



# GOING GREEN WITH BATTERY-POWERED LAWN EQUIPMENT

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## TODAY'S CONVERSATION

1

### **Reasons Why**

A look at reasons for switching to battery-powered equipment

2

### **City Actions**

A peek at city goals and the actions underway to meet them

3

### **Tips & FAQs**

A how-to on finding the electric equipment right for you



## Climate Change

is the long-term alteration of global or regional climate patterns due to natural or human factors. Human-induced causes of climate change include the burning of fossil fuels, deforestation, and agriculture, which increase the concentration of greenhouse gases in the atmosphere.

These gases trap heat and warm the planet. Climate change poses a serious threat to the environment, human health, and well-being, and requires urgent action to reduce emissions and adapt to its consequences.

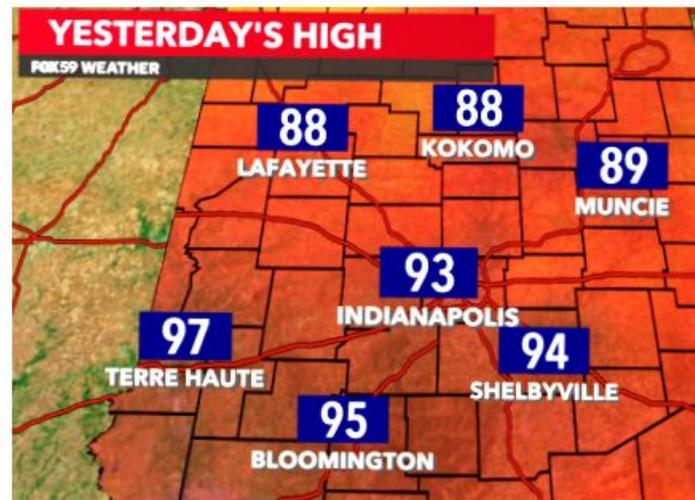
# Climate Change Impacts

## Flooding



Kirkwood 2021

## Extreme Heat



2023 Heat Dome  
110 Degree Heat Index

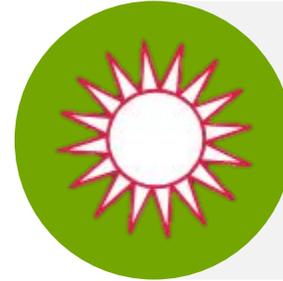
## Air Quality



2023 Canadian  
Wildfire Smoke

# CLIMATE CHANGE PROJECTIONS

Climate change is expected to have many impacts, not just globally, but locally. By 2100, Bloomington can expect...



