

**ARTICLE 16:**  
**Gas-Powered Leaf Blower Phase Out**  
*(Binding Resolution)*

2024 Acton Town Meeting  
Day 2: May 7, 2024  
7pm ABRHS

*Endorsed By:*



# Summary

**In Acton and elsewhere, the use of gas-powered leaf blowers by landscapers has increased dramatically in recent years.**

**The implications are significant because....**

**Gas-powered leaf blowers (GLBs) are unhealthy for residents, operators, and the planet because they emit harmful levels of:**

- **Noise**
- **Air pollution**
- **Greenhouse gas**



**Fortunately, much improved battery-powered leaf blowers (BLBs) are less expensive to operate and beneficial to both people and planet as they are:**

- **Quiet**
- **Clean**
- **Green**



**As a result, many cities and regions have acted to phase out GLBs. We propose that Acton do the same.**

# Many Communities Have Begun Phasing Out GLBs



**WASHINGTON DC** has been GLB-free since Jan 1, 2022



**CALIFORNIA** banned the sale of ALL gas-powered lawn equipment starting Jan 1, 2024



**MIAMI BEACH** GLB-free since Aug 1, 2023

**LEXINGTON, ARLINGTON, BELMONT, CONCORD and CAMBRIDGE** all have passed bylaws or ordinances to become GLB-free

Dec. 4, 2023: Cambridge City Council Passes Ordinance 9-0 to Phase Out GLBs

**Local Communities Are Getting On Board As Well**



**LEXINGTON**



**ARLINGTON**



**BELMONT**



**CONCORD**



**CAMBRIDGE**

## Two Local All-electric Landscapers Prove It Can Be Done

WBZ News  
Segment

[Click for  
video](#)



**T.J. Collins**  
Needham MA



WGBH News  
Segment

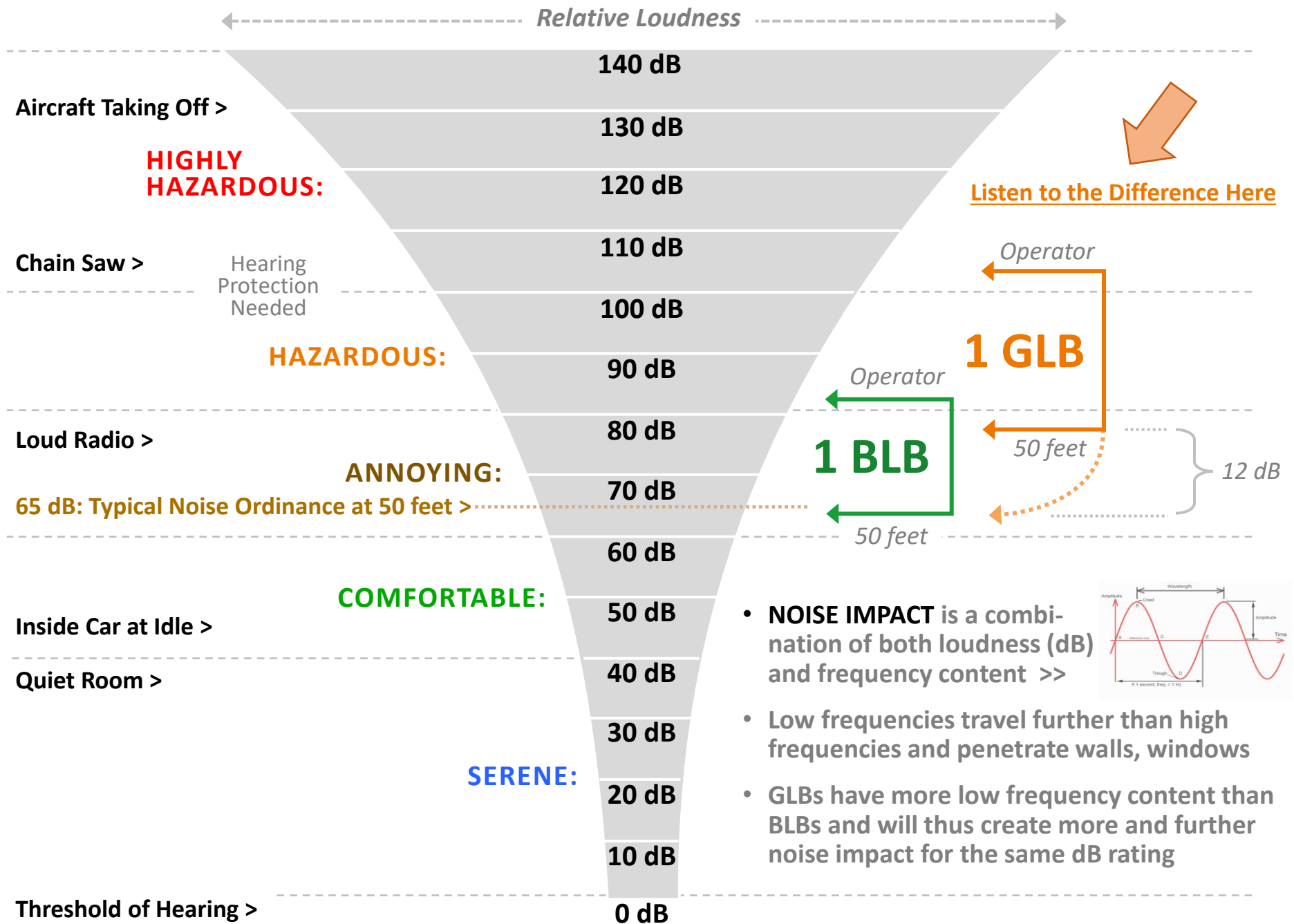
[Click for  
video](#)

