



VISION: The City of Bloomington will be a leader in municipal sustainability practices

The City of Bloomington government is committed to leading the greater Bloomington community by example. The City addresses sustainability through operational programs, policies, and capital projects that specifically focus on its employees and facilities, including the following:

- commitment to the Paris Agreement, as signaled through participation in the Mayors National Climate Action Agenda (2017) and the U.S. Mayors Climate Protection Agreement (2006)
- installation of solar photovoltaic (PV) panels at more than 25 City facilities to help create more than 5 megawatts (MW) of solar capacity in Bloomington
- commuter incentives, including free use of the Bloomington Transit bus service with a City employee ID, a tax-free bicycle commuter benefit, and bicycles for City employees to use for work-related travel
- substantial upgrades to City Hall, earning LEED Existing Building Operations and Maintenance certification in 2012



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- adoption of the 2009 Green Building Program Ordinance, which requires certification of new and existing City buildings through LEED when improvements will have a 10-year or less payback period
- installation of energy-efficient lighting, including light-emitting diode (LED) fixtures on the B-line Trail, LED lighting technology in all City traffic signals, and installation of solar lights at Griffy Lake Boathouse and Broadview Park
- City fleet improvements, including a no-idle policy in all departments, energy efficient maintenance equipment, a 2005 biodieselonly purchasing policy for new diesel vehicles, and the purchase of hybrid and Global Electric Motorcar (GEM) vehicles
- introduction of a Sustainable Purchasing Policy and Green Office Guide with guidance on waste minimization and green event planning

Over the next five years, the City will continue to:

- reduce greenhouse gas emissions,
- conserve energy and water,
- reduce waste,
- implement green building and infrastructure projects,
- enhance multi-modal transportation for employees,
- strengthen engagement regarding all three elements of sustainability (environmental, economic, and equity), and
- reduce the City's long-term operating costs.

GREENHOUSE GAS EMISSIONS

GHG emissions associated with City operations are measured in six sectors: buildings and facilities, wastewater facilities, water treatment and delivery

percent by 2023, relative to a baseline of 33,702 metric tons of GHG emissions in 2015 * ACTION **LEAD PARTNERS** TIMEFRAME COST Select a consistent methodology and reporting process for GHG emissions inventories and develop an updated 8.1.a ESD 2019 \$* Greenhouse Gas Emissions Inventory for City operations every two years ESD, Public Works, Parks Evaluate the viability of creating a renewable energy 8.1.b \$ & Recreation, CBU, Fire, 2019 goal for City operations Police Public Works, Parks & Identify locations for future renewable energy 8.1.c Recreation, CBU, Fire, 2021 \$ installations at City-owned properties Police, ESD

GOAL 8.1: The City of Bloomington will reduce GHG emissions from municipal operations 12

*For more information on necessary actions to reduce GHG emissions by 20 percent, see Appendix C.



services, Transit fleet, vehicle fleet, and street lights and traffic signals. According to the 2015 Local Government Operations Energy Use and Emissions Inventory, total GHG emissions from City government operations were 33,702 metric tons in 2015 (Figure 1),¹ representing a 3 percent reduction compared to 2010.

The City will continue efforts to reduce operational GHG emissions in three key areas: 1) reducing facility energy use, 2) reducing vehicle fuel use, and 3) increasing the percentage of renewable energy and fuels used for City operations.² The City will also seek opportunities to increase GHG sequestration at its properties.

ENERGY AND FUEL USE

The City currently owns or operates 45 buildings including offices, community centers, recreational facilities, police and fire stations, and public restrooms — that use electricity and/or natural gas as energy sources. The majority use electricity for cooling and natural gas for heating. As of August 2018, the City fleet comprises 578 vehicles, including passenger vehicles, pick-up trucks, and refuse collection trucks. The fleet includes 8 hybrid Ford Fusion automobiles and 25 flex fuel vehicles that can use either gasoline and E85 fuel. The Bloomington Transit fleet is composed of 60 vehicles, including 26 diesel-powered buses, 8

Figure 1: 2015 City of Bloomington Greenhouse Gas Emissions, by Government Sector (in metric tons of carbon dioxide equivalent)



Source: 2015 Local Government Operations Energy Use and Emissions Inventory, 9.



hybrid-electric buses, and 13 paratransit vans and 12 staff vehicles that use gasoline.

