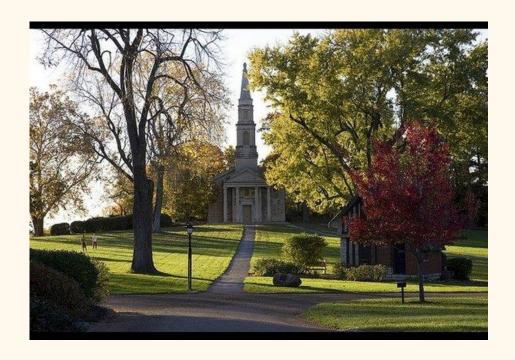
# Principia College Sustainability Walking Tour



Principia College Center for Sustainability

March 2018

Welcome to Principia College! This self-guided tour was created by Sustainability student Lauren Littell for the 2014 Public Affairs Conference (PAC), themed "Sustainability: Not a Fad, But a Future". It was later updated and revised for the 2018 PAC, themed "Urban Sustainability: Define, Design, Evolve." These conferences have sought to educate and empower our college community (and Conference guests) toward leading a more sustainable lifestyle.

A sustainable lifestyle can be viewed as one in which consumption of goods and resources occurs at a rate that does not compromise future generations' ability to meet *their* need for goods and resources. However, sustainability is about much more than just consumption, it's a way of life that ensures balance in three areas: economy, environment, and society. Principia College is taking the initiative to partake in this new movement, and the Walking Tour is our way of embracing you in our growing commitment to a clean, vibrant, diverse, and limitless future!

The Walking Tour will give you a small taste of the many wonderful ways in which Principia is being proactive in the realm of sustainability. To give structure to the Tour, we will focus on the 10 "One Planet Principles". These are targets that describe a world well-prepared to meet the needs of present generations, while honoring the rights of future generations - both human and non-human - to a healthy and happy life of their own.

We hope you'll come to see, through the lens of these "One Planet Principles", that sustainability is more than mere environmentalism - it relates to energy and transportation, food and water, health and happiness, social fairness, and, yes, lovingly caring for the land and wildlife that share and define our beautiful world.

#### Come walk with us!



Making buildings and manufacturing energy efficient and delivering all energy with renewables

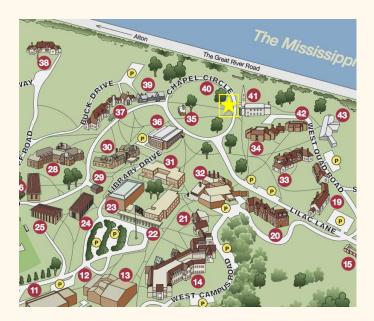
#### Zero Carbon means...

- Zero net energy consumption (you create more renewable energy than you use) or zero net carbon emissions on an annual basis
- Reducing greenhouse gas emissions through energy conservation and partaking of innovative, renewable energy sources

#### Relevance...

- Enables Principia to function as a sustainable community
- Significantly reduces Principia's carbon footprint
- Removes our dependence on fossil fuels, including foreign oil and coal fired plants (emissions contribute to climate change)

Progress... Principia has already met this fundamentally important target! We are blessed with carbon neutrality courtesy of the 2,600 acres of forest, prairie, and agricultural land upon which the College sits. These environments metabolize more carbon than is emitted by campus buildings and fleet emissions. The College also adheres to the zero carbon principle by purchasing 100% of its energy from renewable sources, and utilizing hybrid and electrically powered vehicles that help reduce emissions associated with commuting and on-campus errands, respectively. These are also budget-friendly decisions, as the "e-rides" significantly reduce the cost of fleet operation. There are additional savings from with other aspects of our energy use; for example, Energy Star<sup>TM</sup> rated appliances, energy-efficient LED lighting, and a commitment to eating more plant-based protein.



You are HERE, on the front lawn of the Principia Chapel (#41), where your Walking Tour begins. Look at the impressive trees and vegetation in front and to either side of the Chapel—they, along with all our campus trees, contribute meaningfully to Principia College's status as a carbon neutral campus.