**ECO-QUIET**  
Concord MA  
Founded by George  
Carrette, has been all-  
electric since 2014.

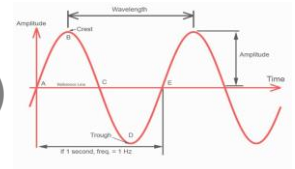
# 1. HEALTH

- **Noise**
- **Air pollution**
- **Greenhouse Gas**

# NOISE: GLBs Emit HAZARDOUS Amounts



- **NOISE IMPACT** is a combination of both loudness (dB) and frequency content >>



- Low frequencies travel further than high frequencies and penetrate walls, windows
- GLBs have more low frequency content than BLBs and will thus create more and further noise impact for the same dB rating

# TOXIC AIR POLLUTION: GLBs Produce STAGGERING Amounts



3 HP GLB:  
25 lbs



450HP Gas Ford Raptor:  
5,757 lbs

## HARMFUL/SMOG FORMING POLLUTANTS:

	3 HP GLB:	Ratio	450HP Gas Ford Raptor:
1. Non methane hydrocarbons	1.495 gr/min	300X more than	0.005 gr/min
2. Oxides of Nitrogen	0.010 gr/min	2X more than	0.005 gr/min
3. Carbon Monoxide	6.445 gr/min	23X more than	0.276 gr/min

## CARCINOGENS:

4. Benzene
5. Butadiene
6. Formaldehyde
7. Acetaldehyde



4 of "Top 10"  
carcinogens

## AIRBORNE PARTICULATES:

8. PM 2.5

Penetrate deep  
into the lungs

*Using a GLB for 1 hour produces as much smog forming pollution as driving a car 1,100 miles, the distance from Boston to St. Louis MO.*



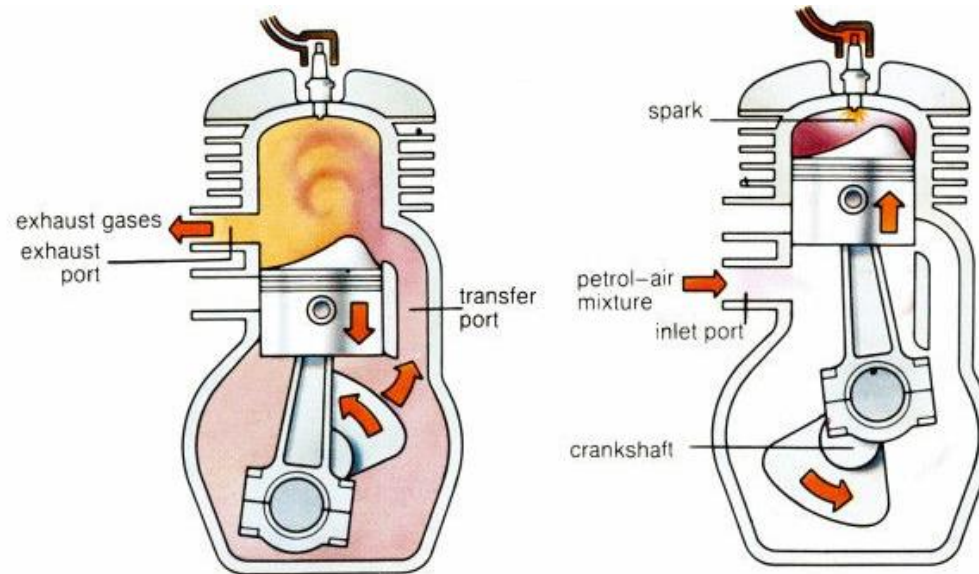
# Why Do GLBs Produce So Much Air Pollution?

## Two-stroke Engines:

GLBs, chain saws, trimmers, outboard motors...

