes sustainable development practices by offering several incentives and has prepared guides to residential and commercial building incentives that are available to local builders and developers. The incentives include water utility rebates, energy rebates, technical assistance and expedited permit reviews.

RECOMMENDED PILOT INCENTIVE PROGRAM

Support for Incentives

During the first weeks of the project, the consultant team met with Land Use Department staff, interest groups and individuals to discuss issues and concerns regarding the county's efforts to promote sustainable building practices. Nearly all who commented on the subject were supportive of an incentive-based approach.

Most of those involved in the building and development industries commented that expedited review and permitting time-frames would offer the most powerful incentive. Moreover, the county's draft *Long Term Energy Efficiency and Conservation Plan* also recommends development of an expedited permitting process for green building projects. According to the plan, such an incentive "will provide a low-cost way to incentivize developers to improve energy efficiency in new construction."

Despite the obvious support for use of expedited plan/permit approval processes as a way to incentivize green building practices in Will County, existing staffing levels within the building division may make it very difficult to implement such a program at this time. It appears that a program guaranteeing significantly faster turn-around times for permit/plan reviews would likely necessitate additional staffing or out-sourcing for some review functions, as has been the case in other jurisdictions.

Given the practical challenges of implementing an expedited plan/permit approval process, we recommend that the county's initial efforts focus on permit fee reductions as an initial pilot incentive program. Serious consideration should be given to rolling out an enhanced incentive program—including expedited processing and recognition programs—over the longer term, but such a program will require further study into how such a program can be instituted without negatively affecting staff's ability to offer consistently high-levels of service to all permit applicants.

Program Design

Any green building incentive program, including the recommend reduced permit fee, will require that the county define what constitutes a qualifying green project. While many local governments tie their incentive programs to some level of LEED certification, the relatively minor incentive to be offered under a reduced permit fee means that a less rigorous form of qualification will be needed.

The qualifying criteria should be based on a locally defined, flexible menu that offers a range of options. It will also need to be calibrated to take into account the varying levels of cost associated with different sustainable building practices and the different types of building projects subject to review under the county's building ordinance. New construction, for example, should have different qualifying criteria than renovations and rehabilitation projects. Large buildings should be subject to different criteria than small projects.

The range of items that can positively affect a building's sustainable profile can be varied. The items identified represent possible menu items that should be considered for inclusion among the Will County program's qualification criteria.

Photovoltaic Systems

Photovoltaic (PV) systems generate electricity from sunlight using solar cells. PV systems typically rely on roof-, pole-, wall- or ground-mounted solar panels, but PV technology is rapidly evolving. As a result of such advances, PV modules are now being produced that resemble traditional roof shingles and very thin coatings applied to building windows.

Geothermal Heating Systems

Geothermal heating and cooling systems use 25 to 50% less electricity than conventional systems, which means lower utility bills and greatly reduced greenhouse gas emissions due to the decreased reliance on fossil fuel-derived energy.

Fenestration – High Performance Systems, Replacement or Upgrades

A building's envelope can play a significant role in a building's overall energy performance. The use of high performance glass in curtain wall or window systems should be included as a potential item of consideration. One of the most common components of a renovation program is window replacement. This should also be considered but only if system selected includes high performance properties.

Solar Panels

Active solar heating systems are used to convert sunlight to heat that can be used for space heating and hot water. These types of solar systems use solar collectors, typically mounted on a south-facing roof, to directly heat fluids or air.

Reflective Roof Systems

Roofs with high solar reflectance reflect sunlight and heat away from a building, reducing roof temperatures and the urban heat island effect. A high solar reflectance—or albedo—is the most important characteristic of a cool roof. Cool roof technologies employ highly reflective and emissive materials to keep roof surfaces much cooler than traditional materials, especially during peak summer weather which requires high energy usage.

Green Roof Systems

Conventional roofs absorb and retain heat and increase stormwater run-off. A green roof has numerous benefits to both the building owner and larger community when compared to a conventional roof, a "green roof" is a roof that is partially or completely covered with plants that help reduce stormwater flows through retention or bioretention and mitigate the urban heat island effect.

Green roofs typically include a structurally sound roof, a waterproofing and root barrier, a drainage layer, a permeable fabric, a growing medium, and vegetation. There are two types of green roof systems: lightweight "extensive" roofs feature

hardy succulent plants and are appropriate retrofits to existing buildings; and a heavier "intensive" green roof system with a thicker growing medium to support deep-rooted vegetation. Green roofs can be installed on most flat roofs provided that they are constructed to accommodate the structural load.

Exterior Lighting

Additional incentives should also be included for lighting systems designed for highest efficiency and full cut-off. According to the U.S. Department of Energy's Energy Information Administration, lighting accounts for about 19% of the total electricity consumed by residential and commercial land use. Efficient lighting is designed to eliminate glare, over lighting and light trespass reduces light pollution as well as energy use and operational costs.