**Increase in days above 95 degrees F**  
+70 days



**Increase in AC demand**  
40 - 50%



**Increase in annual average temperature**  
8 – 11 degrees F



**Increase in heavy precipitation**  
30%

# CASCADING IMPACT OF CLIMATE CHANGE

**CYCLICAL**

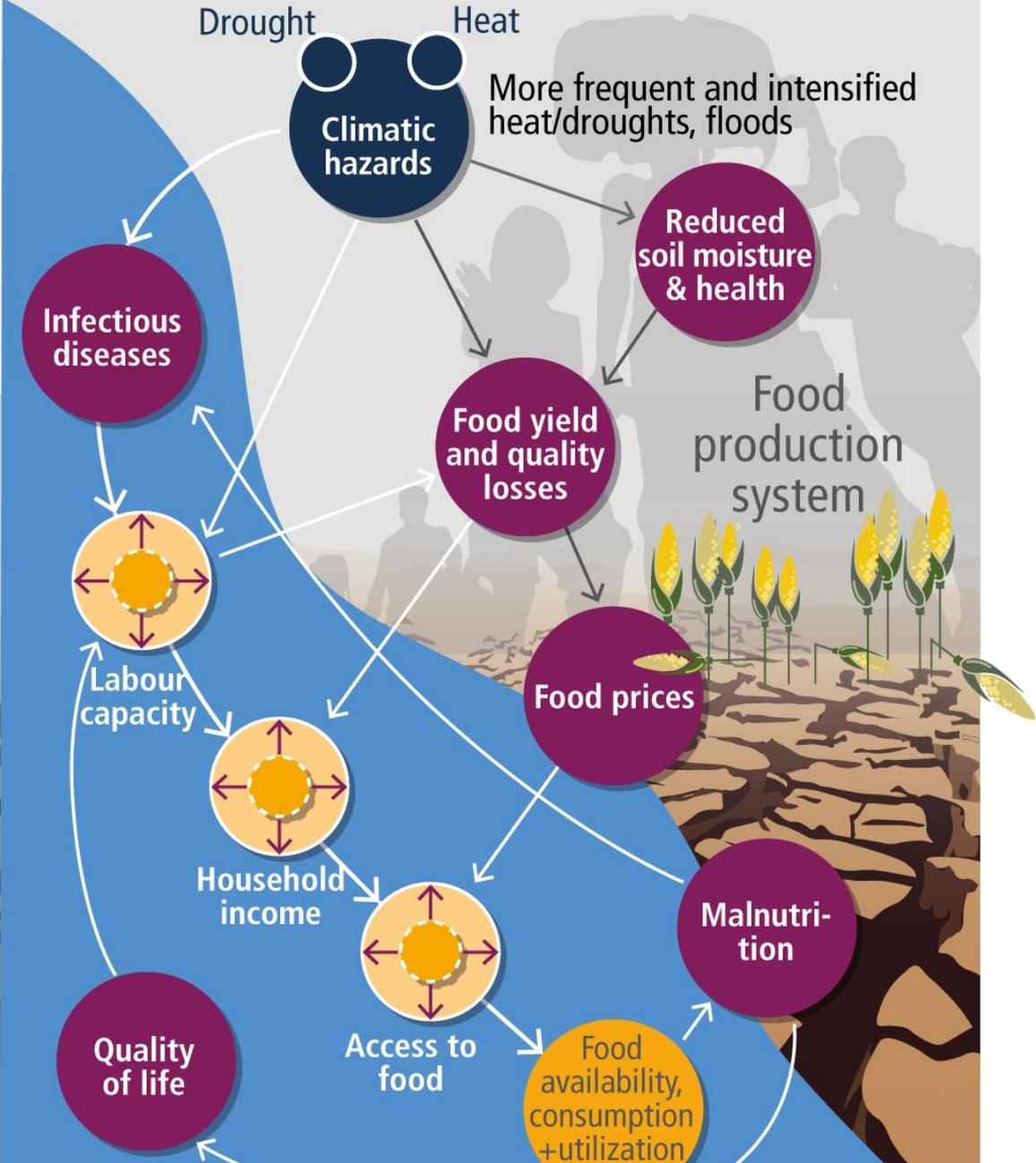
Climate change impacts can worsen other impacts, triggering positive feedback loops.

