



## Green Practices Commission

6801 Delmar Boulevard, University City, Missouri 63130, Phone: (314) 862-6767, Fax: (314) 863-9146

# AGENDA (AMENDED)



## GREEN PRACTICES COMMISSION MEETING

Thursday, August 9, 5:30 – 7:00 p.m.

Heman Park Community Center, 975 Pennsylvania Avenue

1. Roll Call
2. Opening Round
3. Approval of Minutes
  - a. 05/10/18 Green Practices Commission Meeting Minutes
  - b. 07/12/18 Green Practices Commission Meeting Minutes
4. Special Presentations
  - a. Public Comments (Limited to 3 minutes for individual's comments and 5 minutes for representatives of groups or organizations)
5. New Business
  - a. Chairperson election
  - b. Lime Bike update
6. Old Business
  - a. Developmental Green Practices
7. Commission Reports
  - a. Council Liaison Update
  - b. Quarterly Report – Waste/Resource Conservation: Jenny Wendt
  - c. Quarterly Report – Ecosystems/Habitat: Community Gardens, Barbara Brain
8. Closing Round
9. Adjournment



## Green Practices Commission

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Meeting Minutes – University City Green Practices Commission

# DRAFT

May 10, 2018

Location: Heman Park Community Center

Attendees Present: Barbara Brain, Adam Staudt, Timothy Dugan, Mary Gorman, John Solodar (Acting Chairperson), Jenny Wendt (Staff Liaison)

Absent: Terry Crow (Council Liaison), Jonathan Stitleman (Chairperson), Kathy Straatmann

1. Meeting Called to Order - Roll Call at 5:32  
Special Guests: Scott Smid, Metro Lighting – Energy Efficiency and Ameren Rebates  
Tom Appelbaum, Missouri Energy Savings, YGRENE – PACE program
2. Approval of Minutes
  - a. 3/08/18 minutes were approved as written.
  - b. 04/12/18 minutes were approved as written.
3. Special Presentations
  - a. Scott Smid with Metro Lighting spoke about Energy Efficiency and Ameren Rebates. Metro Lighting offers free energy audits.
  - b. Tom Appelbaum with Missouri Energy Savings/YGRENE – PACE program spoke about this program also being available for University City residents as it is a St. Louis County approved PACE program.
4. New Business
  - a. Proposed changes to by-laws – John Solodar suggested changing the bylaws to separate the secretary duties of filling in for the chairperson to a new officer – Assistant Chairperson. The commission discussed this and felt it was not necessary to change the bylaws.
  - b. Olive and 170 TIF – The commission reviewed a summary and a map of the TIF project and discussed upcoming TIF commission meetings.
  - c. GPC developmental reviews and recommendations – For the Olive 170 TIF project, as well as other developmental projects, it is beneficial for the GPC to go to the public meetings. Currently there are no requirements or procedures for developmental projects to present to the Green Practices Commission.
5. Old Business
  - a. Recycling Initiative for Construction and Demo projects (cardboard and metal) – Next steps: Adam Staudt has been tasked with developing survey questions for contractors to be asked, after that educate, promote, and work with community development to develop a procedural

avenue for these steps.

- b. OneSTL Endorsement – The commission reviewed OneSTL regional targets for each of the sustainability areas (Water and Green Infrastructure, Waste and Recycling, Transit Oriented Development, Energy and Emissions, Biodiversity, Food Access) and voted to endorse the targets and strategies as University City’s own and implement them in the University City Sustainability Strategic Plan. Jenny will pass this information on to the City Manager requesting official endorsement.
- c. EV information – Tim Michels communicated updates to the EV information and the commission discussed.

6. Commission Reports

- i. Council Liaison Update – No Council Liaison present
- ii. Ecosystems/Habitat: Barbara Brain – tabled until next meeting due to time constraints.
- iii. Energy: Adam Staudt – tabled until next meeting due to time constraints.

7. Closing Round

- a. Jenny – Electronics Recycling even will be held on May 12th.
- b. Adam – Commended the recycling page in the ROARS newsletter.

