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

# AGENDA

## GREEN PRACTICES COMMISSION MEETING

**Thursday, September 13, 5:30 – 7:00 p.m.**

Heman Park Community Center, 975 Pennsylvania Avenue

1. Roll Call
2. Opening Round
3. Approval of Minutes
   a. 08/09/18 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. Renew Missouri – Green Tariff Program: Vote on endorsement of signing a letter of support – *See attached Green Tariff Program Summations in Missouri and email correspondence with Phil Valko, Assistant Vice Chancellor for Sustainability*
6. Old Business
   a. Sustainable Practices Guidelines (Developmental Green Practices): Review document and grid, how can success be measured – *See attached DRAFT Sustainable Practices Guidelines*
7. Commission Reports
   a. Council Liaison Update
   b. Quarterly Report – Education/Advocacy: Timothy Dugan
8. Closing Round
9. Adjournment

Renew Missouri
409 Vandiver Drive, Building 5, Suite 205
Columbia, MO 65202
**Phone** 573-303-0394
**Fax** 573-303-5633
info@renewmo.org
www.renewmo.org

**Green Tariff Summations in Missouri**

**Ameren MO's "Renewable Choice Program" (i.e. Green Tariff) Public Service Commission ("PSC") Case Number ET-2018-0063**

*I. Structure*

- Ameren will file plans to own wind farms or through purchase power agreements (PPA's).
  - May own up to 200 MW of wind capacity.
  - Utilization of in-state wind resources is preferred source of wind energy.

- Ameren will commit the output to subscribing customers for a 15-year term.

  Wind power associated with Green Tariff WILL NOT be considered as a replacement for Renewable Energy Standards ("RES") UNLESS a company unsubscribes, at which point the wind generated can be applied to RES for Ameren.

- Customers will earn Renewable Energy Credits for participation in the program.
  - Program is in addition to, not a replacement of, usual electric services/rates.
  - Programs allows eligible customers to buy both the energy from a renewable energy project and the renewable energy credits.

- Differential between program costs/revenues will be shared by Ameren & participating retail customers.
  - 50% of differential allocated for recovery from/return to retail customers.

- Eligible Customers:
  - Governmental entities such as cities, towns, municipalities of any size
  - Companies w/load of 2.5 MW or greater.

*II. Benefits*

- Counters retail customers' likelihood of contracting for off-site resources:
  - Lowers costs to rate-base when large retailers do not bypass utility by purchasing energy from a 3rd party.

- Prevents need to contract for onsite resources, which lower contributions to covering utility's fixed costs.

- Regulated option to purchase green energy/RECs is a more practical option for small customers who have fewer resources/less purchasing power.

- Customer subscriptions to renewable energy (of 15 years) will subsidize development of wind generation which will be incorporated into Ameren's portfolio by 2037.
  - Wind turbines expected to last (w/maintenance) 30-40 years; their development will be subsidized by retail participants in green tariff program. When wind from these projects

enters Ameren's portfolio (once the contracts are up), customers will not absorb cost of building wind infrastructure.

*III. Outcome*

- The Public Service Commission approved this program on June 27th of 2018, and Company now in planning and pricing stages. Customers will eventually be able to submit an application of some kind. Renew Missouri planning outreach to public entities such as municipalities and state agencies.

**Kansas City Power & Light's "Renewable Choice Program" (i.e. Green Tariff) PSC Case Numbers ER-2018-0245 and ER-2018-0246***

*I. Structure*

- Non-residential, voluntary program available to:
  - Annual avg. peak demand > 200kW
  - Aggregated load of at least 2.5 MW w/avg. load at least 200 kW/account
  - Government entities (villages, towns, cities)
  - Available on a 1st come, 1st served basis until 200 MW accounted for

- Retail customers can apply for up to 100% of energy usage
- 5, 10, & 20 year subscriptions are available
- Cost of all unsubscribed energy and RECs will be borne by participating/non-participating retail customers

*II. Benefits*

- Counters retail customers' likelihood of contracting for off-site resources:
  - Lowers costs to rate-base when large retailers do not bypass utility by purchasing energy from a 3rd party.

- Preempts retail customer's need to contract for onsite resources (which lower contributions to covering utility's fixed costs).

- Regulated option to purchase green energy/RECs is a more practical option for small customers who have fewer resources/less purchasing power.

*III. Outcome*

- The rate cases are pending. Renew Missouri has offered testimony not only supporting the green tariff proposal but offering suggestions to make them stronger.

*Kansas City Power & Light ("KCPL") is technically two utilities: KCPL and KCPL- Greater Missouri Operations ("GMO"). Both must seek rate increases separately; hence the need for two rate cases.

**Post-script**: Empire Electric offered a Green Tariff program in the early 2000's but was discontinued. Current management indicates they will file an improved program in the near future.

**Jenny Wendt**

**Subject:** FW: Renew Missouri - Green Tariffs

**From:** Valko, Phil [mailto:valko@wustl.edu]
**Sent:** Wednesday, August 29, 2018 2:03 PM
**To:** Jenny Wendt <jwendt@ucitymo.org>; Emily Andrews (emily.andrews@mobot.org) <emily.andrews@mobot.org>; Aaron Young (aaron.young@ewgateway.org) (aaron.young@ewgateway.org) <aaron.young@ewgateway.org>
**Subject:** RE: Renew Missouri - Green Tariffs

Hi Jenny,

Ameren's Renewable Choice Program is a utility-brokered Virtual Power Purchase Agreement (VPPA). VPPAs are essentially a financial derivative that is used to provide guarantee that allows new wind or solar projects to be built. VPPAs have been a common tool that large businesses and institutions use to develop off-site renewable energy. Some examples include a 47 MW solar farm that MIT helped build in North Carolina and a ~300 MW wind farm that AB-InBev helped build in Oklahoma.