Caring for our forested lands and purchasing 100% renewable energy to power our campus grid reflect our commitment to the **Zero Carbon** One Planet Principle.

Did you know? "The net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day."

-U.S. Department of Agriculture



Encouraging active, sociable, meaningful lives to promote good health and well-being

## Health and Happiness means...

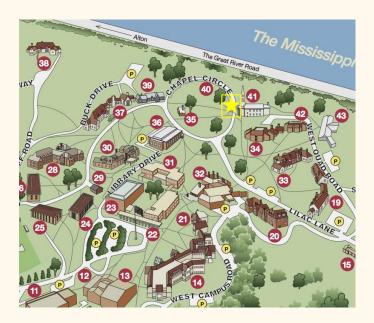
- An environment that promotes a state of well-being and contentment among its residents
- Residents are physically healthy and mentally peaceful

#### Relevance...

- Principia as an institution of higher learning nurtures the health, happiness, and character unfoldment of its faculty, staff, and student body
- Happiness is spiritual, born of Truth and Love. It is unselfish; therefore it cannot exist alone, but requires all mankind to share it. (Science & Health with Key to the Scriptures 57:18)

Progress... Principia College serves the cause of Christian Science in ways open to it as an educational institution. Christian Science is a religion founded by Mary Baker Eddy in 1866, and based on an understanding that God is Love, and that we are all His beloved children—made in his spiritual likeness and defined by health, wholeness, purity, and health, a state of being that Christian Scientists protect and nurture through prayer. When needed, trained Christian Science nurses are available in Cox Cottage, an on-campus nursing facility.

Enduring health and happiness are evident everywhere you look on campus - in our classrooms, social activities, athletics, employment, academic studies, and community service. We share a common commitment to joy!



You are HERE, turn to the Chapel (#41). This beautiful structure (architect: Bernard Maybeck), was the first to be built on the Principia College campus.

The Chapel is on the National Register of Historic Places, and it represents an inspired and embracing beacon of health and happiness for our community. The Chapel Green is also the site of our annual Earth Day Fair and Whole World Festival, an expression of love for community and planet.

Did you know? After studying meeting houses and churches in Massachusetts and the exposed site high on a bluff overlooking the Mississippi River, Maybeck developed a Colonial Revival Style church that involved the use of steel, concrete, and Bedford Indiana limestone.

#### Land use and wildlife



## One Planet Principle's definition...

Protecting and restoring land for the benefit of people and wildlife

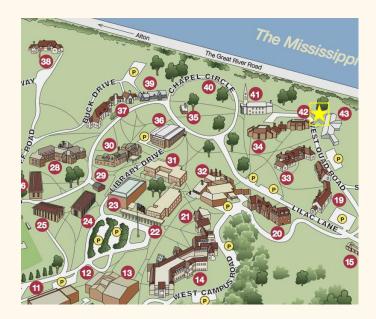
# Land Use and Wildlife means...

- Using land assets in ways that benefit the local economy, restore soil nutrients, and nurture non-human families
- Caring for biodiversity, especially rare and endangered species
- Remembering to safeguard wildlife and their habitat when making land use decisions

## Relevance...

- Principia College is integrated into 2,600 acres of natural habitat
- Native forests, steams, bluffs, and prairies form the basis of Principia's unique outdoor classroom
- Natural environments provide important ecological services

Progress... Principia actively partakes in native prairie restoration and the federal Conservation Reserve Program (the latter is a voluntary program available to agricultural producers to safeguard environmentally sensitive land for conservation benefits). In 2012, Principia received Forest Stewardship Council (FSC) certification for its professional lands management program. Faculty are working to return the forest to its pristine state by researching records from the 1800s, as well as aerial photos dating from 1940. Students are actively engaged in biodiversity research and conserving ecosystem services (stream quality, pollination), caring for honeybees, removing invasive species, restoring native prairie, and studying the demography and movements of our wild rattlesnakes.