**Only 65% of the gasoline is burned, so 35% turns into air pollution.**

**Also lubricating oil mixed into gas burns poorly and much turns into air pollution.**



*Pros: Light, cheap, can run upside down and sideways*

*Cons: Inefficient, dirty*

*Pros: Efficient, clean*

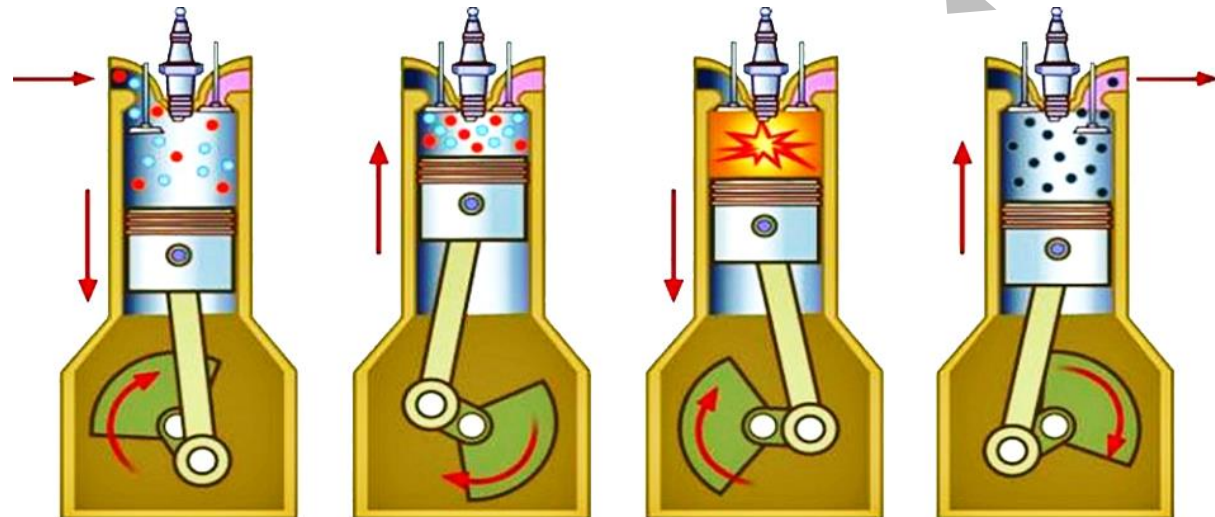
*Cons: Heavier, more expensive, need to run fairly level*

## Four-stroke Engines:

Lawn mowers, snow blowers, cars...

**90+% of the gasoline is burned, so less than 10% turns into air pollution.**

**Lubricating oil is not burned.**



1. Intake

2. Compression

3. Power

4. Exhaust



# GREENHOUSE GAS: GLBs Produce DAMAGING Amounts

In Acton, GLBs produce an estimated 600,000 lbs. of preventable CO2 per year



Hourly CO2e Production:

**12 lbs/hour**

**0.6 lbs/hour**

**0 lbs/hour**

Yearly CO2e Production:

**7,440 lbs/year**

**372 lbs/year**

**0 lbs/year**

From 1 GLB

Charged with typical grid power mix

Charged with Renewable Energy (RE)



A mature tree absorbs 48 lbs. of CO2 per year. 600,000 lbs. of CO2 negates the air cleansing effect of 12,500 mature trees.

# HARM Caused by GLBs

## NOISE:

- Permanent hearing loss and increased risk of dementia
- Physical and psychological stress and irritation
- Feeling of being under attack
- Interference with concentration and productivity for those working at home

## AIR POLLUTION:

- Respiratory infections
- Lung and other cancers
- Heart diseases
- Neurological disorders
- Gastrointestinal disorders
- Kidney & liver diseases
- Asthma, bronchitis, COPD
- Adverse birth outcomes



*With a “yes” vote, you can significantly reduce these harms for 24,000 Actonians!*

## VIBRATION



*Landscapers receive the greatest health benefits from phasing out GLBs!*

## GREENHOUSE GAS:

**600,000 lbs. per year from Acton GLBs**

- Extreme weather, winds, flooding
- Extreme heat, fires
- Drought, famine
- Rising oceans, loss of coastline
- Dying forests, wildlife
- Collapsing ecosystems
- Migration, refugees
- Political unrest



*Children are particularly vulnerable to air pollution as they are active, breathe deeply and have immature immune systems.*

## 2. PRODUCT

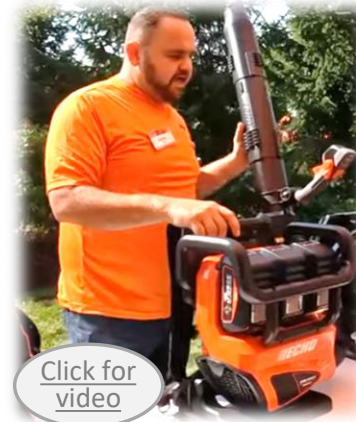
- **Availability**
- **Performance**
- **Weight**
- **Cost**
- **Batteries & Charging**
- **Alternatives**
- **Battery Recycling**

# Manufacturers Are Jumping In

- 2024 will be a bellwether year for high performance BLBs, with many new offerings
- Landscapers will benefit as increased competition drives performance up, cost down
- Weight can be adjusted on many models by selecting how many, what size batteries to carry



Here a **Milwaukee** product manager demos the performance of a new, high performance BLB offering. Milwaukee is a highly respected manufacturer of professional power tools



