

A scenic landscape featuring a gravel road with two yellow double lines leading towards a range of mountains under a blue sky with scattered white clouds. The foreground is a wide, flat expanse of gravel, and the middle ground shows rolling hills and sparse vegetation. The background consists of rugged mountains under a vast, bright sky.

Telework Mileage

Kendal Stegmann

Director

Air Quality Division

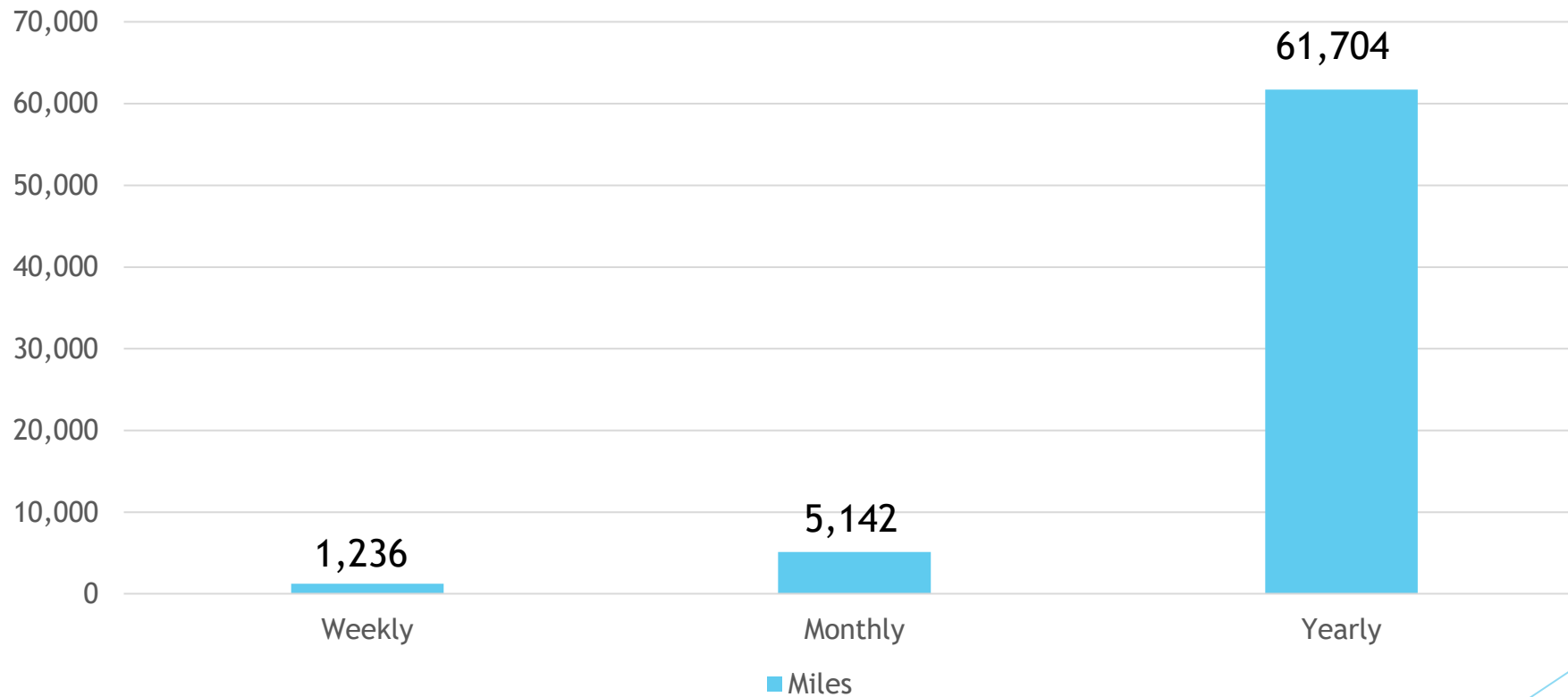
DEQ Telework Status

Division	Number of Employees	Number of Employees Teleworking
Air Quality	100	69
Administrative Services	44	13
Communication & Education	5	5
ECLS	78	45
Land Protection	76	72
Legal	17	14
State Environmental Lab	51	5
Water Quality	105	78
Total	476	301