How they work: the customer (U City or WU) enters into a long-term agreement (often 10-20 years) with a renewable energy developer and agrees on a "strike price" for the energy that will be generated. This guarantee allows the RE developer to secure financing to build new wind or solar. Once the project is built and generating energy, the RE developer sells the energy on the wholesale market where prices fluctuate moment to moment and day to day based on supply and demand. If the agreed strike price is $30/MWh and the RE developer is able to sell the energy to the wholesale market for $35/MWh, the customer (U City or WU) will earn the difference or $5/MWh. On the other hand, if the RE developer is only able to sell the energy for $23/MWh, the customer will have to pay the difference or $7/MWh.

The devil is really in the details: where is the wind or solar project located, what is the strike price, does the contract include collars to limit the customers' liability (ex: customer is only responsible for up to $5/MWh difference).

None of these details are known for the Ameren program. Since the initial expression of interest is non-binding until Ameren releases the "RE Price" (same as the strike price) and the project location, I would suggest U City express interest in the program to hold a place. Once those details come out, many entities, including WU, will be evaluating the arrangement to determine the balance of risk/reward, and we can discuss what we learn.

In parallel, WU will soon be hiring a technical advisor to educate our internal stakeholders about VPPAs and help us explore options on the open market -- Ameren will only be bringing one option forward and we would like to know what else is out there. It's possible that the Ameren program will come back with a cost that is competitive with the open market, but it's also possible that it will cost a premium. We want to know which it is before we commit to the program. As part of our contract with the technical advisor, we have kept the option open to invite partners, like UCity, MOBOT, and the City of St. Louis, to participate in the learning phase with us. Any interest?

-Phil

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**From:** Jenny Wendt [mailto:jwendt@ucitymo.org]
**Sent:** Wednesday, August 29, 2018 11:45 AM
**To:** Emily Andrews (emily.andrews@mobot.org) <emily.andrews@mobot.org>; Valko, Phil <valko@wustl.edu>; Aaron Young (aaron.young@ewgateway.org) (aaron.young@ewgateway.org) <aaron.young@ewgateway.org>
**Subject:** FW: Renew Missouri - Green Tariffs

Can you all please tell me your opinion on Renew Missouri's Green Tariffs program?

**Jennifer Wendt**
*Senior Project Manager*
City of University City
6801 Delmar Boulevard
University City, MO 63130
P: 314.505.8562 | www.ucitymo.org


**From:** Andrew Linhares [mailto:andrew@renewmo.org]
**Sent:** Tuesday, August 28, 2018 3:53 PM
**To:** Jenny Wendt <jwendt@ucitymo.org>
**Cc:** James Owen <james@renewmo.org>; A JOHN SOLODAR <ajsolodar@yahoo.com>
**Subject:** Re: Renew Missouri - Green Tariffs

Jenny and John,

Thanks for the meeting today. It's great to hear that University City is interested in this program. Attached is the information we have on the program at the moment, including: 4 tariff sheets with all the details of the program; and a fact sheet we prepared to help explain it in lay terms.

As I said, by sometime next week, we should have a website, FAQs, and application materials from Ameren that will shed a lot more light on things. I will pass that along to you when it exists. From there, it'll just be a question of completing the "Expression of Interest" application or letter, getting whatever approval you need from your Green Practices Commission, and turning that in to Ameren.

Thanks again, and we'll be in touch!

Andrew Linhares
Regional Director & Senior Counsel
Renew Missouri
3115 S Grand Blvd, Suite 600
St. Louis, MO 63118
Andrew@renewmo.org
(314) 471-9973

# 2018

# University City Sustainable Practices Guidelines

# DRAFT

# Sustainable Development Guidelines

**City of University City**

Developed by the U City Green Team (Jenny Wendt, Senior Project Manager)

**Overview**: The Sustainable Development Guidelines are a working document in development by the University City Green Team, an interdepartmental work group committed to promoting sustainable practices in U City through all government functions. The Green Team is working in collaboration with regional partners (listed below).

**Purpose:** The purpose of these guidelines is to give developers a comprehensive list of sustainable practices that University City recommends, incentivizes, or requires for development. By providing a clear list of options and resources, the document will present the wide array of opportunities for environmentally-conscious building practices. This is part of our effort to reach the OneSTL sustainable guidelines recently approved by Council.

The Guidelines are a working document, meant to be updated and improved going forward. The Green Team will continue to seek new ways to incentivize sustainable practices in ways that do not hinder development. University City has long been a leader of sustainable practices in the St. Louis region. Our regional partners have expressed their support and excitement that U City is leading the way with this forward-thinking set of guidelines. Staff will continue to work with our partners, City Council, and developers to strengthen this document and facilitate green development in our community.

**Using the Document**: The document is envisioned to eventually be part of the City's website. Developers would be directed to the site in the early stages of their planning process for guidance. The grid is a "menu" of options for making any development more environmentally-friendly. These are demarcated as required, incentivized, or recommended, and the supporting document gives the developer resources to further explore the feasibility of these options. Ultimately, the guidelines will provide a clear, user-friendly way for developers to incorporate more sustainable elements into their work.