**Ego** (above) is the Tesla of BLB makers: 100% electric from the start

**Echo** (top) and **Stihl**, leading GLB makers, have introduced high performance BLBs

# Product Choice and Availability Are Good and Getting Better

*Accelerated by California banning  
the sale of GLBs Jan. 1, 2024*



**GREENWORKS 755**



**EGO LBPX8004-2**



**Toro 66100**



**Ryobi RY404170**



**Stihl BGA 300**



**Husqvarna 550iBTX**



**Makita CBU02Z**



**Kress KC500.9**

*8-minute  
charge time!*



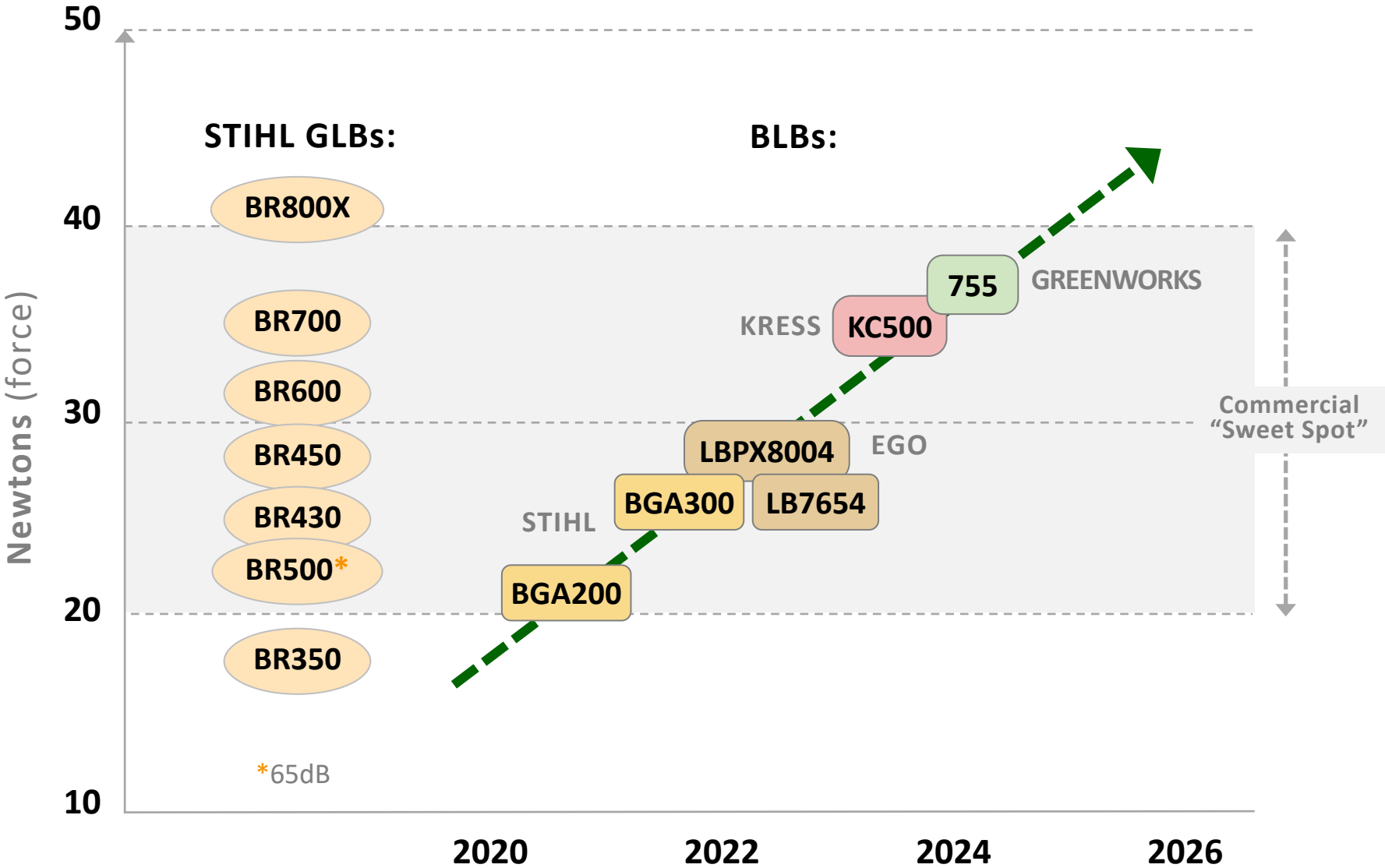
**Milwaukee M18 FUEL**



**Echo DPB-5800T**

# BLB Leafblower Performance Has Improved Rapidly

*BLB performance is no longer an obstacle to commercial use*



# More Runtime or More Weight? You Choose

- BLB weight is primarily a function of battery capacity
- Some BLBs have single large batteries (monolithic)
- Others are modular (2-4 batteries)



**14 lbs.**

**EGO LB7654**

- 1 x 5Ah battery
- **9.7 lbs.** handheld



**23 lbs.**

**Echo DPB-5800T**

- 2 x 5Ah batteries
- Modular



**26 lbs.**

**TYPICAL GLB**



**32 lbs.**

**Milwaukee M18 FUEL**

- 2 x 8Ah batteries
- Modular



**32 lbs.**

**Kress KC500.9**

- 11Ah battery
- Monolithic



**33-38 lbs.**

**Stihl BGA 300**

- **33 lbs.** w/27Ah battery
- **38 lbs.** w/41Ah battery
- Monolithic

- You can choose between weight and frequency of battery swapping
- Modular batteries typically charge faster if charging on the worksite

