

# LEAF BLOWER CONSIDERATIONS

**Park and Recreation Board**

**May 19th, 2022**

The logo of the City of Dallas, featuring a stylized white 'D' with a leaf inside, set against a dark blue background with a fine white grid pattern.

**City of Dallas**

Susan Alvarez, P.E. Assistant Director  
Office of Environmental Quality and Sustainability



## Leaf Blower Overview

- **The Good:** Quick, cheap powerful equipment widely used for many landscaping tasks
- **The Bad:** Air Quality & Noise Impacts
- **The Ugly:** Public Health & Equity Concerns
- **Municipal /State Action**
- **Options for Consideration in Dallas**

# Leaf Blower Impacts on Air Quality



- <sup>(5)</sup> 1.2 billion gallons of gas are burned per year by United States garden equipment.
- About 1/3 of this material is discharged as aerosols during equipment use.
- Leaf blowers emit pollution levels comparable to automobiles<sup>(1)</sup>
- A 2011 test by the car experts at Edmunds showed that “a consumer-grade leaf blower emits more pollutants than a 6,200-pound 2011 Ford F-150 SVT Raptor.”<sup>(1)(4)</sup>
- The two-stroke engine (in the Edmunds study) emitted nearly 299 times the hydrocarbons of the pickup truck and 93 times the hydrocarbons of the sedan.
- Leaf blowers emit carbon monoxide and nitrogen oxides. <sup>(1)</sup> Nitrogen oxides are precursors to ground level ozone; North Texas is in Severe Non-Attainment status.
- Switching to electric (battery or plug in) leaf blowers would sharply reduce air pollution<sup>(1)</sup>

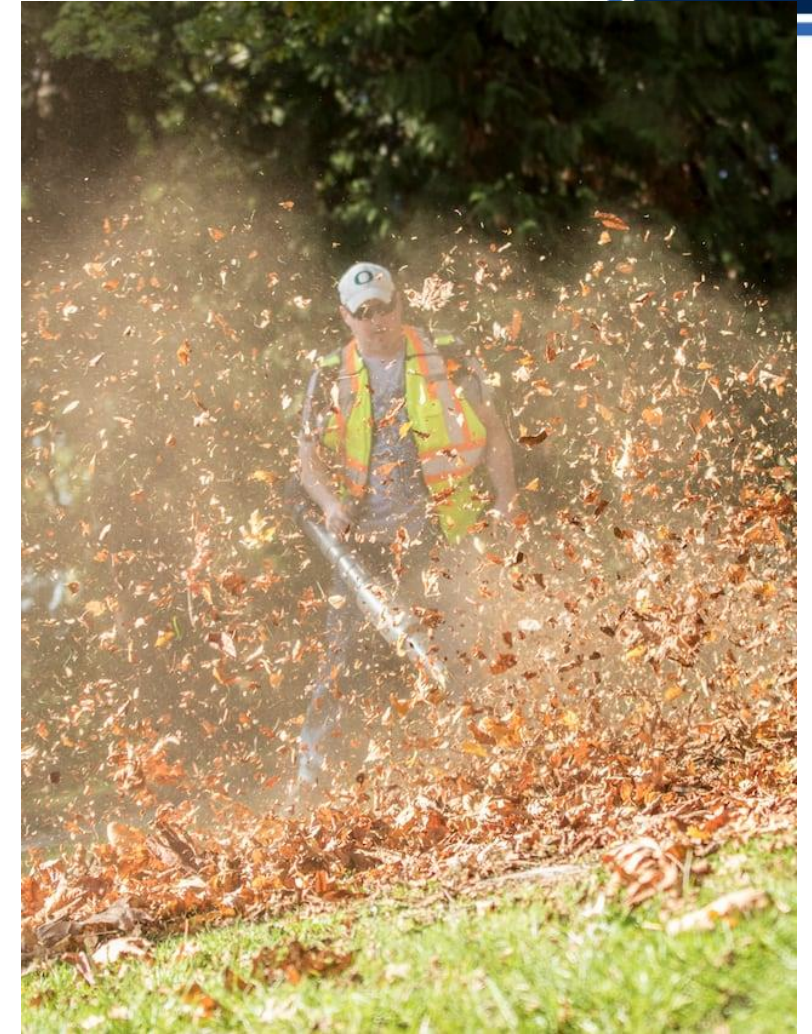




# Leaf Blower Impacts on Public Health



- Children and the elderly are especially vulnerable to the dust (particulate) and toxic emissions from leaf blowers
- Manufacturers recommend a 50 feet minimum safe distance for bystanders.
- The low frequency noise from leaf blowers can penetrate most barriers such as walls. This contributes to hearing loss for adjacent residents.
- In densely populated neighborhoods, a gas blower can affect up to 15 times the number of households as an electric leaf blower.
- Equity impacts can be associated with both the use, and the potential transition away from using two-stroke landscape equipment.



# Local Government Actions Related to Leaf Blowers

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Over 475 different cities have joined the U.S. Climate Mayors' pledge to reduce emissions and implement local climate plans.

Over 100 cities have implemented policies, codes and ordinances related to gas-powered landscape equipment.