**Regional Partners**:

- Jean Ponzi, Green Resource Manager, Botanical Garden Earthways Center
- Emily Andrews, Executive Director, US Green Building Council Missouri Gateway Chapter
- Aaron Young, Sustainability Planning Manager, East/West Gateway OneSTL
- Lois Sechrist, Environmental Stewardship Analyst, Ascension Health Care System
- Joe Martinich, Professor Emeritus of Supply Chain Management and Analytics, University of Missouri – St. Louis, And Energy & Environment Committee Chairperson, City of Creve Coeur, MO
- The University City Green Practices Commission

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# 1. WATER AND GREEN INFRASTRUCTURE

## 1.1 Erosion Control during Construction

Effective erosion controls handle surface runoff and are important techniques in preventing water pollution, soil loss, wildlife habitat loss and human property loss. University City requires a plan to minimize sediment movement for all projects disturbing land.

**Requirements:**

- This is a required practice. Any land disturbance activity involving one (1) acre or more of land, or a site involving less than one (1) acre that is part of a proposed development that will ultimately disturb one (1) acre or more require Major Land Disturbance Permits through St. Louis County and the Department of Natural Resources.
- Site grading and erosion control is also required for land disturbance less than 1 acre. See Section 405.140, 405.280, 405.490, 405.510 of the municipal code for details.

**Incentives:**

- Not Available

**Resources:**

| | |
|---|---|
| Metropolitan St. Louis Sewer District (MSD) Stormwater Best Management Practices (BMP) Toolbox | https://www.stlmsd.com/what-we-do/stormwater-management/bmp-toolbox |
| Metropolitan St. Louis Sewer District (MSD) Landscape Guide for Stormwater Best Management Practice Design | https://www.stlmsd.com/sites/default/files/engineering/442680.PDF |
| Metropolitan St. Louis Sewer District (MSD) Site Design Guidance | https://www.stlmsd.com/sites/default/files/engineering/474685.PDF |
| University City Municipal Code, Ordinance 7065 regarding erosion control for Major Land Disturbance (1 acre and over) | https://www.ecode360.com/documents/UN3457/source/LF1020263.pdf |
| University City Municipal Code, Sections 405.140, 405.280, 405.490, 405.510 | https://www.ecode360.com/28295169<br>https://www.ecode360.com/28295288<br>https://www.ecode360.com/28295514<br>https://www.ecode360.com/28295541<br>*(405.510 as edited per ordinance 7060):* https://www.ecode360.com/documents/UN3457/source/LF1020258.pdf |

## 1.2 Post-Construction Stormwater Solutions

Post-construction stormwater management in areas undergoing new development or redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving water bodies. Prior planning and design for the minimization of pollutants in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management. Following construction of a new development or re-development, post construction stormwater solutions attempt to reduce pollutants in post-construction runoff.

**Requirements:**

- This is a required practice for land disturbance projects encompassing more than one acre. Post-Construction Stormwater Solutions shall apply to site design for any project which includes alteration of site drainage or floodplain areas, connection to storm sewer systems or open storm water channels, and all land disturbance projects encompassing one (1) acre or more of land, or a site involving less than one (1) acre that is part of a proposed development that will ultimately disturb one (1) acre or more.
- While specific stormwater solutions are not required for projects less than one (1) acre, every development shall be designed to control stormwater runoff. See section 405.490 – Utilities, Sanitary and Storm Sewers – of the municipal code for more details.

**Incentives:**

- In Planned Development Districts: Site coverage bonus: The Plan Commission may recommend and the City Council may approve an increase in maximum site coverage from seventy percent (70%) up to ninety percent (90%). In order to qualify for this bonus, the development plan must demonstrate compliance with four (4) or more of the performance criteria. Please see Section 400.780 – Density and Dimensional Regulations and Performance Standards – of the municipal code for more details.

- The Metropolitan Sewer District (MSD) offers a Non-Sewered Water Credit for businesses that divert some of the water they use away from the sewer system. This credit reduces the amount of wastewater services businesses are charged. Please visit MSD's website or click here for more information on this credit.

**Resources:**

| | |
|---|---|
| Metropolitan St. Louis Sewer District (MSD) Site Design Guidance | https://www.stlmsd.com/sites/default/files/engineering/474685.PDF |
| Metropolitan St. Louis Sewer District (MSD) Landscape Guide for Stormwater Best Management Practice Design | https://www.stlmsd.com/sites/default/files/engineering/442680.PDF |
| Metropolitan St. Louis Sewer District (MSD) Non-Sewered Water Credit | https://www.stlmsd.com/sites/default/files/engineering/Non-Sewered%20Water%20Credit%20June%202017%20Brochure.pdf |
| University City Municipal Code, Ordinance 7060 regarding post construction stormwater management for Major Land Disturbance (1 acre and over) | https://www.ecode360.com/documents/UN3457/source/LF1020263.pdf |
| University City Municipal Code section 400.490 | https://www.ecode360.com/28295514 |
| University City Municipal Code section 400.780 | https://www.ecode360.com/28293321 |

Below are also specific strategies to incorporate storm drainage/retention facilities for the site:



### *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.

**Requirements:**

- Not specifically required; but may be used to satisfy post construction stormwater requirements. See section 1.2.

**Incentives:**

- See section 1.2 (Planned Development Districts)

**Resources:**

| | |
|---|---|
| Permeable Interlocking Paver Effectiveness Calculator and Permeable Interlocking Paver Cost Calculator | https://pacificpavingstone.com/permeable-calculator/<br><br>https://www.remodelingexpense.com/costs/cost-of-permeable-paver/ |
| Metropolitan St. Louis Sewer District (MSD) Site Design Guidance | https://www.stlmsd.com/sites/default/files/engineering/474685.PDF |
| University City Municipal Code section 400.780 | https://www.ecode360.com/28293321 |

### *1.2.2 Runoff Landscaping for Parking Lots*

The most important function of parking lot landscaping is to provide natural drainage, a water collection network, and stormwater filtration. Landscaping can also enhance the aesthetic quality of the space and help reduce temperatures in the summer by providing shade.