You are HERE, walking down the Chapel Trail to the new Voney Art Studio's (#43) terrace - and you are literally surrounded by Principia's efforts to nurture its land and wildlife! For example, the native hill prairie is periodically burned to maintain its viability, students monitor a pair of rare Peregrin Falcons nesting nearby, and seasonal flowers brighten our landscape. Listen carefully, songbirds abound!

Did you know? The Lands Stewardship Program (embedded in our Biology Department) is staffed mainly by students! Principia's hill prairie habitats, which can be seen all along the 4 miles of our river bluff acreage, are highly valued as a 'window' into what the pristine Mississippi River ecosystem looked like centuries ago when it was cared for by native Americans, including the resident Illini tribe.



Promoting sustainable humane farming and healthy diets in local, seasonal organic food and vegetable protein

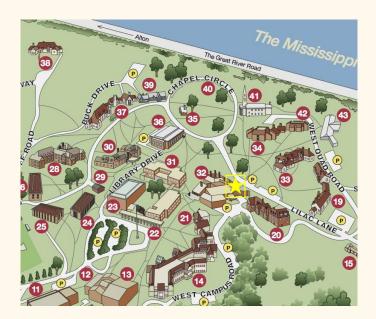
## Local and Sustainable Food means...

 The production, processing, distribution, consumption, and waste management of food is integrated in a way that is sustainable and enhances the environment, economy, and social health of a particular place

#### Relevance...

- Animal welfare and environmental health are improved when factory farmed meat is avoided
- Fair Trade purchases support food systems where producers are paid fairly for their work
- Purchasing food that is locally grown and produced contributes to a low-carbon future by reducing transportation costs

Progress... In 2017, Dining Services earned a 5-Star rating from the Green Dining Alliance. We love our Beyond Meat® burgers, "humanely sourced" meats, and cage-free eggs. Vegetarian options are available at every meal, and the Piasa Pub now offers organic, shade-grown coffee and a delicious vegan line! The Sustainability Club maintains a green roof on the Science Center to provide fresh local greens, and students craft syrup from campus maple trees. The College leases land to Three Rivers Community Farm, a chemical-free CSA. In 2013, students planted a 14-acre native Food Forest near Eliestoun House (#38), which will eventually bear pecans, persimmons, and chestnuts!



You are HERE in the Concourse (#32). (As you walked, did you notice the native pollinator garden in front of Howard House (#33) and our lovely apple orchard?) The Concourse is home to Dining Services - don't miss the banner highlighting its sustainability progress! In the Campus Store, you'll notice seasonal maple syrup, organic cereals, healthy juices, vegan meals, and trail mixes. Soon our student-led Beekeepers Association will be selling honey!

Did you know? Our Executive Chef handcrafts our BBQ and pesto sauces and, responding to student input, the Piasa Pub recently created our first vegan meal line. We hope you find time to enjoy a vegan Chai Latte, shake, or roasted tofu wrap!



Creating safe, equitable places to live and work which support local prosperity and international fair trade

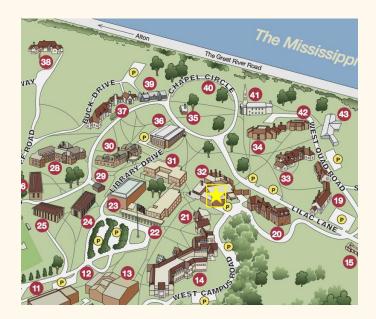
## Equity and Local Economy means...

- All people have similar rights, opportunities and access to all forms of community capital
- All people throughout a community have the same basic needs acknowledged and protected

#### Relevance...

- Principia as a college and an institution must house and service its students, faculty and staff—and this requires consideration to employment policies and community relations
- The College is a diverse family, including international students
- The Campus Store often features unique Fair Trade items that benefit local communities around the world

Progress... Democratic bodies give all employees an active voice, employees receive fair and gender equitable pay, and students are valued as part of the work force. In addition, Principia is always working to identify and provide more sustainable options for products sold on campus, including in the Campus Store. These products range from toothbrushes made from recycled yogurt cups to Fair Trade certified chocolate bars. The majority of our retailed notebooks are made from 100% recycled paper, and refillable water bottles are a popular item. A progressive economy starts at home, so we invite you to visit our Campus Store and purchase a healthy snack, reusable tote, or handcrafted gift!