Drivers of local government action related to leaf blowers, include, but are not limited to:

- Addressing compliance reducing local air quality non-attainment designations.
- Meeting climate plan related emissions reductions
- Meeting local noise ordinances.
- Addressing community complaints





# Common Approaches in Use/ Dallas Options:



- **Bans on gas-powered lawn equipment:** some are complete bans; some did partial blower/ mower bans
- **Decibel ordinances:** Noise ordinances limit decibels from equipment to less than 65 db; hard to enforce
- Most cities address equity challenges through **equipment exchanges, rebates and incentives;**
- Some **cities worked with local merchants /landscape professionals** to develop and implement program.
- Many programs included **an implementation time lapse** between ordinance adoption and implementation
- Many **worked with local landscape equipment merchants** towards conversion.
- **Dallas' Environmental Commission has been tasked with bringing recommendations to the Environment & Sustainability Council Committee for consideration this Fall.**



# Dallas Park & Recreation Overview



- ~2,600 pieces of small equipment
  - ~530 Leaf Blowers
- Majority of small equipment is **4-cycle**
  - Use gasoline and oil mixture
  - Comply with the California Act Resource Board (CARB) regulations
- Small number of **2-cycle** equipment that are specialized and used only a few times a year





# Dallas Park & Recreation Green Strike Teams



- **Piloting Green Strike Teams for two districts**
  - Use electric (lithium battery-powered) hand-held landscaping equipment
  - Blowers, line trimmers, hedge trimmer, small chainsaw and pole saw
- Strike Teams have 3 men crews
- District 1 maintains the area around White Rock Lake; areas are maintained on a two-week schedule
- District 3 maintains parks in the downtown area; each park is maintained once a week





# Dallas Park & Recreation Pilot Results



## District 1 – White Rock Lake

- Electric Equipment not sufficient
  - Not powerful enough to maintain growth after two weeks
  - Slowed down rate of work

## Employee buy-in was low

- Batteries are heavy
- Equipment is less powerful
- Prefer gas powered equipment

## District 3 – Downtown

- Using equipment for three years
  - Operating well
  - Batteries lasted as long as they should
  - Quality of work is good
  - Reliable
  - No repair cost, only cost to replace batteries
- **Significant emissions savings**



# Dallas Park & Recreation Pilot Results



## Emissions Savings of Green Strike Teams

### Based on Operating Equivalent Gas-Powered Equipment

Type	Model	Fuel Type	Units	Use	Annual Use (hrs)	HC Emissions (lb/yr)	NOX Emissions (lb/yr)	CO2 Emissions (T/yr)
Blower (Large)	BR600	4-Cycle Gas	1	3 hrs/day	540	37.91	27.82	9.61
Handheld blower (small)	BG86	4-Cycle Gas	1	3 hrs/day	540	10.67	7.83	2.71
Line trimmer	FS131	4-Cycle Gas	3	6 hrs/day	1080	113.73	83.47	28.84
Chainsaw	MS170	4-Cycle Gas	1	3 times per year for 6 hrs each use	18	0.67	0.49	0.17
Hedge trimmer	HL91K	4-Cycle Gas	1	4 times per year for 6 hrs each use	24	0.53	0.39	0.13
Pole Saw	HT103	4-Cycle Gas	1	3 times per year for 6 hrs each use in Fall	18	0.47	0.34	0.12
<b>Total Annual Emissions</b>						<b>163.98 lbs</b>	<b>120.34 lbs</b>	<b>41.58 tons</b>





# Dallas Park & Recreation Future Efforts



- Increase employee buy-in through communication of the benefits of reduced emissions, less noise, and health benefits
- Conduct a side-by-side comparison of fuel powered equipment versus new electric equipment since technology has advanced in the last three years
- Add Green Strike Teams to Park Maintenance Districts with parks that have a weekly maintenance schedule and moderate grass/vegetation growth
- Funding/grant for an electric Zero-Turn mower for District 3, downtown parks that will further reduce emissions

Mower	Model	Fuel Type	Units	Daily Use (hrs)	Annual Use (hrs)	HC Emissions (lb/yr)	NOX Emissions (lb/yr)	CO2 Emissions (T/yr)
Scag – Zero Turn	STTII-72-31KB/DF	3 - cylinder duel fuel	1	5	900	161.77	97.80	130.71

**Conclusion: Electric equipment was successfully used for the maintenance of some parks but not all parks**





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# References



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- <sup>3</sup> Dudley, David. "The Devils Hair Dryer". City Lab November 3, 2016: <https://www.citylab.com/life/2016/11/the-case-against-neighbors-with-leaf-blowers/506324/>
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# Cities With Leaf Blower Restrictions

Arlington, MA	Lawndale, CA	Santa Monica, CA
Aspen, CO	Los Altos, CA	Scarsdale, NY
Belvedere, CA	Los Angeles, CA	Scottsdale, AZ
Berkeley, CA	Malibu, CA	Sunnyvale, CA
Beverly Hills, CA	Mamaroneck, NY	Tampa, FL
Boulder, CO	Maplewood, NJ	Tiburon, CA
Brookline, MA	Menlo Park, CA	Toronto, ON
Cambridge, MA	Mill Valley, CA	<b>San Antonio, TX</b>
Carmel, CA (banned in 1975 – first city in the USA)	Montclair, NJ	Sunnyvale, CA
Claremont, CA	New Rochelle, NY	Tampa, FL
Del Mar, CA	Oyster Bay, NY	Tiburon, CA
Dobbs Ferry, NY	Palm Beach, FL	Toronto, ON
Evanston, IL	Los Altos, CA	Vancouver BC
Foster City, CA	Palo Alto, CA	Washington, DC
Framingham, MA	Pelham Manor, NY	Westchester County, NY
Hastings, NY	Pelham, NY	West Hollywood, CA
Honolulu, HI	Portland, OR	White Plains, NY
<b>Houston, TX</b>	Portsmouth, NH	Winnetka, IL
Indian Wells, CA	Rye, NY	Yonkers, NY
Laguna Beach, CA	Santa Barbara, CA	<b>(Highland Park, TX – under consideration)</b>