8. Adjournment at 7:01 pm.

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## Green Practices Commission

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### Meeting Minutes – University City Green Practices Commission

Location: Heman Park Community Center

Attendees Present: Jonathan Stitleman (Chairperson), Kathy Straatman, Barbara Brain, Timothy Dugan, Adam Staudt, Mary Gorman, Tim Cusick (Council Liaison), Adam Brown (acting Staff Liaison)

Absent: John Solodar

#### 1. Meeting Called to Order – Roll call at 5:34pm

##### Special Guests:

- a. Barbara Pickard, Washington University faculty fellow – Sustainable speaker series proposal for Washington University/University City collaboration

#### 2. Opening Round:

- a. Barbara Brain has signed up for a Pollinator Champion course.
- b. Mary Gorman is working with Loop Special Business District businesses to work toward a Green Business District designation.
- c. Jenny Wendt announced that the Council approved the OneSTL sustainable targets.

#### 3. Approval of Minutes

- a. 6/14/18 minutes were approved as written

#### 4. Special Presentations

- a. Barbara Pickard, Washington University faculty fellow proposed a collaborative effort between University City and Washington University on a sustainability speaker series. Barbara would organize the speakers and University City would help with scheduling and participation. The commission agreed this was a good project to be held monthly. Jenny will propose this idea to the Director of Public Works and Parks/City Manager.

#### 5. New Business

- a. Jenny presented a draft of sustainable developmental standards that are proposed to be implemented for new developments in University City. The categories are as follows: Water and Green Infrastructure, Energy and Emissions, Transit Oriented Development, Materials, Biodiversity, and Other. The sustainable practices listed would be broken down into three

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categories: Required, incentivized, and recommended. The Commission unanimously voted to continue developing the list of sustainable practices with the intent of implementing these into developmental projects.

- b. An election for the chairperson will occur at the August meeting.

#### 6. Old Business

- a. Construction and Demolition recycling (cardboard and metal) survey questions were passed around the group for review. This survey will be distributed via email to contractors that the City has email addresses. The commission reviewed the survey and made a few suggestions.
- b. Regent Power presentation review – this would be a public private partnership with University City would receive a portion of the revenue. The commission discussed the logistics of electrical connection and placement. The commission requested a proposal from Regent Power with the logistics included.

#### 7. Commission Reports

- a. Council Liaison Update: Tim Cusick reported two upcoming public meetings and possible working groups sponsored by the mayor and 3<sup>rd</sup> ward council members, the final TIF Commission public meeting is scheduled for August 23<sup>rd</sup> at 6pm at the high school. Tim Cusick also reported that conversations he has heard from developers have included green practices and he would expect the developers to go before the green practices commission for recommendations.

The private engineering firm has looked at the MSD project and has recommended placing the tanks in Heman Park under ball fields, or under/behind parking lot at Mandarin House. The council has asked the City Manager to present these options to MSD and is leaning toward putting the storage tanks in Heman Park.

- b. Quarterly Report – Ecosystems/Habitat: Barbara Brain (Community Gardens continued) – tabled

#### 8. Closing Round

- a. Johnathan and wife designed a second location of Blue Print Coffee on Watson Avenue.
- b. Kathleen Straatman is resigning from the commission but has people to recommend in her place.

- 9. Meeting adjourned at 7:15pm.

## **Lime Bike FAQs and General Information**

### **How would University City get started?**

- St. Louis City has a detailed bike share permit. They have 1100 bikes from LimeBike and 200 bikes from Ofo throughout St. Louis City. Both companies applied for the permit and pay a \$500 application fee and \$10 per bike.
- Creating an ordinance and a specific permitting system is typical of larger Cities but does not have to be done for smaller municipalities. Smaller municipalities and organizations (like Washington University) often create a Memorandum of Understanding (MOU) or contract. It is up to University City which way to proceed.
- The MOU often outlines a pilot program for 6 months with the municipality requiring LimeBike to provide specific data and information about how the program is progressing and its success rate.
- Initial deployment areas will be determined with collaboration of a local team of LimeBike experts and University City.
- This program is at no cost to the City.
- The MOU can be adjusted at any time.