**Requirements:**

- Not specifically required; but may be used to satisfy post construction stormwater requirements. See section 1.2.

**Incentives:**

- See section 1.2 (Planned Development Districts)

**Resources:**

| | |
|---|---|
| Green Values Stormwater Toolbox and Low Impact Development(LID) Practices Costing Tool | http://greenvalues.cnt.org/<br><br>https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/low-impact-development/low-impact-development-life-cycle-costs/ |

**Resources continued:**

| | |
|---|---|
| Metropolitan St. Louis Sewer District (MSD) Site Design Guidance | https://www.stlmsd.com/sites/default/files/engineering/474685.PDF |
| Metropolitan St. Louis Sewer District (MSD) Landscape Guide for Stormwater Best Management Practice Design | https://www.stlmsd.com/sites/default/files/engineering/442680.PDF |
| University City Municipal Code section 400.780 | https://www.ecode360.com/28293321 |

### *1.2.3 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.

**Requirements:**

- Not specifically required; but may be used to satisfy post construction stormwater requirements. See section 1.2.

**Incentives:**

- See section 1.2 (Planned Development Districts)

**Resources:**

| | |
|---|---|
| Metropolitan St. Louis Sewer District (MSD) Site Design Guidance | https://www.stlmsd.com/sites/default/files/engineering/474685.PDF |
| Green Values Green Roof Savings Calculator and Low Impact Development(LID) Practices Costing Tool | http://greenvalues.cnt.org/calculator/calculator.php<br><br>https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/low-impact-development/low-impact-development-life-cycle-costs/ |
| University City Municipal Code section 400.780 | https://www.ecode360.com/28293321 |

## 1.3 Water Conservation

Fresh, clean water is a limited resource. While most of the planet is covered in water, most is salt water that can only be consumed by humans and other species after undergoing desalination, which is an expensive process. Occurrences such as droughts further limit access to clean and fresh water, meaning people need to take steps to reduce water use and save as much water as possible. In some areas of the world, access to water is limited due to contamination. People who have access to fresh water can take steps to limit their use of water to avoid waste. University City has adopted the International Plumbing Code (IPC) of 2012; along with the ideas and regulations for gray water recycling systems in the IPC, below are a few recommended practices for rainwater recycling systems:



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

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

**Required:**

- Not specifically required; but may be used to satisfy post construction stormwater requirements. See section 1.2.

**Incentives:**

- Not available

**Resources:**

| | |
|---|---|
| Rainwater Collection Potential Calculator and Low Impact Development(LID) Practices Costing Tool | https://www.watercache.com/resources/rainwater-collection-calculator<br><br>https://sustainabletechnologies.ca/home/urban-runoff-green-infrastructure/low-impact-development/low-impact-development-life-cycle-costs/ |
| Metropolitan St. Louis Sewer District (MSD) Site Design Guidance | https://www.stlmsd.com/sites/default/files/engineering/474685.PDF |

### *1.3.2 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.

**Required:**

- Not specifically required; but may be used to satisfy post construction stormwater requirements. See section 1.2.

**Incentives:**

- See section 1.2 (Planned Development Districts)

**Resources:**

| | |
|---|---|
| Rain Garden Alliance Calculator | http://raingardenalliance.org/right/calculator |
| Metropolitan St. Louis Sewer District (MSD) Site Design Guidance | https://www.stlmsd.com/sites/default/files/engineering/474685.PDF |
| Metropolitan St. Louis Sewer District (MSD) Landscape Guide for Stormwater Best Management Practice Design | https://www.stlmsd.com/sites/default/files/engineering/442680.PDF |
| University City Municipal Code section 400.780 | https://www.ecode360.com/28293321 |

### *1.3.3 Indoor Water Efficiency*

A great deal of potable water is used indoors, with Americans using about 70% of their water inside their homes, according to the US EPA. In fact, the American Water Works Research Foundation performed a 1999 study in which they found that Americans use 26.7% of indoor water in the toilet, 21.7% in the clothes washer, 16.8% in the shower, and 15.7% from faucets. Nearly 14% is attributed to leaks and 5.3% is from other sources. Water-efficient plumbing fixtures (ultra low-flow toilets and urinals, waterless urinals, low-flow and sensored sinks, low-flow showerheads, and water-efficient dishwashers and washing machines) are some ways to increase water conservation.

**Required:**

- Not Required

**Incentives:**

- Not Available

**Resources:**

| | |
|---|---|
| Water Footprint Calculator Guide to Reducing Indoor Water Use | https://www.watercalculator.org/water-use/indoor-water-use-at-home/ |
| Improving Water Efficiency Guide | https://www.buildings.com/article-details/articleid/6461/title/improving-water-efficiency-in-your-building |
| The Federal Energy Management Program Estimating Methods for Determining End-Use Water Consumption | https://www.energy.gov/eere/femp/estimating-methods-determining-end-use-water-consumption |
| ENERGY STAR Portfolio Manager – track your water usage | https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/save-energy/save-water-save-energy |
| EPA WaterSense | https://www.epa.gov/watersense |

# 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 some examples, resources, and available incentives.

### *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.

**Required:**

- Not required.

**Incentives:**

- The Bipartisan Budget Act of 2018 extended the federal tax credit for renewable energy, and federal tax credits are available for solar power. Please see the Bipartisan Budget Act of 2018 for information on renewable 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.
- Property Assessed Clean Energy (PACE) funding is available for energy efficiency and renewable energy projects to eligible property owners.