Energy conservation in lighting relates to efficient lighting solutions that focus the use of light where and when it is needed with the level of brightness and appropriate light fixtures based on the type of place or space being lit. Efficient outdoor lighting utilizes advanced energy efficient light fixtures and lighting zones based on context, mandating dark sky technologies to preserve views and reduce wildlife impacts while minimizing energy waste.

Exterior Irrigation with Rainwater

Rainwater harvesting uses rain barrels, cisterns and storage tanks to collect and store rainwater draining from a building roof for various uses, including irrigating plants. Rain barrels are most often used for individual residences, while cisterns have both residential and commercial applications. Initial runoff volume (first flush) is retained by rain barrels and cisterns, ranging from approximately 50 gallons to several thousand for a large cistern.

Wind Energy

Wind Energy Systems are devices that convert wind energy into usable thermal, mechanical, or electrical energy, including windmills and wind turbines and supporting equipment such as generators, alternators, inverters, and batteries. Systems with a power-related capacity of no more than 100 kilowatts (kW) are classified as "small" systems, which are geared primarily toward producing energy for on-site consumption.

Exterior Insulation Systems

Applying insulation on the exterior walls of an existing building is a relatively easy and effective way to substantially improve the R-value of existing walls without interrupting occupancy or requiring expensive building renovations. Creative techniques for application of exterior insulation are currently being developed in Canada, Europe and the United States. Some techniques, such as spray foam and EIFS (Exterior Insulation Finishing System) can have the added value of creating an air barrier, which can help lower energy use in buildings.

High Efficiency Systems (as Measured by ComCheck/ResCheck)

The State of Illinois has adopted the International Energy Conservation Code (IECC) for mandatory statewide application. The law applies to both Residential and Commercial, major renovation and new construction. It also included a provision that the subsequent editions of IECC would be adopted automatically within 6 months of publication. The IEEC is based on the betterment of American Society for Refrigeration and Air-Conditioning Engineers (ASHRAE) standards. Each three year cycle looks to improve 15% above the previous version. Compliance for these programs can be documented through the Department of Energy's ComCheck (Commercial) and ResCheck (Residential) software. A certain percentage improvement above baseline compliance should be considered as a potential menu item.

High Reflectance Paving Systems

Pavement systems with high solar reflectance reflect sunlight and heat away from a building, reducing surface temperatures and the urban heat island effect. A high solar reflectance—or albedo—is the most important characteristic of a high reflectance pavement. Cool pavement technologies employ highly reflective and emissive materials to keep paved areas much cooler than traditional materials, especially during peak summer weather.

Bio Swales

Bioretention or bio swales areas can be sized to detain and infiltrate stormwater that would otherwise flow into the storm drainage system and into natural bodies of water. Bioretention areas are suitable for commercial and residential areas to filter run-off from roofs, driveways, roads and parking lots. Bioretention areas are a recognized best management practice (BMP) for stormwater management. Bioretention areas filter pollutants from stormwater as the water seeps through mulch, soil and gravel layers, and releases the filtered water into the ground water. Sites that incorporate these elements can be awarded additional incentive credits.

Permeable Pavements

Permeable pavement especially in conjunction with bio-retention provides advantages for stormwater management and aquifer replenishment. Permeable pavement (in paver form, concrete or even asphalt systems) has porous openings allowing water to pass through the surface and percolate through the existing subsoil. These can be beneficial in all soil types because they can be combined with subsurface drainage systems such as pipe underdrains or stormwater infiltration trenches, slowing runoff and reducing stress on stormwater management systems. These areas can be incorporated in limited areas or distributed and can be combined with traditional pavement systems.

Facilities for Cyclists

The most important factors influencing an individual's decision to commute by bicycle is distance and the presence of safe cycling routes. The provision of sheltered, secure bicycle storage areas and changing/shower rooms is also very important.

Providing short-term bicycle parking areas (i.e., bike racks) also provide a necessary "amenity" for cyclists. Incorporation of these ancillary facilities into any new or renovation project can also be incentivized as part of the Building Ordinance. The Zoning ordinance may then address parallel reductions in parking requirements as a potential strategy.

Electrical Vehicle Charging Stations

An electric vehicle charging station, also known as an electric recharging point, charging point, EVSE (Electric Vehicle Supply Equipment), or EVCE (Electric Vehicle Charging Equipment) supplies electricity for recharging electric vehicles or plug-in hybrid vehicles.

High Efficiency Plumbing Systems

High efficiency plumbing fixtures, such as those promoted by the EPA's WaterSense program, can be used to reduce use of potable water for residential and commercial developments.