### **What other agreements does LimeBike have or is working on near U City?**

- The City of St. Louis has a detailed permitting system with a maximum number of 2500 bikes.
- LimeBike has an agreement with Bi-State – as long as the governing jurisdiction agrees to the program, LimeBikes can (and generally are) be placed at Metro Stops.
- LimeBike is has signed a contract with Washington University to get 200 bikes onto the campus to start with.
- LimeBikes are now in Clayton. Clayton did not sign a contract or MOU with LimeBikes, they only asked for LimeBikes to include them on their insurance and for riders to obey existing laws. If problems arise, additional laws will be enacted regarding rental bikes.

### **What about trolley tracks?**

- The bikes are in St. Louis City and as of date no problems have occurred with the tracks. Signage is key, as is familiarity with the existence of the tracks.
- In Dallas, they have the McKinney Avenue Trolley located in Uptown Dallas, which is one of Lime's highest ridership areas (with hundreds to thousands of rides per day). They have not had a single reported issue with the trolley tracks there.

### **What about scooters and electric bikes?**

- The 6 month MOU is specific to the manual bikes. LimeBike is starting the process with the City of St. Louis for scooters (and possibly electric bikes) but for now, these will not be allowed in University City. This means that LimeBikes will actively remove the scooters/electric bikes from University City on a regular basis – typically they make a sweep of the area every 48 hours.

### **What are inclusion areas?**

- In order for all residents of University City to have access to this program, a designated “Inclusion Area” has been created requiring a minimum number of bikes in low income areas based on East-West Gateway’s environmental justice map.
- The 6 month pilot program will determine if this area needs to be adjusted.

### **What about current Code/Ordinances?**

- The code has been reviewed. There are 2 sections of code that primarily effect this program:  
*Section 340.125 – Cycles, Roller Skates or Skis, and Play Vehicles On Sidewalks and in Pedestrian Areas in Delmar Loop Special Business District.* Delmar has been designated as a No Parking Zone, with the exception of the “nodes” of intersecting streets where the bikes can be used on the side streets.  
*Section 505.090. Street and Sidewalk Obstructions.* LimeBikes specifically tell the riders to not ride on the sidewalk and advise the riders to ride on the road. Upon occurrence of obstruction, this should be handled the same as personal bikes obstructing free passage. There is LimeBike contact information on the bikes for reporting.
- If motorized scooters/bicycles are to be added in the future, the code will need to be re-reviewed.

### **Where will the bikes be placed?**

- Initial deployment areas will be determined with collaboration of a local team of LimeBike experts and University City. “Preferred Parking” areas and “No Parking” areas will be designated on the map. “No Parking” areas have been established; “Preferred Parking” to be determined.

### **Is LimeBike the only local dockless bikeshare program?**

- Yes, as of now. OFO, a competing dockless bikeshare program, started a program in the region. Recently they have discontinued their presence in North America.

2018

University City Sustainable Practices Guidelines



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# **1. WATER AND GREEN INFRASTRUCTURE**

## **1.1 Erosion Control during Construction**

Erosion control during construction attempts to limit the amount of sediment that is carried into lakes, streams, and rivers by stormwater runoff. University City requires a plan to minimize sediment movement for projects 1 acre and over, and for some projects less than 1 acre.

### **Incentives**

Not Applicable

*Compliance Documentation:*

*Resources:*

- Drainage Calculator - <https://www.ndspro.com/drainage-calculator>

## **1.2 Post-Construction Stormwater Solutions – Site**

Following construction of a new development or re-development, post construction stormwater solutions attempts to reduce pollutants in post-construction runoff. University City requires a plan to minimize pollutants in stormwater runoff for projects 1 acre and over. Below are a few general strategies to achieve this:

### ***1.2.1 Permeable Pavement***

Permeable pavements are alternative paving surfaces that allow stormwater runoff to filter through voids in the pavement surface into an underlying stone reservoir, where the runoff is temporarily stored or infiltrated.

### **Incentives**

University City will waive or reduce [FEE] if a project [COMPLIES WITH REQUIREMENT].

*Compliance Documentation:*

*Resources:*

- Huge Calculator for Permeable Interlocking Pavers - <https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/low-impact-development/low-impact-development-life-cycle-costs/>

### 1.2.2 Runoff Landscaping for Parking Lots

Landscaping designed to minimize flooding, maintaining cleanliness, and creating green space is required by University City for projects 1 acre and over. Techniques such as bioretention, perimeter bioswales, and rain gardens can help reduce excess stormwater runoff.