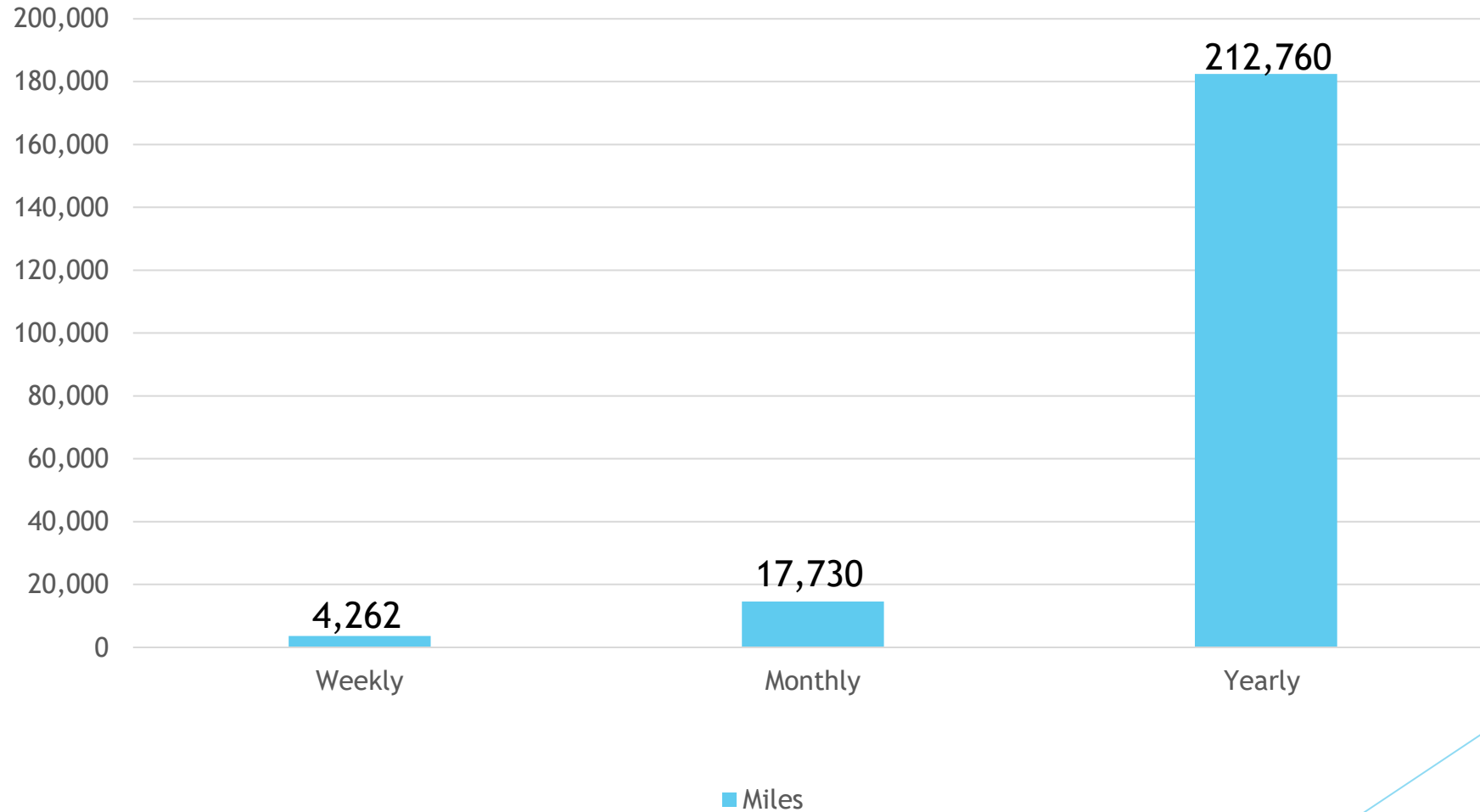
Telework and Mileage Table

Staff	Monday	Tuesday	Wednesday	Thursday	Friday	Distance From Home	Round-Trip	Weekly
Sara	T	T				10	20	40
Joe			T			3	6	6
Chris	T		T			12	24	48