You are HERE, notice how many local staff—including students—are employed by the College in the Dining Hall, Piasa Pub, and Campus Store. By staffing an on-site retail store, restaurant, post office, security team, etc., we create an inclusive, vibrant, equitable community where our needs are met in a friendly and sustainable way!

Our students also embrace the larger community as academic interns in area businesses, under-served communities, and nonprofit organizations.

Did you know? Our students contribute thousands of service and volunteer hours in surrounding communities. Principia College is the largest employer in Jersey County, and we take pride in our positive contribution to the local economy.



Reducing consumption, reusing and recycling to achieve zero waste and zero pollution

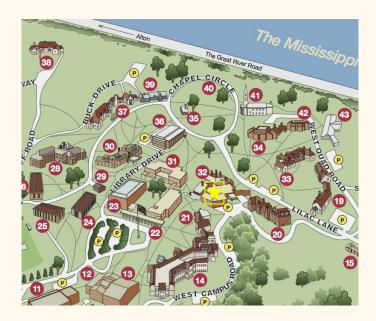
### Zero Waste means...

- Divert from the landfill a minimum of 90% of institutional waste
- Reduce, Reuse, Recycle—make every attempt to ensure that discarded materials can become resources for others to use

### Relevance...

- In order for Principia to become a zero waste campus, we will have to put systems in place to divert at least 90% of all discarded materials from the landfill
- This approach will enable Principia to emulate natural life cycles (where little goes to waste)—which is a necessary element of sustainable living

Progress... A 2013 campus survey found that 63% of students (and 92% of employees) recycle "as much as possible", mainly because it's "good for the environment" and "it contributes to sustainability". The Center for Sustainability provides students with in-room recycling bins. Our Facilities Department recycles light bulbs, batteries, electronics, and scrap metal. All of our "to go" food containers and cutlery are compostable, and Dining Services composts 100% of its pre- and post-consumer organic waste. In all, Principia diverts nearly 50% of its waste from the landfill and we are committed to improving that performance every year. Please pay attention to signs that guide you in disposing of items correctly. Thank you!



💢 You are (still) HERE in the Concourse (#32).

The Concourse is home to Dining Services, where many of our zero waste practices take place! Food scraps are collected for composting, earth-friendly cleaning agents use minimal packaging, dish washing cycles are water-wise, and all plastics, cans, glass, and non-compostable paper—even fry oil (sold to local farmers)—are reused or recycled.

Used books and batteries are collected for recycling and a student-initiated "textbook lending library" is located near the south entrance. A campus-wide book recycling program sponsored by the student-led Sustainability Club emphasizes "reuse", with a proportion of the profits returned to campus sustainability projects and portion donated to a global literacy charity.

#### Sustainable water



## One Planet Principle's definition...

Using water efficiently, protecting local water sources and reducing flooding and drought

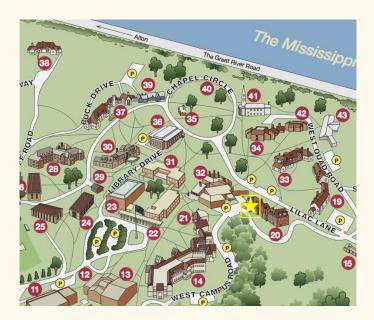
#### Sustainable Water means...