#### Incentives

University City will waive or reduce [FEE] if a project [COMPLIES WITH REQUIREMENT].

*Compliance Documentation:*

*Resources:*

- Huge Calculator for Bioretention and Bioswales - <https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/low-impact-development/low-impact-development-life-cycle-costs/>
- Site Design Guide for Post Construction Stormwater quality protection - <https://www.stlmsd.com/sites/default/files/engineering/474685.PDF>
- Landscape guide for stormwater best management practice design - <https://www.stlmsd.com/sites/default/files/engineering/442680.PDF>

## 1.3 Post Construction Stormwater Solutions – Building

Following construction of a new development or re-development, post construction stormwater solutions attempts to reduce pollutants in post-construction runoff. University City requires a plan to minimize pollutants in stormwater runoff for projects 1 acre and over. Below are a few general strategies to achieve this:

### 1.3.1 Vegetated Roofs

Vegetated roofs are roofs that include a layer of plant species that are used to absorb stormwater and reduce the heat island effect in urban

communities. Vegetated roofs require caution to alleviate any damage to the existing roof, and involve high-quality water proofing, a root repellent system, a drainage system, filter cloth, a lightweight growing medium, and plants.

### **Incentives**

University City will waive or reduce [FEE] if a project [COMPLIES WITH REQUIREMENT].

*Compliance Documentation:*

*Resources:*

- Huge Calculator for Green Roofs - <https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/low-impact-development/low-impact-development-life-cycle-costs/>

## **1.4 Potable Water Conservation**

Potable water conservation is extremely important in reducing the significant losses of fresh water supplies by some cities in developed countries. The Water Project estimates a loss of 30% of fresh water supplies due to leakage in developed countries. University City has an interest in potable water conservation, and the strategies listed below are recommended practices to conserve fresh water supplies:

### *1.4.1 Rain Barrels, Rainwater Tanks, and Cisterns*

Rain barrels, rainwater tanks, and cisterns all capture and store rainwater for later use.

### **Incentives**

Not Applicable

*Compliance Documentation:*

*Resources:*

- Huge Calculator for Rainwater Capture - <https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/low-impact-development/low-impact-development-life-cycle-costs/>

### *1.4.2 Rain Gardens*

Rain gardens are gardens of native shrubs, perennials, and flowers planted in a small depression designed to temporarily hold and soak in rainwater runoff.

### **Incentives**

Not Applicable

*Compliance Documentation:*

*Resources:*

- Rain Garden Calculator - <http://raingardenalliance.org/right/calculator>

## **2. ENERGY AND EMISSIONS**

### **2.1 Renewable Energy**

Renewable energy is energy that is collected from renewable resources that are naturally replenished, such as sunlight, wind, and geothermal heat. The energy code as laid out in the International Energy Conservation Code (IECC) of 2012 is in effect for University City. Below are a few resources that could be used as energy sources that could be used to comply with the 2012 IECC:

#### *2.1.1 Solar Power*

Solar power is the conversion of energy from sunlight into electricity, either directly using photovoltaics or indirectly using concentrated solar power.

##### **Incentives**

Federal tax credits are available for solar power. Please see the Bipartisan Budget Act of 2018 for requirements to receive renewable energy tax credits.

Ameren Missouri's solar programs will be updated in the form of solar rebates and utility owned solar effective on and after January 1, 2019. Please see Senate Bill 564 for more information.

*Compliance Documentation:*

*Resources:*

- Solar Power Calculator - <https://www.solar-estimate.org/solar-panel-calculators>
- Offgrid Calculator - <https://www.wholesalesolar.com/solar-information/start-here/offgrid-calculator>

#### *2.1.2 Wind Power*

Wind power is the ability to make electricity using the air flows that occur naturally in the Earth's atmosphere.

##### **Incentives**

Federal tax credits are available for solar power. Please see the Bipartisan Budget Act of 2018 for requirements to receive renewable energy tax credits.