# GLB Operating Cost = 13x BLB Operating Cost



Gas to Oil Ratio = 50:1  
 - 0.46 Gal. Gas = \$1.71  
 - 1.2 Oz oil = \$0.68  
 - Maintenance = \$0.24  
 Total: \$2.63/hour

Uses 0.7 kWh x  
 \$0.29 per kWh =  
 \$0.20/hour

	GLB Operating Cost:	BLB Operating Cost:		BLB Operating Cost Savings per Leafblower:
<b>1 Hour:</b>	<b>\$2.63</b>	<b>\$0.20</b>	<b>&gt;</b>	<b>\$2.43</b>
<b>1 Year:*</b>	<b>\$1,630</b>	<b>\$124</b>	<b>&gt;</b>	<b>\$1,506</b>

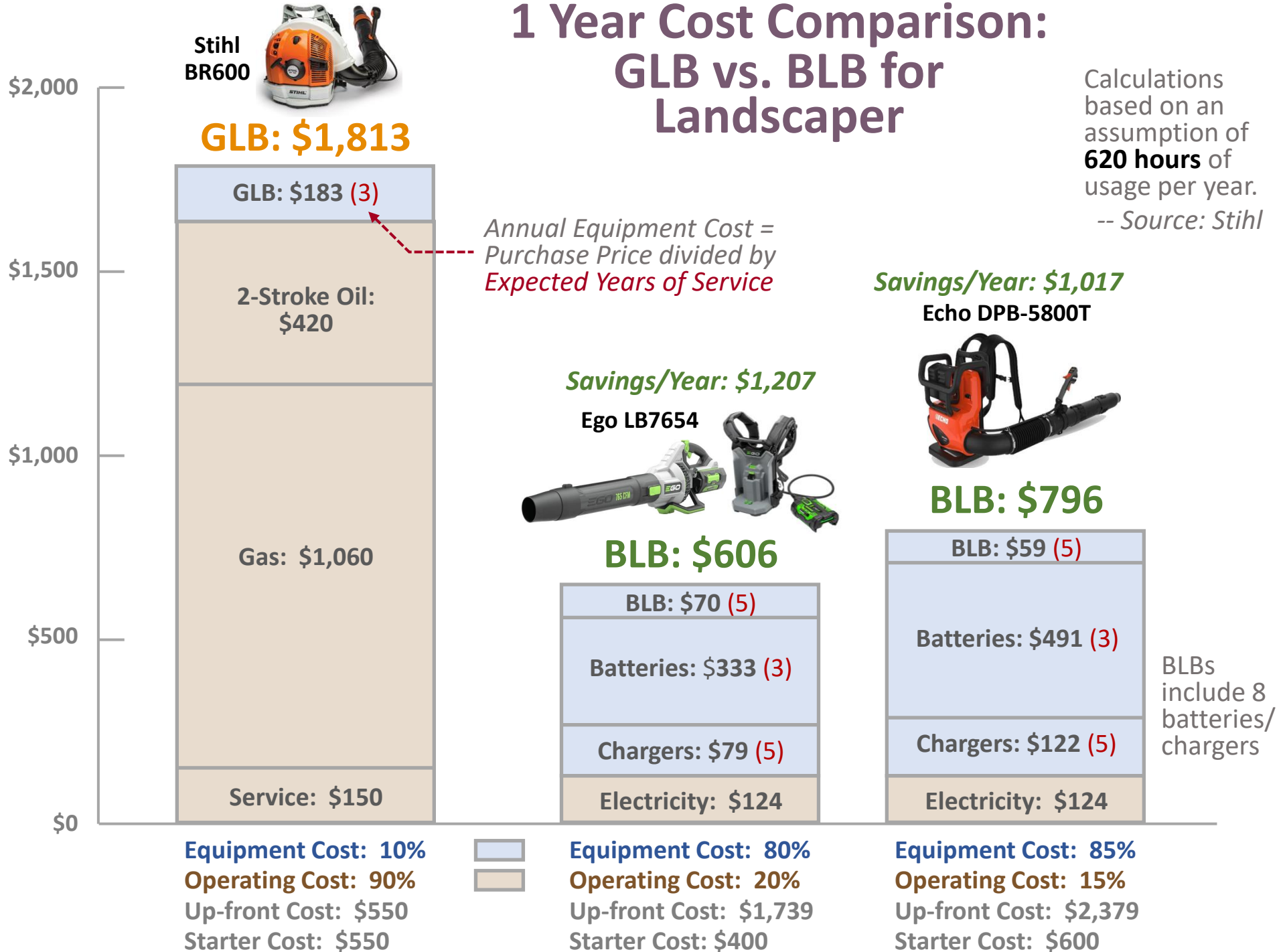
\*Leafblower usage assumption: 40 weeks in use per year, averaging 15.5 hours use per week = 620 total hours usage per year (from Stihl).  
 Maintenance = \$150/year = \$0.24/hour.