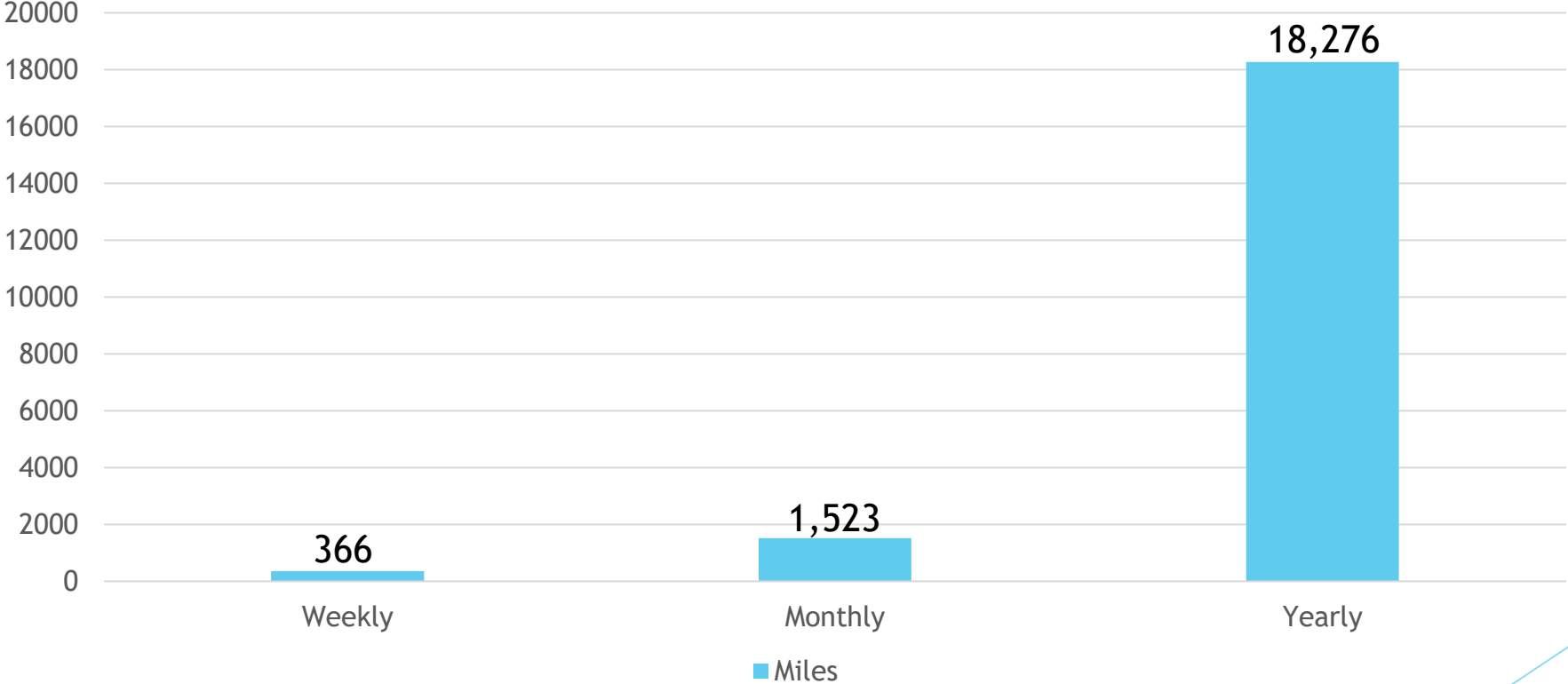
Administrative Services Division Miles



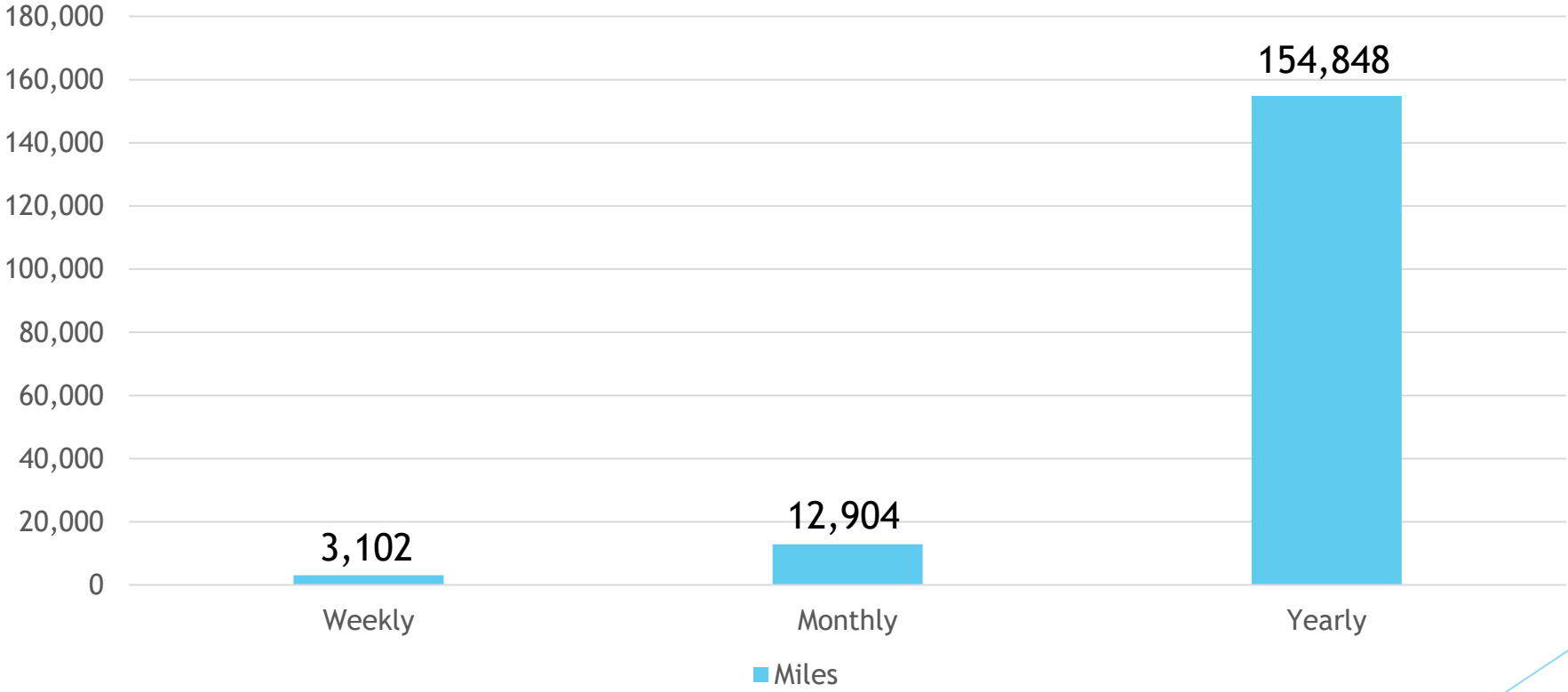