- Water restores and maintains the health of ecosystems
- Water quality is maintained for human use
- Human actions will not impair the long-term renewability of freshwater stocks and flows

#### Relevance...

- Ensures that Principia's students are consuming water that is of good quality and safe to drink
- Water, a vital resource for all living things, will be available to meet our needs long into the future
- Water conflict, which is a source of much upheaval around the globe, can be avoided through sustainable usage

Progress... Principia sources its water from the Mississippi River, which is provided to us by the Illinois American Water Company and treated to meet IEPA standards. The College has its own on-site water treatment plant, ensuring the purity of wastewater returned to the River. According to our Chief Engineer, "the plant has been nominated for Plant of the Year twice in the last 5 years!" Our showerheads are 2.0 gpm (or less), faucets 1.5 gpm, toilets 1.6 gpf, and urinals 1.0 gpf. The College has significantly reduced its reliance on bottled water, in part because water bottle filling stations around campus have been used many tens of thousands of times since 2012!



You are HERE—on the first floor of the men's side of Anderson House (#20). Here you can see the first water bottle filling station to be placed in a Principia dormitory! Situated on the Mississippi River, we are ever mindful of the importance of clean water in our daily lives and we use it wisely.

A little known fact is that we have reduced the sale of bottled water on campus by more than 85% since 2011! Water filling stations in major traffic areas around campus remind us of the importance of reducing our reliance on bottled water, and these stations also reduce the amount of plastic we send to the landfill. Eventually the plan is to have a filling station in every residential dorm! The Senior Class of 2018 gifted two water bottle filling stations to speed progress toward this campus-wide goal.



Nurturing local identity and heritage, empowering communities, and promoting a culture of sustainable living

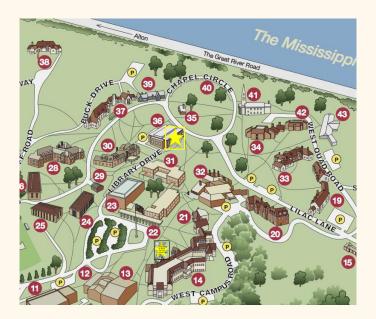
# Culture and Heritage means...

- Culture can be a powerful driver for sustainable development
- Cultural heritage is intangible and must be acknowledged for its significant contribution to solving issues at local and regional levels

#### Relevance...

- Principia has developed a priceless sense of heritage over more than a century of continuous operation
- Our Campus culture and pride of place is strengthened by our shared religious beliefs and on-campus residential community
- Our Campus culture is nurtured and extended through House affiliations, alumni activities, and community outreach (e.g., Gold and Blue Club athletic membership)

Progress... Principia is a liberal arts college with various programs and buildings devoted to the study and performance of artistic fields. Davis Music Hall has a weekly event in which music majors perform for the campus. The Theatre Department sponsors a play, musical, or other production each semester. Academic buildings proudly display a wide variety of artwork created by Principia students. Principia embraces its alumni through on-campus reunions and "Prin Clubs" active throughout the United States, providing opportunities for fellowship.



You are HERE, in the Reference Room of the Marshall Brooks Library (#36), where you'll see many forms of artistic expression featured in the display cases. The collection reflects the diversity of our global cultural heritage and reflects Principia as a global idea.

Elsewhere on campus - particularly Davis Music Hall, but also in Wanamaker Hall, Cox Auditorium, Piasa Pub, and woven into House events - our community routinely enjoys wonderful theatre, music, radio, open mic, improv and many other forms of creative expression!

Did you know? Principia has been giving out awards to its student artists since 1950 and has more than 140 pieces of student art in its collection; many are displayed in administrative and faculty offices.



Reducing the need to travel, and encouraging walking, cycling, and low carbon transport

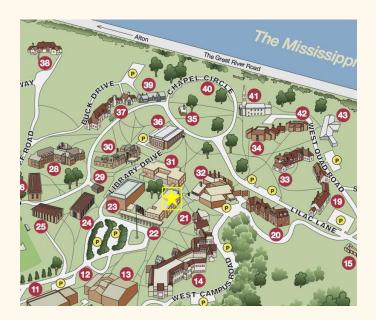
## Sustainable Transport means...