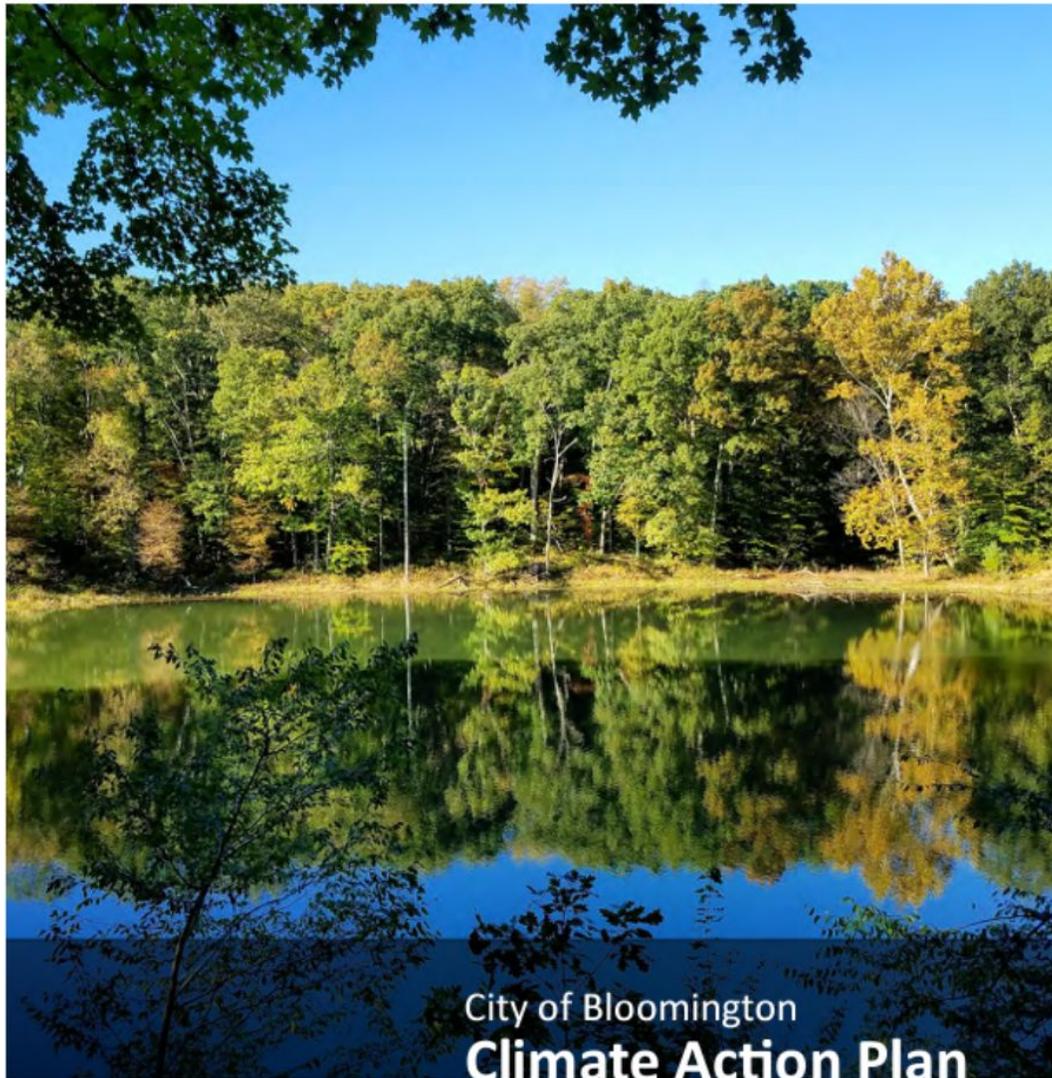
**COMPLEX**

Cascading impacts are difficult to anticipate and manage, making preparation tricky.

**COSTLY**

With serious impacts on resilience, coordinated responses are needed to address these.





City of Bloomington  
**Climate Action Plan**

March 2021



## CLIMATE ACTION PLAN OVERVIEW

Goals are to reduce Bloomington community greenhouse gas emissions 25% below 2018 emissions levels by 2030 and **achieve carbon neutrality by 2050**

Climate action goals are divided into 8 sectors:

- Transportation & Land Use
- Energy & Built Environment
- Waste Management
- Water & Wastewater
- Local Food & Agriculture
- Health and Safety
- Greenspace and Ecosystem
- Climate Economy



## Transportation and Land Use

### Strategy TL 1-I:

**Reduce citywide off-road and lawn equipment annual emissions to below 35,000 metric tons.** (equipment includes gas and diesel powered construction equipment, recreational equipment, and lawn equipment)

Emissions from off-road equipment like construction and lawn equipment comprise a significant portion of fossil fuel consumption in Bloomington. Reduction of fossil fuel off-road equipment use is associated with improved emissions as well as improved air quality, particularly for the users of the equipment. <https://www.edmunds.com/car-reviews/features/emissions-test-car-vs-truck-vs-leaf-blower.html>