In 2015, the City used a total of 232,672 Million British Thermal Units (MMBTUs) of energy, at a cost of approximately \$4.9 million (Figure 2). Water delivery and wastewater management accounted for more than 46 percent of that energy use. Other major sources of energy use included buildings and facilities (19.2 percent), the City vehicle fleet (14.5 percent), and the Transit fleet (16.2 percent).³ While data more recent than 2015 is not currently available for all government sectors, 2017 fuel use data shows that City fleet energy usage increased by approximately 3.7 percent compared to 2015,⁴ while energy use for the Transit fleet decreased about 2 percent.⁵ Since 2009, the City has worked with Duke Energy to obtain \$52,000 in energy efficiency rebates for eight energy efficiency projects in City facilities. The City also tracks facility energy use in the U.S. EPA Portfolio Manager platform for the ENERGY STAR Commercial Buildings Program, a voluntary program in which managers compare their buildings' energy efficiency performance ratings (scale of 0 to 100) to other similar structures. The City is committed to improving energy efficiency and establishing consistent processes for reporting and analyzing energy use for both buildings and fleets.



Figure 2: 2015 City of Bloomington Energy Consumption, by Government Sector (in MMBTUs)

Source: 2015 Local Government Operations Energy Use and Emissions Inventory, 7.



GOAL 8.2: The City of Bloomington will reduce non-renewable energy use in City owned and operated facilities 12 percent by 2023, relative to a baseline usage of 155,282 MMBTUs in 2015

	ACTION	LEAD PARTNERS	TIMEFRAME	соѕт
8.2.a	Establish a consistent methodology and process for monthly reporting of individual building energy usage and cost data	ESD, Public Works, Parks & Recreation	2019	\$
8.2.b	Develop an implementation plan to achieve energy use reductions outlined for this goal	Public Works, Parks & Recreation, CBU, ESD	2019	\$
8.2.c	Achieve an ENERGY STAR score of 75 or better for all eligible City buildings	Public Works, Parks & Recreation, CBU, BT	2023	\$\$*
8.2.d	Identify and implement air process upgrades, improving energy wastewater treatment plant efficiency	CBU	2023	\$\$\$\$

GOAL 8.3: The City of Bloomington will reduce non-renewable City fleet vehicle fuel use 5 percent by 2023, relative to a baseline usage of 40,540 MMBTUs in 2015

	ACTION	LEAD PARTNERS	TIMEFRAME	соѕт
8.3.a	Establish consistent methodology and process for monthly reporting of fleet fuel usage and cost data	Public Works, Parks & Recreation, CBU, Police, ESD	2019	\$
8.3.b	Conduct analysis of fleet to right-size vehicles and fleet size; identify near-term opportunities for fuel-efficient and lower-emission vehicle replacements	Public Works, Parks & Recreation, CBU, Fire, Police	2020	\$\$\$
8.3.c	Develop and implement a policy to maximize fuel efficiency by vehicle type, eliminate unnecessary vehicles and usage, and prioritize electric and hybrid vehicles	Public Works, Parks & Recreation, CBU, Fire, Police, ESD	2020	\$*



GOAL 8.4: Bloomington Transit will reduce non-renewable fuel use 5 percent by 2023, relative to a baseline usage of 31,417 MMBTUs in 2015

	ACTION	LEAD PARTNERS	TIMEFRAME	соѕт
8.4.a	Begin testing alternative fuel/electric buses; make recommendations for changes to fleet to reduce fuel use and associated emissions	Bloomington Transit	2023	\$\$\$\$*

WATER

Water is used at City facilities primarily for irrigation, domestic potable uses, and swimming pools. The City has completed installation of lowflow toilets, faucets, and irrigation smart meters at City Hall, and is committed to water conservation and efficiency efforts that conserve natural resources and reduce operating costs.

WASTE

The City does not currently have a mechanism in place to collect data on waste generation from municipal buildings. However, it was required to conduct a significant waste audit for City Hall during its LEED certification process. The results of this waste audit are recorded in the 2012 City Hall Global Reporting Initiative (GRI) report. According to best available data, the waste diversion rate at City Hall in 2012 was 52 percent (Figure 3).