**Note:** The annual operating cost of a BLB (\$124) is less than the annual maintenance cost of a GLB (\$150).



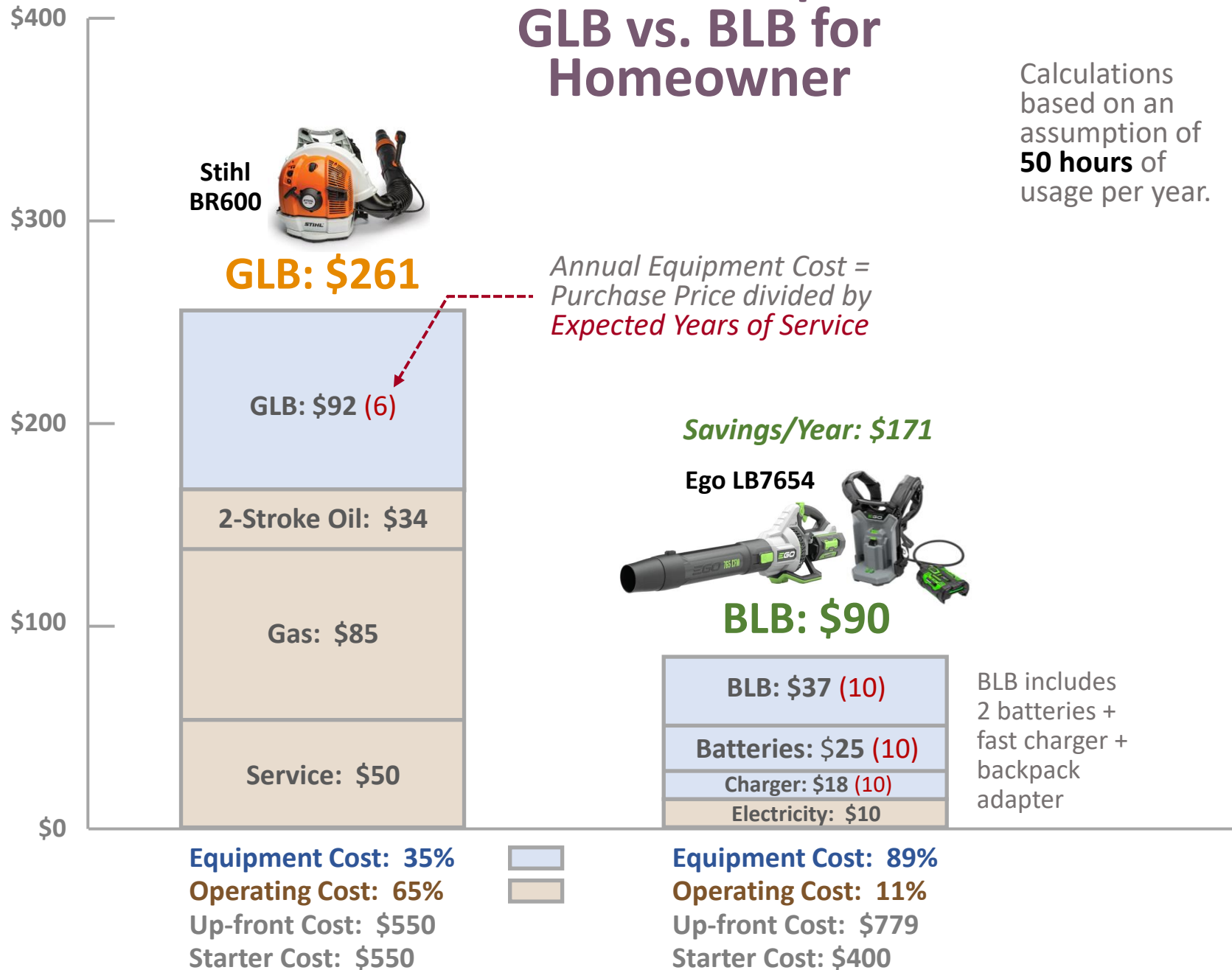
# 1 Year Cost Comparison: GLB vs. BLB for Landscaper

Calculations based on an assumption of **620 hours** of usage per year.  
-- Source: Stihl