- Basic access needs of individuals and societies are met safely and in a manner consistent with human and ecosystem health
- Transportation is affordable, operates efficiently, offers choice of transport mode, and supports a vibrant economy

#### Relevance...

- Principia College is a planned community and, like any small city, should be committed to sustainable infrastructure and progressive transportation options
- Sustainable transportation is a wise long-term investment
- Sustainable transportation reduces carbon emissions, and thus reduces the threat of climate change

Progress... Principia has invested in electric "e-ride" vehicles used by Facilities Department staff. Parking lot plug-in stations charge these fleet vehicles, as well as electric commuting vehicles owned by faculty and staff. Bicycle and long board racks are conveniently located at most building entrances and are a fun and healthy mode of transport. Paths for pedestrians are located throughout Campus, and walking is still the most common way that we get around! A fraction of people on campus bring their cars to school—3:1 is the approximate ratio of students to cars, which means that carpooling when traveling off-campus is common. Staff that commute between the College and School (St Louis) campuses carpool in hybrid fleet vehicles maintained by the institution.



You are HERE, as you walk from the Library into the School of Government (#22), notice all of the conveniently located paths and bike racks! Long boards and bicycles are a common mode of carbonfree transport. A senior Business major recently received national attention for building a multipurpose cargo bike from primarily recycled materials.

The tour leads you down the main corridor of the School of Government past the offices of leadership and out at the flagpole to walk to the Science Center.

Did you know? "CO<sub>2</sub> emissions from biking are about 10 times less than driving a car, even after accounting for the emissions required to make the bike and emissions linked to food the rider eats to power the device."

-The European Cyclists Federation



Using materials from sustainable sources and promoting products which help people reduce consumption

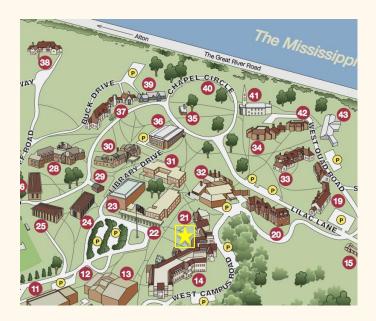
#### Sustainable Materials means...

- Sustainable materials management the use and reuse of materials in the most productive and sustainable way across their entire life cycle
- Conserving resources, reducing waste, slowing climate change, minimizing the environmental impacts of the materials we use

## Relevance...

 Principia values its partnerships with its vendors and suppliers, each and every one of which is carefully selected for their sustainability performance

Progress... Principia reuses and repurposes its historic furniture pieces, thus avoiding the financial and material costs of new purchases. New furnishings are evaluated based on cost, performance, and compatible styling - but sustainability and environmental care are also examined. Local companies are used whenever possible, both to build community and to reduce the carbon footprint of long-distance transport. The St. Louis-based company Flooring Systems supplies a carpet tile manufactured by Interface, which is used exclusively in our academic, administrative and student housing buildings. Did you know that Interface makes its carpets from recycling old carpets?! Whenever possible we source sustainably harvested lumber from our forested lands. Principia no longer uses Styrofoam.



You are HERE—Take a step into the Science Center. Within all buildings, one can find recycled, repurposed and/or new "green" furniture, flooring, and lighting technologies.

Notice the concrete floor and natural stone accents on the walls, long-loved furniture that's been passed down for generations -as well as new office furniture by Steelcase, a leader in sustainable manufacturing - and LED lighting in the aviary. The LED installation has resulted in significant financial savings while at the same time encouraging healthy plant life.

In the bathrooms, motion detectors reduce wasted energy, single pull paper towels save money and trees, and MOKA toilet tissue boasts several "green" certifications.

# Thank you for joining us on the Principia College Campus Sustainability Walk!

The mission of the Principia Center for Sustainability is to "educate, promote, and inspire Principia College's students, faculty and staff to become more responsible local and global environmental citizens." We hope that we've inspired you, too!

EARTH. A sphere; a type of eternity and immortality, which are likewise without beginning or end.

(Science & Health with Key to the Scriptures 57:18)

"I feel like living in the most sustainable way possible makes me a better Christian Scientist because it is a living prayer for the world." Principia College student (2013)