**Resources:**

| | |
|---|---|
| Solar Panel Cost Calculator | https://www.solar-estimate.org/solar-panel-calculators |
| Wholesale Solar's Off Grid Calculator | https://www.wholesalesolar.com/solar-information/start-here/offgrid-calculator |
| Ameren Energy Efficiency Programs | https://www.ameren.com/missouri/energy-efficiency |
| Bipartisan Budget Act of 2018 Energy Investment Tax Credit Summary | http://programs.dsireusa.org/system/program/detail/658 |
| PACE Funding Opportunities for University City Properties | http://www.mo-esp.com/<br><br>https://www.mced.mo.gov/<br><br>http://www.showmepace.org/ |

### *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.

**Required:**

- Not required.

**Incentives:**

- The Bipartisan Budget Act of 2018 extended the federal tax credit for renewable energy, and federal tax credits are available for wind power. Please see the Bipartisan Budget Act of 2018 for information on renewable tax credits.
- Property Assessed Clean Energy (PACE) funding is available for energy efficiency and renewable energy projects to eligible property owners.

**Resources:**

| | |
|---|---|
| Wind Power Cost and Efficiency Calculators | http://www.energygroove.net/energy-cost/wind-turbine-calculator/<br><br>http://www.energyefficientchoices.com/resources/wind-power-system-sizing-calculator.html |
| PACE Funding Opportunities for University City Properties | http://www.mo-esp.com/<br><br>https://www.mced.mo.gov/<br><br>http://www.showmepace.org/ |
| Bipartisan Budget Act of 2018 Energy Investment Tax Credit Summary | http://programs.dsireusa.org/system/program/detail/658 |

### *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.

**Required:**

- Not required.

**Incentives:**

- Ameren Missouri program offers cash incentives for virtually any cost-effective energy efficiency project.
- The Bipartisan Budget Act of 2018 extended the federal tax credit for renewable energy, and federal tax credits are available for geothermal power. Please see the Bipartisan Budget Act of 2018 for information on renewable tax credits.

- Property Assessed Clean Energy (PACE) funding is available for energy efficiency and renewable energy projects to eligible property owners.

**Resources:**

| | |
|---|---|
| Clean Energy Emission Reduction(CLEER) Tool | https://www.cleertool.org/ |
| Ameren Energy Efficiency Programs | https://www.ameren.com/missouri/energy-efficiency |
| PACE Funding Opportunities for University City Properties | http://www.mo-esp.com/<br>https://www.mced.mo.gov/<br>http://www.showmepace.org/ |
| Bipartisan Budget Act of 2018 Energy Investment Tax Credit Summary | http://programs.dsireusa.org/system/program/detail/658 |

## 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.

**Required:**

- This is a required practice. As University City has adopted the 2012 IECC, projects must be energy efficient per the 2012 IECC.

**Incentives:**

- Ameren Missouri program offers cash incentives for virtually any cost-effective energy efficiency project.
- Spire offers rebates for energy efficiency measures as well as Energy audits.
- Property Assessed Clean Energy (PACE) funding is available for energy efficiency and renewable energy projects to eligible property owners.
- The Energy Efficient Home Credit is a federal tax credit extended by the Bipartisan Budget Act of 2018, and is used to claim a credit for each qualified energy efficient home sold or leased to another person.

**Resources:**

| | |
|---|---|
| Clean Energy Emission Reduction(CLEER) Tool | https://www.cleertool.org/ |
| Ameren Energy Efficiency Programs | https://www.ameren.com/missouri/energy-efficiency |
| Spire Rebates and Offers | https://www.spireenergy.com/rebates-offers |
| PACE Funding Opportunities for University City Properties | http://www.mo-esp.com/<br><br>https://www.mced.mo.gov/<br><br>http://www.showmepace.org/ |
| Energy Efficient Home Credit | https://www.irs.gov/forms-pubs/form-8908-energy-efficient-home-credit |

### *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.

**Required:**

- Building envelopes must be energy efficient per the 2012 IECC.

**Incentives**

- Ameren Missouri program offers cash incentives for virtually any cost-effective energy efficiency project.
- Spire offers rebates for energy audits.
- Property Assessed Clean Energy (PACE) funding is available for energy efficiency and renewable energy projects to eligible property owners.

**Resources:**

| | |
|---|---|
| Cost of Metal Building Insulation Calculator | https://www.remodelingexpense.com/costs/cost-metal-building-insulation/ |
| Cost to Install Wall Insulation Calculator | https://www.homewyse.com/services/cost_to_install_wall_insulation.html |
| Ameren Energy Efficiency Programs | https://www.ameren.com/missouri/energy-efficiency |
| Spire Rebates and Offers | https://www.spireenergy.com/rebates-offers |
| PACE Funding Opportunities for University City Properties | http://www.mo-esp.com/<br><br>https://www.mced.mo.gov/<br><br>http://www.showmepace.org/ |

### *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 and using energy-efficient windows that allow for more natural light will increase the efficiency of lighting practices in a business or residency.

**Required:**

- Lighting must be energy efficient per the 2012 IECC.

**Incentives:**

- Ameren Missouri offers a wide range of incentives and rebates related to replacements of interior lighting.

**Resources:**

| | |
|---|---|
| Electricity Usage of a CFL Light Bulb Calculator | http://energyusecalculator.com/electricity_cfllightbulb.htm |
| Lightbulb Energy Savings Calculator | https://www.bulbs.com/learning/energycalc.aspx |
| Ameren Energy Efficiency Programs | https://www.ameren.com/missouri/energy-efficiency |

## 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.

**NOTE: There is a federal energy efficiency credit for household contractors!**

**The Energy Efficient Home Credit is a federal tax credit extended by the Bipartisan Budget Act of 2018, and is used to claim a credit for each qualified energy efficient home sold or leased to another person.**

### *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. Please see the International Mechanical Code of 2012 (adopted by University City) for regulations of HVAC systems.