### How We'll Measure Progress:

City electric off-road equipment adoption rate, policy adoption status

### Co-Benefits of Strategy:

Improved Air Quality



Reduced GHG Emissions



	Actions	Implementation Phase
	<b>TL1-I-1</b> Introduce a policy to replace City off-road and lawn equipment with electric and low-carbon fuel alternative options at the time of replacement with traditional internal combustion engine (ICE) as optional requiring proof of need. Establish emissions standards, testing and biofuel preference for any combustion vehicles remaining in the equipment fleet. Encourage County, School District, and Indiana University to develop and implement their own policies.	1
	<b>TL1-I-2</b> Develop an incentive program to convert fuel-burning lawn equipment such as gas-powered lawn mowers and blowers to electric. Coordinate with Duke Energy for support and identification of additional rebate programs to promote electric yard equipment.	2

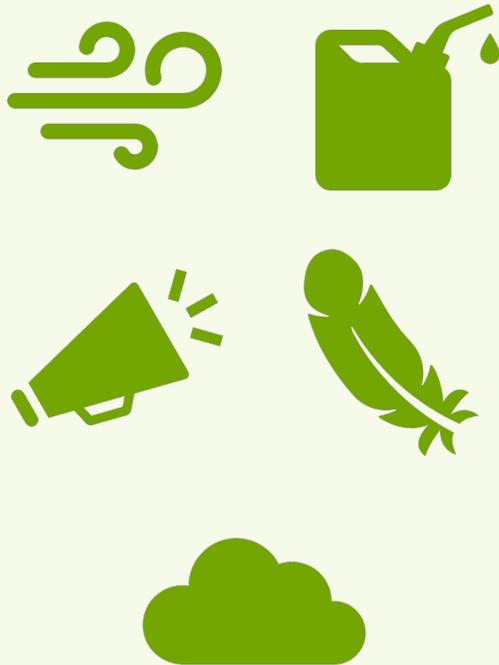
## WHAT IS BATTERY-POWERED LAWN EQUIPMENT?

Cordless yard and garden tools that run off electrically-charged lithium-ion batteries rather than traditional gas engines, now the #1 tool segment in homeowner lawn care

Lawn Mowers • Leaf Blowers • String Trimmers •  
Chainsaws • Hedge Trimmers • More!



## WHY SWITCH?



### REDUCE GHG EMISSIONS

Reduce greenhouse gas emissions by eliminating carbon monoxide byproducts

### LOWER MAINTENANCE

Take away need for fuel refills and seasonal maintenance such as oil changes

### REDUCE NOISE POLLUTION

Replace noisy summer disruptions with a gentle hum

### EASIER TO USE

Easily start and handle lighter electric tools with a switch

### REDUCE AIR POLLUTION

Eliminate release of nitrous oxides, which contribute to smog, acid rain, and ozone formation



## COMMON CONCERNS WITH SWITCHING

### COST

Higher upfront cost, but reduced maintenance cost can mean long-term savings

### BATTERY SPECIFICITY

Some manufacturers offer product lines reliant on the same battery

### RUN TIME

Most electric can mow an average American lawn without recharge, but gasoline can go longer

### PERFORMANCE

Gas mowers tend to do better with tough grass and even cuts – but model matters

# SUMMARY OF BATTERY- VS. GAS- POWERED



## FUNCTIONAL

Battery-powered tools work for average household use



## EASY TO HANDLE

Battery-powered are lighter, easier to use, and need less maintenance



## QUIETER

Gas-powered are more powerful but noisier



## COST-EFFECTIVE

Battery-powered are more expensive upfront but can be cheaper long-term



## HOW YOU CAN DO IT

### JUST START!

Battery-powered tools are intuitive and easy to handle, so all it takes to start your electric transition is two purchases:

- a battery-powered tool
- a battery

Well-known brands include EGO, DeWalt, Greenworks, Makita, Black+Decker, and Ryobi

### FEATURES TO CONSIDER

#### Brushless Motor

Always go brushless; it's more energy-efficient and longer-running than traditional motors

#### Self-Propeller

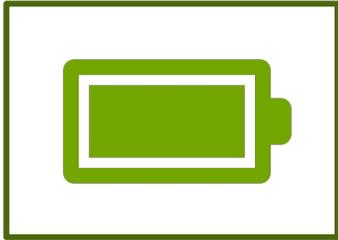
For mowers, do you want it to move itself? It drains the battery faster but saves you energy

#### Run Time & Power

Check your lawn size and ensure you know what kind of endurance you need to know

# KEY TIPS FOR A SUCCESSFUL SWITCH

Follow these for a smooth experience!



Choose one brand to buy from  
– lithium batteries aren't  
interchangeable between  
brands



Switch in steps – phase out  
your gas-powered tools when  
old, malfunctioning, or out of  
fuel

[www.gogreendistrict.com/waste](http://www.gogreendistrict.com/waste)



Learn battery-powered  
maintenance – store your tools  
safely and keep them charged

# COMMONLY ASKED QUESTIONS

1. Battery-powered lawn equipment runs off electricity, but electricity is generated by burning gas. So will switching really reduce emissions?
  - Combatting climate change requires **both** a transition to electrics and a transition to renewable energy.
  - That’s why the Bloomington Climate Action Plan also includes a goal of “increasing distributed renewable energy to 250,000 MWH of total generation annually by 2030”.
  - Still gain other benefits, such as decreased noise pollution, in the meantime.
2. How big of a difference is there in the average upfront cost of a gas- vs battery-powered tool?
  - It depends on what you’re looking at. For some tools, such as string trimmers, there is no difference. Sometimes it’s actually cheaper to go battery-powered!

	Push Mower	Riding Mower	Zero-turn Mower	Leaf Blower	String Trimmer
Gas-Powered	\$ 320	\$ 3,725	\$ 5,300	\$ 263	\$ 200
Battery-Powered	\$ 368	\$ 4,749	\$ 8,000	\$ 175	\$ 200
<b>Difference</b>	<b>\$ 48</b>	<b>\$ 1,024</b>	<b>\$ 2,700</b>	<b>\$ (88)</b>	<b>\$ -</b>

## COMMONLY ASKED QUESTIONS

3. Will switching to battery-powered tools make my electricity bill go up?
  - Yes, but it will make your fuel costs go down!
  - Battery-powered tools add around 2-48 cents to your electricity bill per hour of use
  - Gas-powered tools use around 99 cents worth of fuel per hour of use
  
4. What shops in Bloomington carry battery-powered lawn equipment, and what brands do they have?
  - Black Lumber Company - carries Makita
  - Koenig Equipment, Inc - carries Stihl
  - Richard's Small Engine, Inc - carries Husqvarna
  
5. How can I maximize the lifespan of my yard tool batteries?
  - Store batteries in a cool, dry location without extreme temperatures
  - Use the battery regularly to prevent it from fully discharging
  - Unplug the battery once fully charged to prevent overcharging
  - Follow manufacturer's guidelines for brand-specific care and maintenance tips

# CITY IMPLEMENTATION



Actions	Implementation Phase
 <p>TL1-I-1 Introduce a policy to replace City off-road and lawn equipment with electric and low-carbon fuel alternative options at the time of replacement with traditional internal combustion engine (ICE) as optional requiring proof of need. Establish emissions standards, testing and biofuel preference for any combustion vehicles remaining in the equipment fleet. Encourage County, School District, and Indiana University to develop and implement their own policies.</p>	1

In the last year, the Parks and Recreation Department has replaced most of their gas-powered lawn equipment with battery-powered tools to help achieve strategy TL-1.