*Compliance Documentation:*

*Resources:*

- Multiple Wind Power Calculators - <http://www.energygroove.net/energy-cost/wind-turbine-calculator/>
- Wind Power Calculator - <http://www.energyefficientchoices.com/resources/wind-power-system-sizing-calculator.html>

### **2.1.3 Geothermal Power/Heating and Cooling**

Geothermal power is the ability to make electricity using heat from underneath the surface of the Earth. Heat pumps use the fact that a few feet below the surface, the ground is a constant temperature year round. Heat pumps allow the release of heat to the earth from a building in the summer and absorption of heat in the winter.

#### **Incentives**

Federal tax credits are available for solar power. Please see the Bipartisan Budget Act of 2018 for requirements to receive renewable energy tax credits.

*Compliance Documentation:*

*Resources:*

- Clean Energy Emission Reduction Tool - <https://www.cleertool.org/>

## **2.2 Energy Efficiency (per 2012 IECC)**

University City has committed to complying with the International Energy Conservation Code (IECC) of 2012, which details multiple strategies for increasing energy efficiency for any building. Below are practices taken from the 2012 IECC that University City is either requiring for new developments or major renovations:

### **2.2.1 Efficient Building Envelope**

An efficient building thermal envelope (assuming all other thermal insulation/conductance issues are satisfied) is one that has the fewest gaps possible through which air can flow. To minimize the amount of gaps, builders may install insulation, sealed duct shafts, air sealing between a garage and conditioned spaces, and more. The 2012 IECC (Residential only) has a checklist called Table R402.4.1.1 “Air Barrier and



Insulation Installation” that provides information on this aspect of an efficient building thermal envelope.

### **Incentives**

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

- Metal Building Insulation Calculator - <https://www.remodelingexpense.com/costs/cost-metal-building-insulation/>
- Cost to Install Wall Insulation - [https://www.homewyse.com/services/cost\\_to\\_install\\_wall\\_insulation.html](https://www.homewyse.com/services/cost_to_install_wall_insulation.html)

## **2.2.2 Energy-Efficient Lighting Strategies**

Efficient lighting is to use as little energy as possible in order to adequately light a space. Strategies such as replacing existing lighting bulbs to LED or CFL bulbs and using energy-efficient windows will increase the efficiency of lighting practices in a business or residency.

### **Incentives**

Ameren Missouri offers a wide range of incentives and rebates related to replacements of interior lighting. Please visit Ameren’s website for standard incentives or by clicking [here](#).

*Compliance Documentation:*

*Resources:*

- Energy Use Calculator - [http://energyusecalculator.com/electricity\\_cflightbulb.htm](http://energyusecalculator.com/electricity_cflightbulb.htm)
- Lightbulb Energy Savings Calculator - <https://www.bulbs.com/learning/energycalc.aspx>

## **2.3 Energy Efficiency (exceeding 2012 IECC)**

The minimum requirements by University City for new developments or major renovations is to follow the 2012 IECC, but by exceeding the requirements outlined by the 2012 IECC, projects can earn incentives that help reduce costs, streamline permitting applications, and more. Below are some of the practices that exceed the 2012 IECC that University City will incentivize:

### 2.3.1 Energy-Efficient HVAC

HVAC units are one of the most energy-intensive systems in a building. Retrofitting existing HVAC systems to more efficient units could drastically improve energy efficiency in a conditioned space.

#### Incentives

Ameren offers multiple incentives for HVAC equipment, ranging from refrigeration, electric water heating, and steam cookers. Please visit Ameren's website for standard incentives or by clicking [here](#).

Spire offers rebates ranging from saving \$500 on HVAC system and components to saving \$15,000 on boiler heating systems and components. Please visit Spire's standard rebates for more information, or by clicking [here](#).

*Compliance Documentation:*

*Resources:*

- Heating and Cooling Calculators(Central AC calculator is a spreadsheet) - <https://www.energy.gov/eere/femp/energy-and-cost-savings-calculators-energy-efficient-products>

### 2.3.2 Cool Roofs

A cool roof is a roof that has been designed in such a way to reflect more sunlight and absorb less heat than a standard roof. Cool roofs can be made of a highly reflective type of material, a sheet covering, or highly reflective tiles and shingles. Cool roofs are instrumental in reducing the heat island effect in urban communities.