Air Quality Division Miles



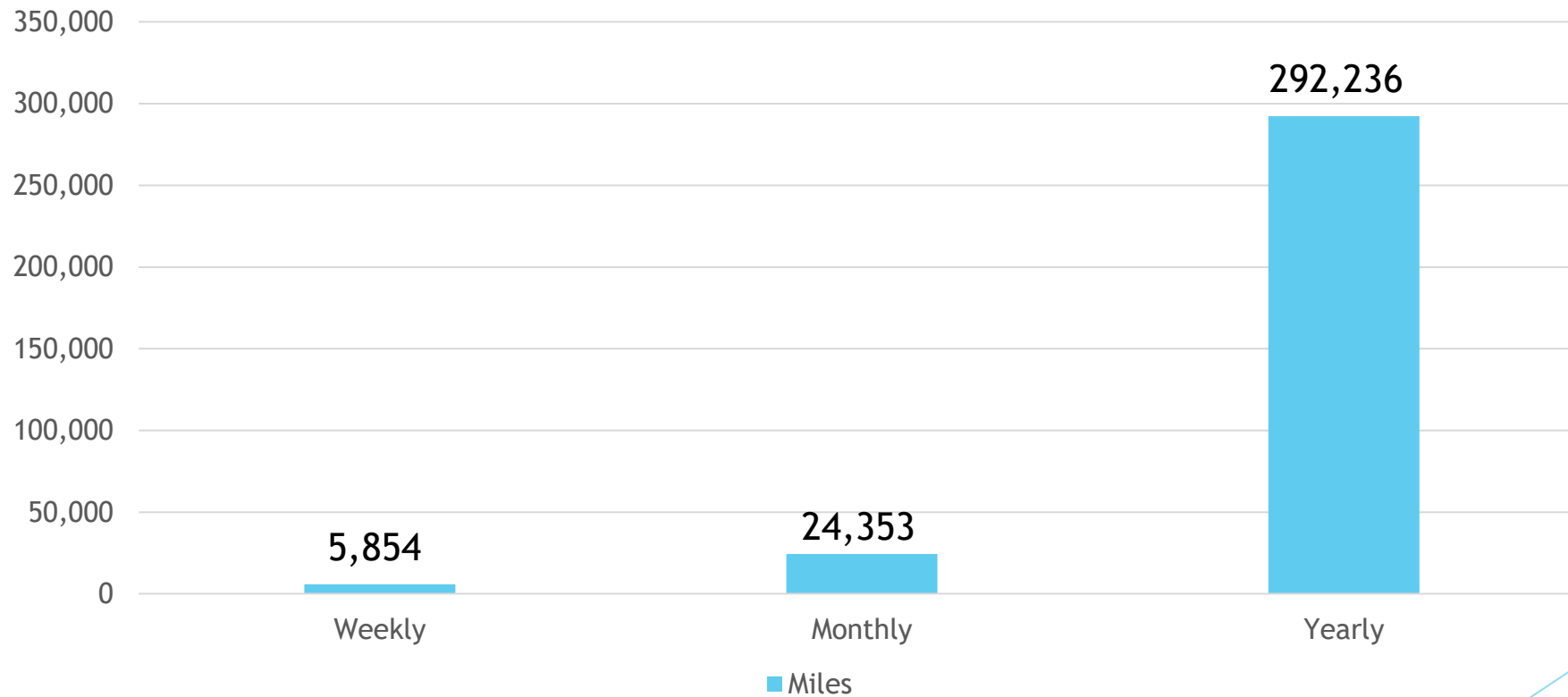
Communication and Education Miles