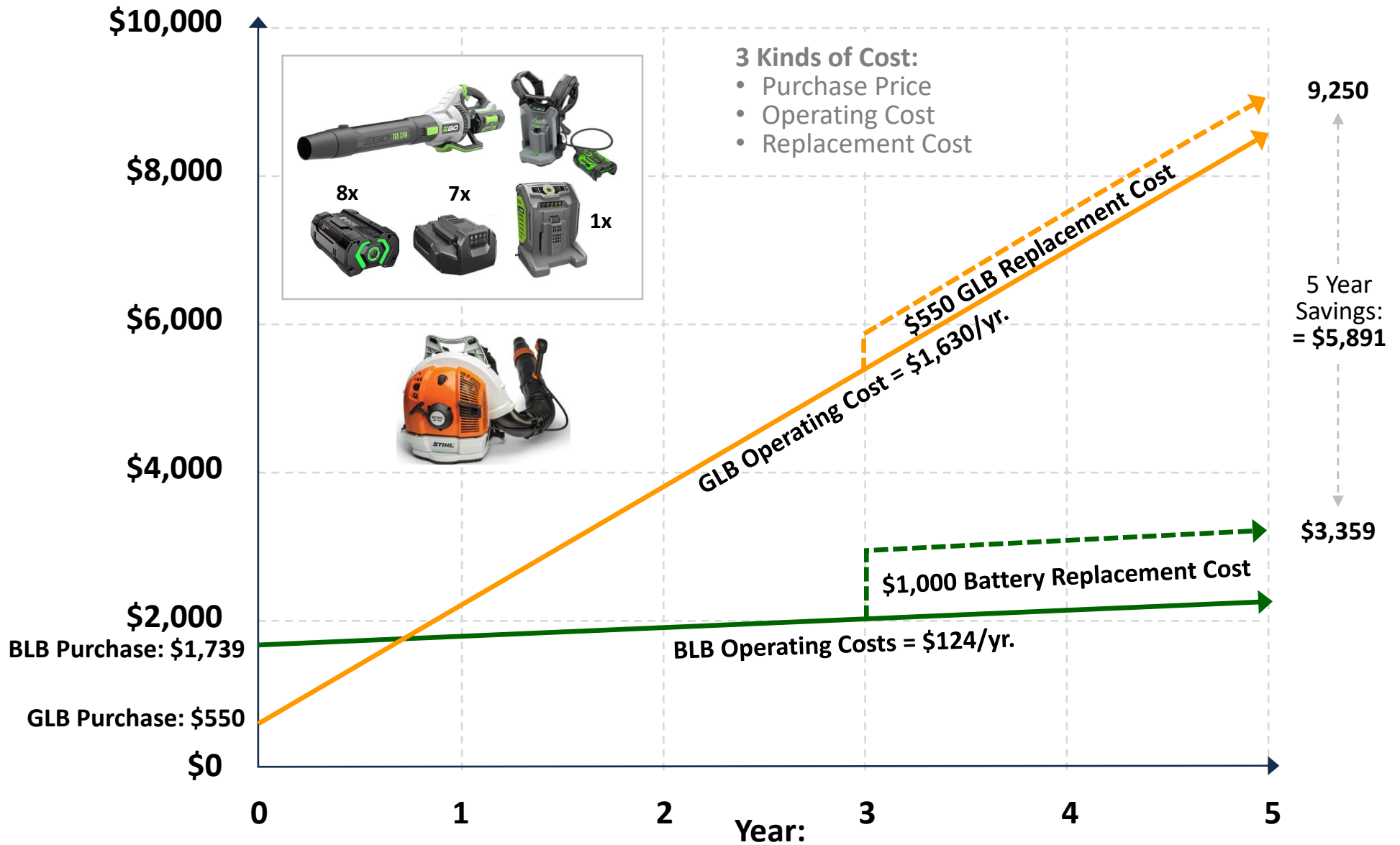


# 1 Year Cost Comparison: GLB vs. BLB for Homeowner

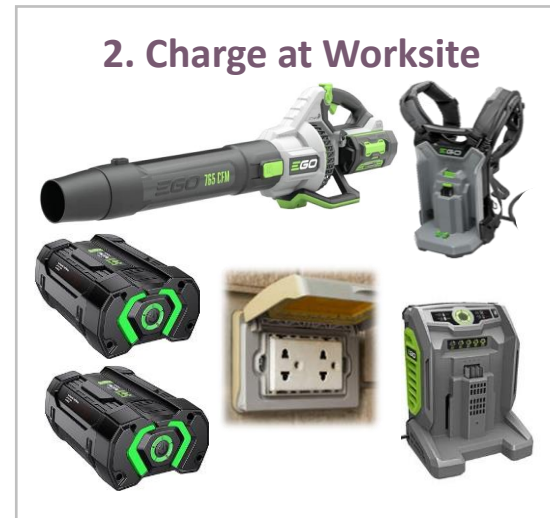
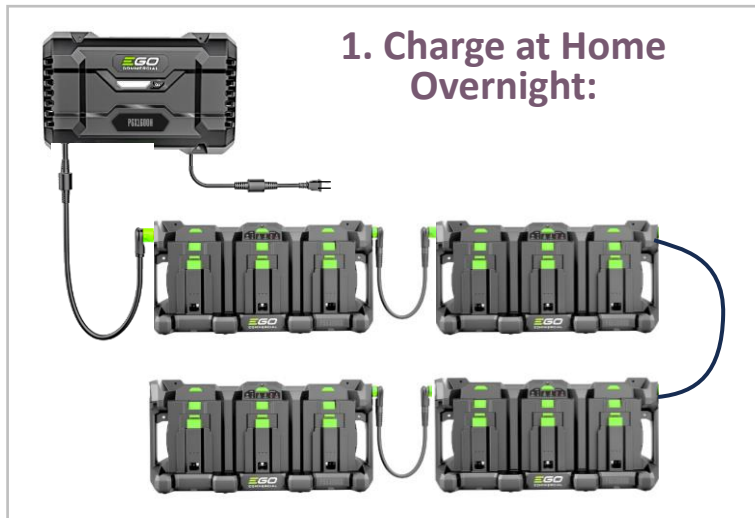
Calculations based on an assumption of **50 hours** of usage per year.