GOAL 8.5: The City of Bloomington will establish a water conservation goal by 2019

	ACTION	LEAD PARTNERS	TIMEFRAME	соѕт
8.5.a	Establish 2018 water use baseline for all City facilities	ESD, CBU	2019	\$
8.5.b	Develop a quarterly reporting system for water use in all City facilities	ESD, Public Works, Parks & Recreation	2019	\$*
8.5.c	Develop a mechanism through UReport to allow citizens and employees to report water leaks in government buildings	City IT department	2019	\$*
8.5.d	Complete water audits of all City facilities and make recommendations for indoor and outdoor water conservation measures ⁷	CBU	2021	\$



GOAL 8.6: The City of Bloomington will establish a baseline and waste diversion rate for applicable City facilities by 2020

	ACTION	LEAD PARTNERS	TIMEFRAME	соѕт
8.6.a	Conduct waste audits for all applicable, occupied City facilities	Public Works, ESD, Parks & Recreation	2019	\$
8.6.b	Establish a consistent methodology and process for quarterly reporting of waste generation and diversion rates in City facilities	Public Works, Parks & Recreation, ESD	2019	\$
8.6.c	If the City Hall pilot succeeds, expand composting opportunities to at least two additional City facilities	ESD, Public Works, Parks & Recreation	2019	\$\$*
8.6.d	Identify additional opportunities for recycling at City facilities	ESD, Public Works, Parks & Recreation	2020	\$

Figure 3: Tons of Waste Generated by City Hall (2012)



Source: 2012 Sustainability Report for City Hall of Bloomington, 17



GOAL 8.7: The City of Bloomington will review and revise the City Hall Sustainable Purchasing Policy, expand to other facilities and track compliance by 2021

	ACTION	LEAD PARTNERS	TIMEFRAME	соѕт
8.7.a	Establish annual reporting process for Sustainable Purchasing Policy (SPP) compliance through City of Bloomington Data Portal	Controller's Office, ESD	2019	\$*
8.7.b	Establish 2019 baseline for compliance with existing SSP	Controller's Office, ESD	2020	\$
8.7.c	Develop a list of standard recommended consumable products for compliance with the SPP	Controller's Office, ESD	2020	\$
8.7.d	Develop and implement a plan to communicate SPP requirements to City employees at all facilities	Controller's Office, ESD	2020	\$

Recycling containers are located in all municipal buildings, and City Hall began a food composting pilot project in June 2018 to reduce waste for transport to the landfill and recover organic materials for use at a local farm. The City Hall parking lot flower bed also has a Tower Garden that uses food compost to grow up to 50 organic plants in a compact, vertical space. The City's employee-led Team Green also updated a Green Office guide in 2013 that encourages all departments to be more innovative and efficient in efforts to reduce their impact on the environment, with tips and actions to reduce waste and host green events. The City is committed to ongoing employee education and initiatives to reduce waste generation and divert valuable resources from the landfill.

SUSTAINABLE BUILDINGS AND GREEN INFRASTRUCTURE

The City is committed to using sustainable buildings and green infrastructure to reduce the environmental footprint of its operations, provide healthier spaces for occupants, and reduce longterm operational costs. Sustainable buildings use construction techniques that are more resource efficient than traditional building practices and typically have lower operating costs, improved air quality, and enhanced work environments relative to traditional buildings. For purposes of this plan, *green infrastructure* includes natural areas that assist with local cooling, air filtration, creation of pollinator habitats, or water management techniques such as bioswales, green roofs, and rain gardens.⁸

The City adopted its Green Building Program Ordinance in 2009, requiring certification of



15 municipal buildings to LEED–Silver Existing Building Operations and Management standards whenever improvements are expected to have a payback period of 10 years or less. The ordinance also calls for all future, new, occupied City buildings to achieve LEED–NC (new construction) Silver certification, where project resources and conditions permit. In 2012, City Hall underwent a major renovation and was certified to the LEED Existing Building Operations and Maintenance (LEED EBOM) standard. The Downtown Transit Center was built to LEED Silver standard in 2014 but is still in the process of acquiring certification. No other buildings have yet been certified to either the LEED EBOM or LEED–NC standard, though the City has implemented numerous green building projects at the Animal Shelter, Parks buildings, various garages, the Transit administration building, the Monroe Lake Water Treatment Plant, the CBU main building, and the Dillman Waste Water Treatment Plant.