#### Incentives

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

- Cool Roof savings calculator - <https://web.ornl.gov/sci/buildings/tools/cool-roof/>
- Roof savings calculator - <https://rsc.ornl.gov/>

## 2.4 Monitoring/Commissioning

University City recommends that all projects maintain a suitable monitoring/commissioning process to ensure the development is meeting the design, whether systems are installed and operating correctly, and whether the development meets the requirements laid out before construction.

### Incentives

Spire offers rebates for savings up to \$750 on energy audits. Please visit Spire's standard rebates for more information, or by clicking [here](#).

*Compliance Documentation:*

*Resources:*

- Information about Commissioning - <https://www.gsa.gov/real-estate/design-construction/commissioning/commissioning-program>

## **3. TRANSIT ORIENTED DEVELOPMENT**

### **3.1 Integrated Transit**

Integrated transit aims to develop roads that promote public and pedestrian transportation by eliminating dependence on private vehicles for an area and instead make a pedestrian-oriented and public-use vehicle community.

#### **Incentives**

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

### **3.2 Bicycle and Pedestrian Access and Amenities**

A bicycle and pedestrian access and amenities plan attempts to encourage bicycle users to make stops at businesses with bicycle storage and changing facilities as well as bike sharing sponsorships. University City is committed to assisting bicycle users and has incentivized businesses that plan for bicycle storage and changing facilities.

#### ***3.2.1 Bike Storage and Changing Facilities***

Bicycle parking, storage, and changing rooms are important ways to provide convenience and security for cyclists at businesses and other destinations.

#### **Incentives**

University City will lower the parking space requirements for businesses that offer bicycle storage and changing facilities.[SPECIFY INCENTIVE]

University City will help get public recognition for businesses that offer bike storage and changing facilities.

*Compliance Documentation:*

*Resources:*

- Information and minor cost analysis of bike storage facilities - [http://www.pedbikeinfo.org/planning/facilities\\_bike\\_bikeparking.cfm](http://www.pedbikeinfo.org/planning/facilities_bike_bikeparking.cfm)

### 3.2.2 *Bike Share Sponsorship*

A bike-sharing system is a service in which bicycles are made available for shared use to individuals on a short term basis for a price or for free. By sponsoring a bike-sharing system, a business can get title and naming rights for the system or become an “Official Payment Sponsor” of a bike-sharing system.

#### **Incentives**

University City will help get public recognition for businesses that sponsor bike sharing.

*Compliance Documentation:*

*Resources:*

- Bike Share information, news, and more - <https://www.bikeshare.com/>

### 3.3 **Site Layout**

Site layout plans are prepared by contractors as part of their mobilization activities before work on site commences. By taking a transit-oriented development approach to site layout, businesses can benefit from increased traffic from pedestrians and public-use vehicles.

#### **Incentives**

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

## 4. MATERIALS

### 4.1 Construction/Demolition Waste Diversion (50%)

Construction and demolition waste diversion attempts to eliminate as much waste as possible during the construction phase or demolition phase of a project.

#### **Incentives**

University City will expedite the permitting process for projects that divert 50% of their construction/demolition waste to an appropriate recycling facility.

University City will reduce or waive [FEE] for projects that divert 50% of their construction/demolition waste to an appropriate recycling facility.

*Compliance Documentation:*

*Resources:*

- LEEDv4 Construction and Demolition Waste Diversion Calculator - <https://www.usgbc.org/resources/construction-and-demolition-waste-calculator>

### 4.2 Environmentally Preferable Building Materials

An environmentally preferable building material plan attempts to use sustainably sources materials during the construction phase of a project.

#### **Incentives**

University City will expedite the permitting process for projects that use environmentally preferable building materials.

University City will reduce or waive [FEE] for projects that use environmentally preferable building materials.

*Compliance Documentation:*

*Resources:*

- Gives multiple resources on green building materials, the businesses that produce them, etc. - <https://www.greenbuilt.org/resources/green-building-materials/>

### 4.3 Sustainable Maintenance Practices

After a project has been constructed, it is important to have sustainable maintenance practices as the building is occupied and being used. Below are some of the strategies available to commit to sustainable maintenance practices:

### 4.3.1 *Waste Disposal and Recycling*

Having a waste disposal and recycling process can help a business or residency maintain cleanliness while also removing waste in a sustainable and appropriate manner. It is important to make sure a business has appropriate educational material for patrons and staff on how to recycle responsibly and for residents to educate themselves on recycling so that recycled waste can be effectively processed.