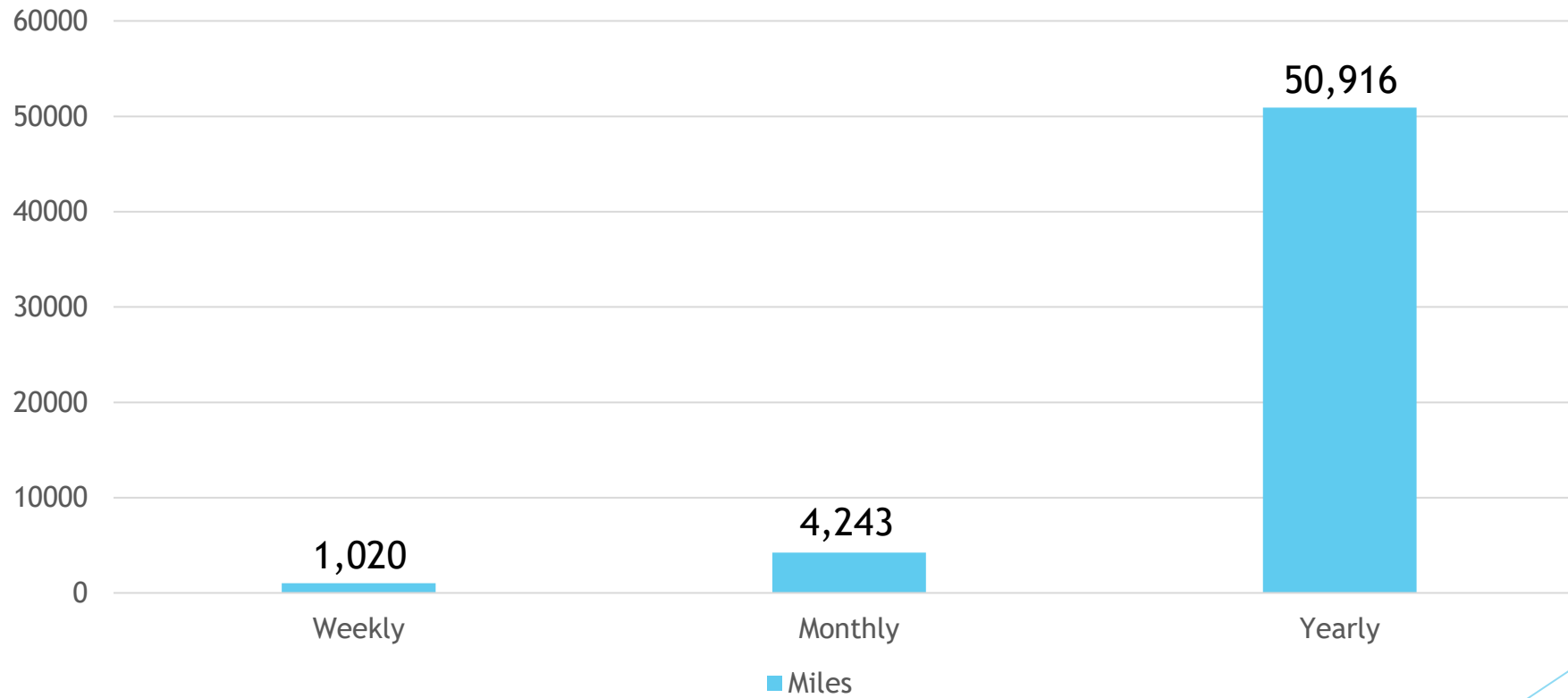
Environmental Complaints & Local Services Miles