The City has maintained its status with Tree City USA⁹ since 1984 and developed an urban forestry

	ACTION	LEAD PARTNERS	TIMEFRAME	соѕт
8.8.a	Develop an inventory of sustainable building projects implemented at City facilities since 2009	ESD, Public Works, Parks & Recreation, CBU	2018	\$
8.8.b	Develop a mechanism for tracking the review of all Green Building Program Ordinance eligible projects pre- and post-implementation	Public Works, Parks & Recreation, ESD, Controller's Office	2020	\$*
8.8.c	Develop an inventory of green infrastructure elements on city properties and a mechanism for annual reporting on the Green Spots or other relevant website	ESD, CBU, Public Works, Parks & Recreation	2020	\$
8.8.d	Adopt and implement policy to plant low-mow lawns and low-maintenance native trees with high capacity for carbon dioxide absorption, and restore native habitats on City properties to sequester carbon dioxide emissions ¹⁰	Parks & Recreation, Public Works, CBU, IU	2020	\$\$\$\$
8.8.e	Inventory all City properties to determine the need for and appropriate siting of green infrastructure elements	ESD, Public Works, CBU, Parks & Recreation	2021	\$\$
8.8.f	Create and implement a Green Infrastructure Plan for City government buildings ¹¹	ESD, Public Works, CBU, Parks & Recreation	2023	\$\$\$*
8.8.g	Complete at least one Living Building Challenge petal certification project	ESD, Public Works, CBU, Parks & Recreation	2023	\$\$\$\$

GOAL 8.8: The City of Bloomington will use sustainable building and green infrastructure practices at all applicable City facilities



plan to guide tree planting and maintenance. While the City has installed bioswales, stormwater retention ponds, low-mow landscaping, and rain gardens, and has sponsored habitat restoration projects at City parks and facilities, no inventory of green infrastructure at its facilities is currently available. In the near future, a mechanism will need to be established to develop a baseline of current conditions and set goals for future enhancements.

EMPLOYEE TRANSPORTATION

The City encourages multi-modal transportation among its employees for commuting and travel for work-related events. According to a June 2018 employee commuter survey (with 224 responses), an estimated 82% of City employees commute to work in single-occupancy vehicles, 2% carpool, 1% ride the bus, 5% walk, 7% bike, and 1% use a motorcycle or moped.

The City offers its employees free use of the Bloomington Transit bus service, a tax-free bicycle commuter benefit redeemable at local bicycle merchants (for all City employees who ride their bike to work at least 12 days per month), hybrid fleet cars for travel to off-site meetings, and a city fleet of four bicycles located at City Hall and the CBU Administration building for employee travel to local meetings. The City also offers free parking at most work sites, and \$2/year employee parking at City Hall. While only a limited number of city employees currently take advantage of bus and bicycle commuter benefits, the City will put into place a more comprehensive commuter program that inspires employees to use active, less emissions-intensive means of travel, whenever possible.



GOAL 8.9: The City of Bloomington will decrease the percentage of employees commuting to work in single-occupancy vehicles to 80 percent by 2023, compared to a baseline of 82 percent in 2018

	ACTION	LEAD PARTNERS	TIMEFRAME	соѕт
8.9.a	Establish an employee commuter program to decrease use of single-occupancy vehicles for employee travel to and from work	Human Resources, ESD, Planning & Transportation	2020	\$\$*
8.9.b	Review and improve commuter benefits for non-single- occupant vehicle modes of commuting (i.e., not driving alone) ¹²	Human Resources, ESD	2020	\$



GOAL 8.10: The City of Bloomington will eradicate all invasive plants from priority municipal building landscapes by 2023

	ACTION	LEAD PARTNERS	TIMEFRAME	соѕт
8.10.a	Develop an inventory of invasive plants for removal at all prioritized City facilities and properties	Parks & Recreation	2020	\$\$\$
8.10.b	Replace invasive plants with native species at prioritized City facilities and properties	Parks & Recreation	2021	\$\$\$

ECOSYSTEM HEALTH

The City will work hard to preserve ecosystem health at municipal properties by managing and, as much as possible, eradicating invasive plants — planting native species in their stead. City Hall already has numerous native plantings, and there are plans to add approximately 2,000 additional native plants at Millers-Showers Park in the near future. Native species have also been planted at Winslow Sports Park, Bryan Park, Griffy Lake Nature Preserve, Ferguson Dog Park, the Goat Farm, Latimer Woods, and along the Clear Creek and Jackson Creek Trails.



EMPLOYEE ENGAGEMENT

Employee engagement is a vital component of any sustainability program. The City is committed to ensuring that all employees have a voice in the development and implementation of internally focused sustainability programs. Many staff helped devise the 2018 Sustainability Action Plan via participation in working groups and will play key roles in the implementation of both internal and community actions.