**Required:**

- HVAC must be energy efficient per the 2012 IECC.

**Incentives:**

- The Energy Efficient Home Credit is a federal tax credit extended by the Bipartisan Budget Act of 2018, and is used to claim a credit for each qualified energy efficient home sold or leased to another person.
- Ameren offers multiple incentives for HVAC equipment, ranging from refrigeration, electric water heating, and steam cookers.
- Spire offers rebates ranging from saving $500 on HVAC system and components to saving $15,000 on boiler heating systems and components.

**Resources:**

| | |
|---|---|
| Energy- and Cost-Savings Calculators for Energy-Efficient Products | https://www.energy.gov/eere/femp/energy-and-cost-savings-calculators-energy-efficient-products |
| Ameren Energy Efficiency Programs | https://www.ameren.com/missouri/energy-efficiency |
| Spire Rebates and Offers | https://www.spireenergy.com/rebates-offers |
| Energy Efficient Home Credit | https://www.irs.gov/forms-pubs/form-8908-energy-efficient-home-credit |

### *2.3.2 Cool Roofs*

A cool roof is a roof that has been designed in such a way as 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.

**Required:**

- Not required.

**Incentives:**

- Ameren offers custom rebates for any energy saving measures at the commercial level, and these incentives may include cool roofs.
- Spire offers rebates for measures taken that reduce the heating load.

**Resources:**

| | |
|---|---|
| Oak Ridge National Laboratory Roof Savings Calculators | https://web.ornl.gov/sci/buildings/tools/cool-roof/<br>https://rsc.ornl.gov/ |
| Ameren Energy Efficiency Programs | https://www.ameren.com/missouri/energy-efficiency |
| Spire Rebates and Offers | https://www.spireenergy.com/rebates-offers |

## 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.

**Required:**

- Not required.

**Incentives:**

- Spire offers rebates for savings up to $750 on energy audits.
- Ameren Missouri custom incentives may apply for commissioning or installing building controls.

**Resources:**

| | |
|---|---|
| Building Commissioning Guide | https://www.gsa.gov/real-estate/design-construction/commissioning/commissioning-program |
| U.S. Green Building Council – Missouri Gateway Chapter Benchmarking Case Studies | http://www.usgbc-mogateway.org/betterbuildingsstl/ |
| Energy Star – Benchmarking Guide | https://www.energystar.gov/buildings/about-us/how-can-we-help-you/benchmark-energy-use/benchmarking |
| Ameren Energy Efficiency Programs | https://www.ameren.com/missouri/energy-efficiency |
| Spire Rebates and Offers | https://www.spireenergy.com/rebates-offers |

## 2.5 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.

**Required:**

- Not required.

**Incentives:**

- Businesses located within one thousand (1000) feet of a public transit station will have their off-street parking requirements reduced by fifteen percent (15%). See Section 400.2130 of the municipal code for more details.
- Businesses located within five hundred (500) feet of a public transit stop will have their off-street parking requirements reduced by ten percent (10%). See Section 400.2130 of the municipal code for more details.
- In Planned Development Districts: Site coverage bonus: The Plan Commission may recommend and the City Council may approve an increase in maximum site coverage from seventy percent (70%) up to ninety percent (90%). In order to qualify for this bonus, the development plan must demonstrate compliance with four (4) or more of the performance criteria. Please see Section 400.780 – Density and Dimensional Regulations and Performance Standards – of the municipal code for more details.

**Resources:**

| | |
|---|---|
| St. Louis County Policy Brief: Transportation | https://www.stlouisco.com/Portals/8/docs/document%20library/planning/strategicplan2013/Transportation%20Final.pdf |
| University City Municipal Code section 400.2130 | https://www.ecode360.com/28294464 |
| University City Municipal Code section 400.780 | https://www.ecode360.com/28293321 |

## 2.6 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.

### *2.6.1 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.

**Required:**

- Not required.

**Incentives:**

- University City will lower the parking space requirements by one(1) vehicle parking space for each five(5) bicycle parking spaces provided a maximum reduction of three(3) vehicle parking spaces. See Section 400.2130 of the municipal code for more details.

**Resources:**

| | |
|---|---|
| Information and minor cost analysis of bike storage facilities | http://www.pedbikeinfo.org/planning/facilities_bike_bikeparking.cfm |
| University City Municipal Code section 400.2130 | https://www.ecode360.com/28294464 |

## 2.7 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, such as are the construction of separate-grade pedestrian and bicycle paths, businesses can benefit from increased traffic from pedestrians and public-use vehicles.

**Required:**

- Not required.

**Incentives:**

- Businesses located within one thousand (1000) feet of a public transit station will have their off-street parking requirements reduced by fifteen percent (15%). See Section 400.2130 of the municipal code for more details.
- Businesses located within five hundred (500) feet of a public transit stop will have their off-street parking requirements reduced by ten percent (10%). See Section 400.2130 of the municipal code for more details.
- In Planned Development Districts: Site coverage bonus: The Plan Commission may recommend and the City Council may approve an increase in maximum site coverage from seventy percent (70%) up to ninety percent (90%). In order to qualify for this bonus, the development plan must demonstrate compliance with four (4) or more of the performance criteria. Please see Section 400.780 – Density and Dimensional Regulations and Performance Standards – of the municipal code for more details.