#### **Incentives**

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

- Recycling database - <http://stlcityrecycles.com/recycle-with-us/database/>
- Maybe list ucity recycling service?

### 4.3.2 *Low-Emitting Materials*

Low-emitting materials help reduce the concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment. Reducing the amount of materials that emit volatile organic compounds keeps a business and the surrounding environment healthy.

#### **Incentives**

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

- Low emitting materials calculator - <https://www.usgbc.org/resources/low-emitting-materials-calculator>

### 4.3.3 *Green Cleaning/Janitorial Supplies*

A large part in keeping a healthy atmosphere for a business or residency is using sustainable and healthy cleaning and janitorial supplies.

### **Incentives**

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

- Green Cleaning supplies database - <https://www.epa.gov/saferchoice/products>



## 5. BIO-DIVERSITY

### 5.1 Preservation of Native Species

Preservation of native plant habitats is an important part of maintaining biodiversity. By selecting native plants when making landscaping decisions helps preserve native species that support functioning ecosystems and wildlife.

#### Incentives

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

- Invasive species list for Missouri - <https://www.invasive.org/species/list.cfm?id=52>
- Native plants database that also includes suppliers directory - <https://www.wildflower.org/collections/collection.php?collection=MO>

### 5.2 Introduction of Native Species

Native plants are typically easy to take care of because they have evolved in local soils and climates to be resistant to local diseases and pests, require significantly less fertilizer, supplemental watering, and pesticides. Introducing native plants to the surrounding environment helps reduce the costs that go into maintaining the surrounding environment.

#### Incentives

[INCENTIVE]

*Resources:*

- Introduction to planting native plants - [http://www.plantnative.org/how\\_intro.htm](http://www.plantnative.org/how_intro.htm)
- Nonprofit that plants trees for Missouri - <http://moreleaf.org/about/mission-impact/>

#### 5.2.1 Pollinator-friendly Plants

When making landscaping decisions on plants, it is very beneficial to the surrounding environment to use pollinator-friendly plants. Pollinators are vital to maintaining healthy ecosystems and are essential for plant

reproduction, keeping commercial and residential gardens healthy and minimizing the cost of replacing plants.

### **Incentives**

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

- Resources and information on pollinator-friendly plants and who supplies them - <http://xerces.org/pollinators-south-central-region/>
- Missouri Botanical Garden list of pollinator-friendly plants - <http://www.missouribotanicalgarden.org/gardens-gardening/your-garden/help-for-the-home-gardener/advice-tips-resources/visual-guides/native-plants-to-attract-bees.aspx>

## **5.3 Wildlife-friendly Building Design**

When in the designing phase of a project, it is important for the preservation of wildlife to design the building in a way that complements the surrounding ecosystem and wildlife. Designs such as bird-friendly windows and sites friendly to nests help minimize the impact on the surrounding wildlife.

### **Incentives**

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

- Lists information and products that make bird-friendly windows - <https://abcbirds.org/get-involved/bird-smart-glass/>

## 6. OTHER

### 6.1 Integrated Education/Awareness

Still working on this...

### 6.2 Indoor Air Quality

Understanding and controlling common pollutants indoors can reduce the risk of indoor health concerns. Keeping buildings adequately ventilated, reducing volatile organic compounds, removing microbial contaminants, and source control are all strategies that can be used to improve indoor air quality in buildings.

#### Incentives

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

- Minimum Indoor Air Quality Performance Calculator - <https://www.usgbc.org/resources/minimum-indoor-air-quality-performance-calculator>

### 6.3 Dark-Sky Friendly fixtures

Making outdoor lighting choices that minimize glare, unnecessary brightness, and shield the light source help reduce the harmful effects of light pollution and complement the dark sky. Making sustainable outdoor lighting choices also helps reduce the amount of energy used and increases energy efficiency.

#### Incentives

[INCENTIVE]

*Compliance Documentation:*

*Resources:*

- Database of products that are Dark Sky-Friendly - <http://darksky.org/fsa/fsa-products/>
- Lighting costs calculator from Dark Sky Society - <http://www.darksksociety.org/lightcost/index.php>