In the past, the primary mechanism for employee engagement was Team Green, founded in 2006 to help identify sustainability improvements for municipal buildings. This volunteer group of employees from various departments has met periodically over the past 12 years to help implement resource conservation campaigns, staff educational employee events, and small-scale sustainability projects.

The City will continue to work with Team Green and individual departments to communicate the goals, priority actions and annual progress reports associated with this plan.

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	ACTION	LEAD PARTNERS	TIMEFRAME	соѕт
8.11.a	Develop a clear framework for Team Green and solicit members from all departments	ESD	2018	\$
8.11.b	Hold monthly Team Green meetings to facilitate implementation of employee education plan	ESD	2019	\$*
8.11.c	Develop employee education and training opportunities related to each element of the SAP, with an annual schedule of activities, events, and key messaging	Team Green	2019	\$*
8.11.d	Offer trainings on social equity, diversity, and inclusion for all City staff	Human Resources, HAND	2019	\$\$*
8.11.e	Evaluate the potential to create a funding mechanism for employee-led sustainability projects at City facilities	ESD, Team Green, Controller's Office	2021	\$

GOAL 8.11: The City of Bloomington will develop an employee education plan to facilitate implementation of the Sustainability Action Plan by June 2019

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CITY OF BLOOMINGTON SOLAR INSTALLATIONS

The City of Bloomington has installed solar PV panels at various municipal facilities to increase resiliency and reduce both GHG emissions and long-term energy costs. The initiative started in 2017, with the installation of photovoltaic panels at City Hall and Police Headquarters, followed by planned installations at approximately 30 city properties, for more than 4 MW of renewable energy capacity.

Above: Solar PV panel array at Bryan Park pool Background: Solar panel array on the roof of the Bloomington Police Department



Notes

- 1. 2015 City of Bloomington Local Government Operations Energy Use and Emissions Inventory, 5.
- Examples of low maintenance, native trees that have proven efficient in absorbing CO2 emissions include White Pine, Scarlet Oak, Red Oak, Bald Cypress, Sweetgum, and Black Walnut. See https://www.thoughtco.com/which-trees-offset-global-warming-1204209 and https://www.indianawildlife.org/wildlife/native-plants/
- 3. 2015 City of Bloomington Local Government Operations Energy Use and Emissions Inventory, 5.
- 4. Personal communication with Lisa Lazell, 31 May 2018. This calculation involved the following assumptions regarding energy content of fuels: Gasoline 120,476 BTUs/gallon; Diesel (B20) 125,400 BTUs/gallon; and Biodiesel (B100) 117,100 BTUs/gallon based on EIA and the California Energy Commission. It assumes, as in 2015 Local Government Energy Use and Emissions Inventory, that 95 percent of diesel is B20 and 5 percent is B100. Please see http://www.energy.ca.gov/almanac/transportation_data/gge.html and https://www.eia.gov/energyexplained/index.php?page=about_energy_units for conversion factors.
- Personal communication with Lew May. This calculation involved the following assumptions regarding energy content of fuels: Gasoline – 120,476 BTUs/gallon; Diesel (B20) – 125,400 BTUs/gallon based on EIA and the California Energy Commission. It assumes that 100 percent of diesel is B20. Please see http://www.energy.ca.gov/almanac/transportation_data/gge.html and https://www.eia.gov/ energyexplained/index.php?page=about_energy_units for conversion factors.
- 6. Similar action recommended in Bloomington Peak Oil Task Force Report, 76 and similar action recommended in the Boulder County, Colorado Environmental Sustainability Plan, 79.
- 7. Similar actions recommended in Bloomington Peak Oil Task Force Report, 47-48.
- 8. STAR Community Rating System Version 1.2 (March 2015), 295.

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- 9. For more information on the requirements for Tree City USA status, see https://www.arborday.org/programs/treecityusa/standards.cfm
- 10. Similar action recommended in the City of Bloomington Comprehensive Plan, 47 and implemented by Columbia, Missouri. Bloomington area high school students also recommended a similar action.
- 11. Similar actions recommended in the City of Bloomington Comprehensive Plan, 47 and STAR Community Rating System Version 2.0 (October 2016), 47.
- 12. Similar action recommended in STAR Community Rating System Version 2.0 (October 2016), 35; topic of discussion in SAP Transportation Working Group meetings.