**Resources:**

| | |
|---|---|
| Designing Example of Transit-Oriented Development | https://www.cata.org/Portals/0/EasyDNNNews/CATA-TOD-Handbook-2nd-Edition.pdf |
| University City Municipal Code section 400.2130 | https://www.ecode360.com/28294464 |
| University City Municipal Code section 400.780 | https://www.ecode360.com/28293321 |

# 3. MATERIALS

## 3.1 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. Multiple outlets for recycling are in or nearby University City.

**Required:**

- Not required.

**Incentives:**

- Not Available

**Resources:**

| | |
|---|---|
| LEEDv4 Construction and Demolition Waste Diversion Calculator | https://www.usgbc.org/resources/construction-and-demolition-waste-calculator |
| Concrete and Asphalt Recycling Facility Location | 6515 Page Ave, St. Louis, MO 63133 |
| Cardboard and Single Stream Recycling Location | 975 Pennsylvania, University City, MO 63130 |
| Metals Recycling Location | 6540 Dr. Martin Luther King Dr., St. Louis, MO 63133 |
| LEDR Construction and Demolition Recycling Facility Location | 60 MB Corporate Park Ct, St Charles, MO 63301 |

## 3.2 Environmentally Preferable Building Materials

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

**Required:**

- Not required.

**Incentives**

- Not Available

**Resources:**

| | |
|---|---|
| Green Building Materials Database | https://www.greenbuilt.org/resources/green-building-materials/ |
| Product Information Search Engine | https://spot.ul.com/ |



## 3.3 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:

### *3.3.1 Waste Disposal and Recycling*

Planning for efficient and effective 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 infrastructure is in place prior to construction for efficient trash and recycling collection and disposal during construction and for the life of the development.

**Required:**

- Not required

**Incentives:**

- Not Available

**Resources:**

| | |
|---|---|
| Managing and Reducing Wastes: A Guide for Commercial Buildings | https://www.epa.gov/smm/managing-and-reducing-wastes-guide-commercial-buildings |
| University City Solid Waste | https://www.ucitymo.org/690/Trash-Recycling-Yardwaste-Leaf-Collectio |

### *3.3.2 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.

**Required:**

- Not required

**Incentives:**

- Not Available

**Resources:**

| | |
|---|---|
| Low Emitting Materials Calculator | https://www.usgbc.org/resources/low-emitting-materials-calculator |



### *3.3.3 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.

**Required:**

- Not required

**Incentives:**

- Not Available

**Resources:**

| | |
|---|---|
| Safer Choice Standard Supplies Database | https://www.epa.gov/saferchoice/products |



# 4. BIO-DIVERSITY

## 4.1 Preservation of Native Species

Preservation of native plant habitants 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. Native plants are often superior to exotic plants in terms of stormwater management because they usually have deeper and more extensive root systems that prevent erosion and provide extra filtration. Since natives also require little to no fertilizer or chemical applicants, both of which can harm stream ecosystems, they are also superior for improving water quality.

**Required:**

- Not specifically required; but may be used to satisfy post construction stormwater requirements. See section 1.2.

**Incentives**

- Allowance is made in the Municipal Code for height of native plants. See section 220.290.

**Resources:**

| | |
|---|---|
| Invasive Species List for Missouri | https://www.invasive.org/species/list.cfm?id=52 |
| Native Plants Database and Suppliers Directory | https://www.wildflower.org/collections/collection.php?collection=MO |
| Metropolitan St. Louis Sewer District (MSD) Landscape Guide for Stormwater Best Management Practice Design | https://www.stlmsd.com/sites/default/files/engineering/442680.PDF |
| University City Municipal Code Section 220.290 | https://www.ecode360.com/28291021 |

## 4.2 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.

**Required:**

- Not specifically required; but may be used to satisfy post construction stormwater requirements. See section 1.2.

**Incentives**

- Allowance is made in the Municipal Code for height of native plants. See section 220.290.

**Resources:**

| | |
|---|---|
| Introduction to Planting Native Plants | http://www.plantnative.org/how_intro.htm |
| Forest ReLeaf of Missouri | http://moreleaf.org/about/mission-impact/ |
| University City Municipal Code Section 220.290 | https://www.ecode360.com/28291021 |
| Metropolitan St. Louis Sewer District (MSD) Landscape Guide for Stormwater Management | https://www.stlmsd.com/sites/default/files/engineering/442680.PDF |

### *4.2.1 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.

**Required:**

- Not required

**Incentives:**

- Not Available

**Resources:**

| | |
|---|---|
| Pollinator-friendly Plants Database and Resources | 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 |

## 4.3 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.

**Required:**

- Not required

**Incentives:**

- Not Available

**Resources:**

| | |
|---|---|
| Bird-friendly Windows | https://abcbirds.org/get-involved/bird-smart-glass/ |

# 5. OTHER

## 5.1 Tenant and Employee Education

Education of tenants and employees on sustainable practices is an integral part in making sure that maintenance facilities are being properly used and that sustainable actions are being taken appropriately. Things such as educational signage, meetings on sustainability, online modules, and more are all effective ways in educating employees and tenants.

**Required:**

- Not required

**Incentives:**

- Not Available

**Resources:**

| | |
|---|---|
| 8 Great Ways to Increase Employee Engagement in Sustainability | https://www.cultivatingcapital.com/ways-increase-employee-engagement-sustainability/ |
| 5 Ways to Get the Sustainability Conversation Started in Your Facility | https://www.buildings.com/news/industry-news/articleid/21106/title/5-ways-to-get-the-sustainability-conversation-started-in-your-facility |

## 5.2 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.

**Required:**

- Not required

**Incentives:**

- Not Available

**Resources:**

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



## 5.3 Dark-Sky Friendly Lighting

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.