# 5 Year Landscaper Cost Comparison: GLB vs. BLB



# Battery Charging: “No juice, no dough”



Run 24x7  
with 2  
Batteries,  
Fast Charger,  
110V Outlet

Annual Cost over 3 Years including  
electricity = \$381



Don't always have access to an outlet?



*BLBs, when run full turbo, can discharge batteries quickly: 15-40 minutes, depending on battery size.*

*Battery management knowledge and discipline are essential to the effective use of BLBs!*

# Leafblower Batteries Are Recyclable

## Home Depot Dropoff:

- Rechargeable Batteries
- Compact Fluorescent Bulbs
- Plastic Shopping Bags



## TESLA on Lithium-Ion Battery Recycling

“Batteries...can be recycled to recover their valuable materials for reuse over and over again. None of our scrapped lithium-ion batteries go to landfilling, and 100% are recycled.”

## Final Point:

**Q: Will “market forces” phase out GLBs without regulation?**

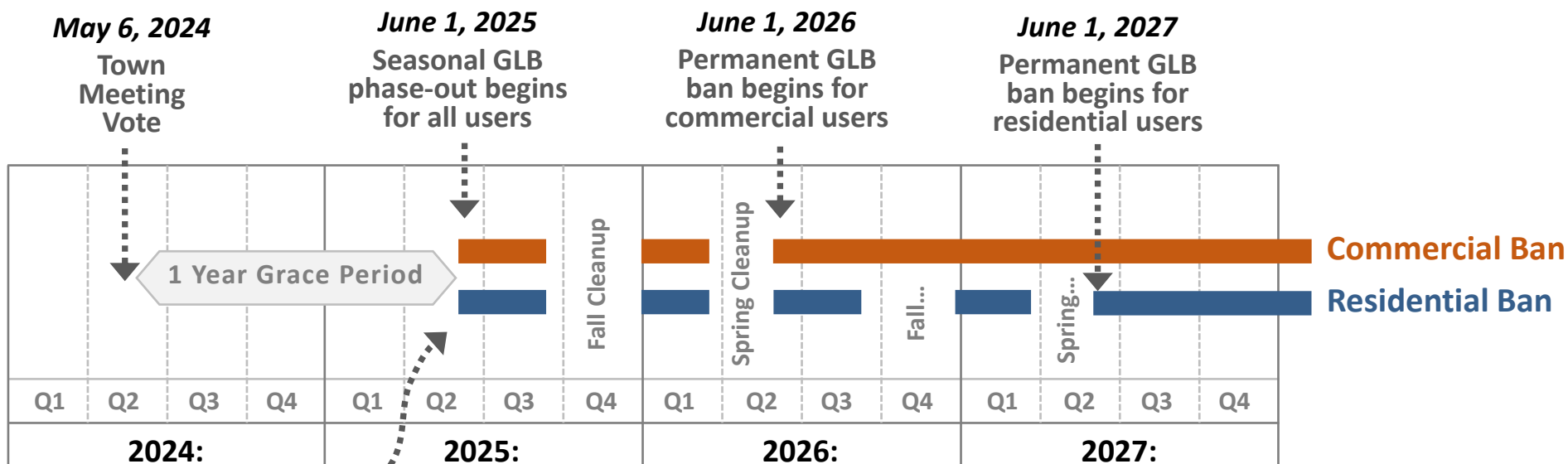
**A: Market forces didn’t work for buffalo, Starmet or WR Grace**



**Market forces don’t work in “Tragedy of the Commons” situations where public resources are - WITHOUT CHARGE - depleted or polluted to make or save money:**

- **Depletion Examples:** Overfishing, buffalo herd slaughter from 8,000,000 to 200 in the 1870-90s
- **Pollution Examples:** Local Superfund Sites **WR Grace** and **Nuclear Metals (Starmet)**. Also, leaky natural gas pipes and GLBs.
- *The only municipalities where commercial leaf blower operators have moved from GLBs to BLBs is where regulations have been enacted.*
- Some homeowners are moving to BLBs voluntarily, but they are a small percentage of usage

# Proposed Acton Leafblower Bylaw Summary



## Seasonal Phase-out Schedule:

GLB use allowed:

**Spring Cleanup:**  
Mar 15-May 31

**Fall Cleanup:**  
Sep 15-Dec 31

**Exemption:** The use of Wheeled Gas-powered Leaf Blowers powered by 4-stroke engines will be allowed on lots larger than 1 acre during the Spring and Fall cleanup periods.

**Enforcement:** By Department of Health or designee assisted by DPW and Police.

**Liability:** Both property owners/managers and commercial GLB operators are liable for compliance.

**Fines:** Up to \$300 per incident.