**Required:**

- Not required

**Incentives:**

- Not Available

**Resources:**

| | |
|---|---|
| Dark Sky-friendly Lighting Database | http://darksky.org/fsa/fsa-products/ |
| Dark Sky Society Lighting Costs Calculator | http://www.darkskysociety.org/lightcost/index.php |



**Compliance Options for New Developments and Major Renovations***

## University City Sustainable Development Guidelines SUMMARY *DRAFT*

| Compliance Paths | Water and Green Infrastructure | | | Energy and Emissions | | | | Transit Oriented Development | | | Materials | | | Bio-diversity | | | | Other | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Erosion Control during Construction | Post Construction Stormwater Solutions | Water Conservation | Renewable Energy | Energy Efficiency (per 2012 IECC) | Energy Efficiency(exceed 2012 IECC) | Monitoring/Commissioning | Integrated Transit | Bicycle and Pedestrian Access and Amenities | Site Layout | Construction/Demolition Waste Diversion(50%) | Environmentally Preferable Building Materials | Sustainable Maintenance Practices | Preservation of Native Species | Introduction of Native Species | Pollinator-friendly Plants | Wildlife-friendly Building Design | Tenant and Employee Education | Indoor Air Quality | Dark-Sky Friendly Lighting |
| **Required Practices** | | | | | | | | | | | | | | | | | | | | |
| 1 Acre and Over | ✓ | ✓ | | | ✓ | | | | | | | | | | | | | | | |
| Under 1 Acre | ✓ | some | | | ✓ | | | | | | | | | | | | | | | |
| **Incentives** | | | | | | | | | | | | | | | | | | | | |
| Tax Credits/Abatement | | | | ✓ | ✓** | ✓** | | | | | | | | | | | | | | |
| Public Recognition/PR | *In Progress* | | | | | | | | | | | | | | | | | | | |
| Reduced Code Requirements | | ✓ | | | | | | ✓ | ✓ | ✓ | | | | ✓ | ✓ | | | | | |
| Utility Incentives | | | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | |
| PACE | | | | ✓ | ✓ | ✓ | | | | | | | | | | | | | | |
| Direct Operating Cost Savings | | | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | |

*May also apply toward repairs and smaller renovation per code

**Federal tax credit for contractors who sell or lease a home that has met the 50% energy efficient standard

**Compliance Options for New Developments and Major Renovations***

# University City Sustainable Development Guidelines EXPANDED *DRAFT*

| Compliance Paths | Water and Green Infrastructure | | | | | | | | | Energy and Emissions | | | | | | | | | | Transit Oriented Dev. | | | | Materials and Recycling | | | | | | Bio-diversity | | | | Other | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.1 Erosion Control During Construction | 1.2 Post Construction Stormwater Solutions | 1.2.1 Permeable Pavement | 1.2.2 Runoff Landscaping for Parking Lots | 1.2.3 Vegetated Roofs | 1.3 Water Conservation | 1.3.1 Rain Barrels, Rainwater Tanks, and Cisterns | 1.3.2 Rain Gardens | 1.3.3 Indoor Water Efficiency | 2.1 Renewable Energy | 2.1.1 Solar Power | 2.1.2 Wind Power | 2.1.3 Geothermal Power | 2.2 Energy Efficiency (per 2012 IECC) | 2.2.1 Efficient Building Envelope | 2.2.2 Energy Efficient Lighting Strategies | 2.3 Energy Efficiency (exceeding 2012 IECC) | 2.3.1 Energy-Efficient HVAC | 2.3.2 Cool Roofs | 2.4 Monitoring/Commissioning | 3.1 Integrated Transit (Ped, Bike, Bus, Light Rail) | 3.2 Bicycle and Pedestrian Access and Amenities | 3.2.1 Bike Storage and Changing Facilities | 3.3 Site Layout | 4.1 Construction/Demolition Waste Diversion | 4.2 Environmentally Preferable Building Materials | 4.3 Sustainable Maintenance Practices | 4.3.1 Waste Disposal and Recycling | 4.3.2 Low-Emitting Materials | 4.3.3 Green Cleaning/Janitorial Supplies | 5.1 Preservation of Native Species | 5.2 Introduction of Native Species | 5.2.1 Pollinator-friendly Plants | 5.3 Wildlife-friendly Design | 6.1 Tenant and Employee Education | 6.2 Indoor Air Quality | 6.3 Dark-Sky Friendly Lighting |
| **Required Practices** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 Acre and Over | ✓ | ✓ | | | | | | | | | | | | ✓ | ✓⅄ | ✓⅄ | | ✓⅄ | | | | | | | | | | | | | | | | | | |
| Under 1 Acre | ✓ | (some) | | | | | | | | | | | | ✓ | ✓⅄ | ✓⅄ | | ✓⅄ | | | | | | | | | | | | | | | | | | |
| **Incentivized Practices** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tax Credits/Abatement | | | | | | | | | | ✓ | ✓ | ✓ | ✓ | | ✓*** | ✓*** | ✓*** | ✓*** | | | | | | | | | | | | | | | | | | |
| Public Recognition/PR | *In Progress* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reduced Code Requirements | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | | | | | | | | | | | | | ✓ | ✓ | ✓ | ✓ | | | | | | | ✓ | ✓ | | | | |
| Utility Incentives | | ✓ | | | | ✓ | | | | | ✓** | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | |
| PACE | | | | | | | | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | | | | | | | | | | | |

*May also apply toward repairs and smaller renovation per code

**Only available to systems that become operational on or after Jan. 1st, 2019

***Federal tax credit for contractors who sell or lease a home that has met the 50% energy efficient standard

⅄ Per 2012 IECC