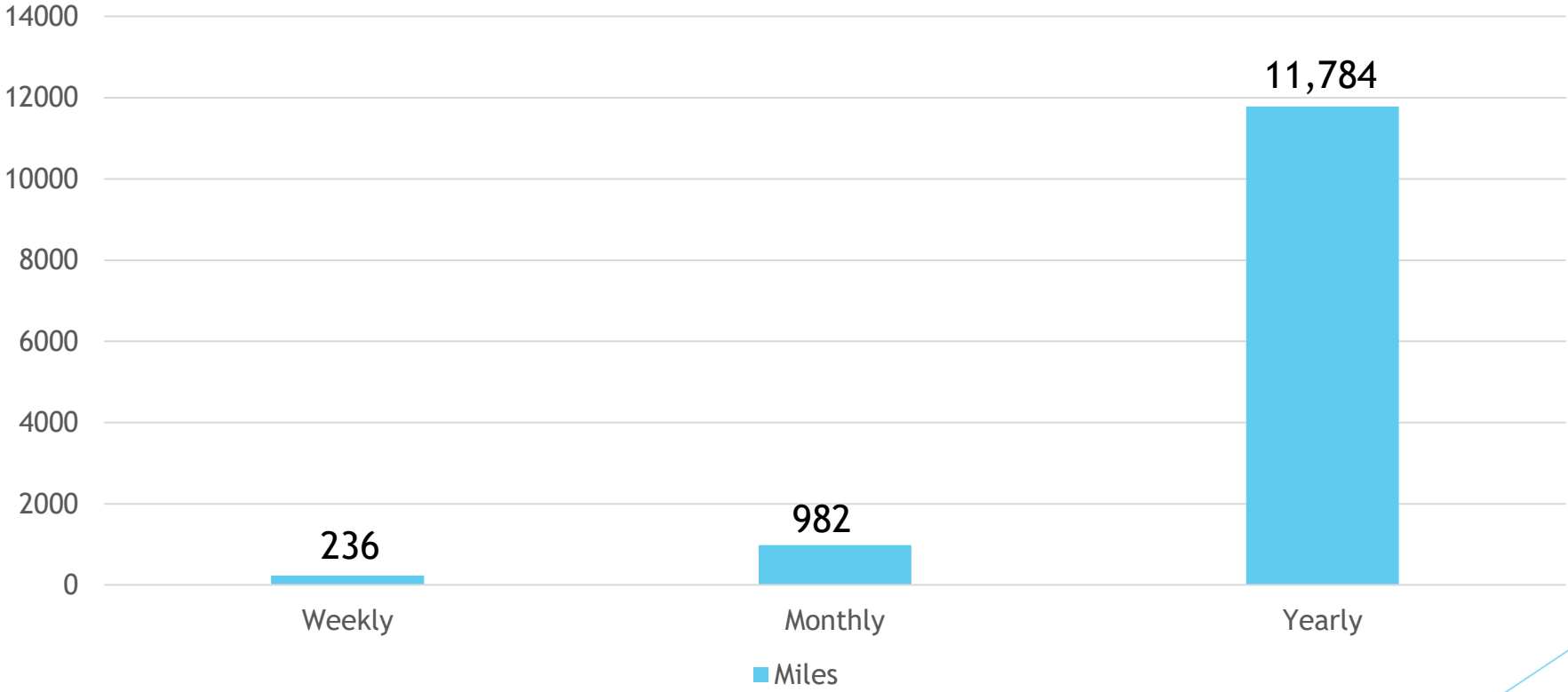
Land Protection Division Miles



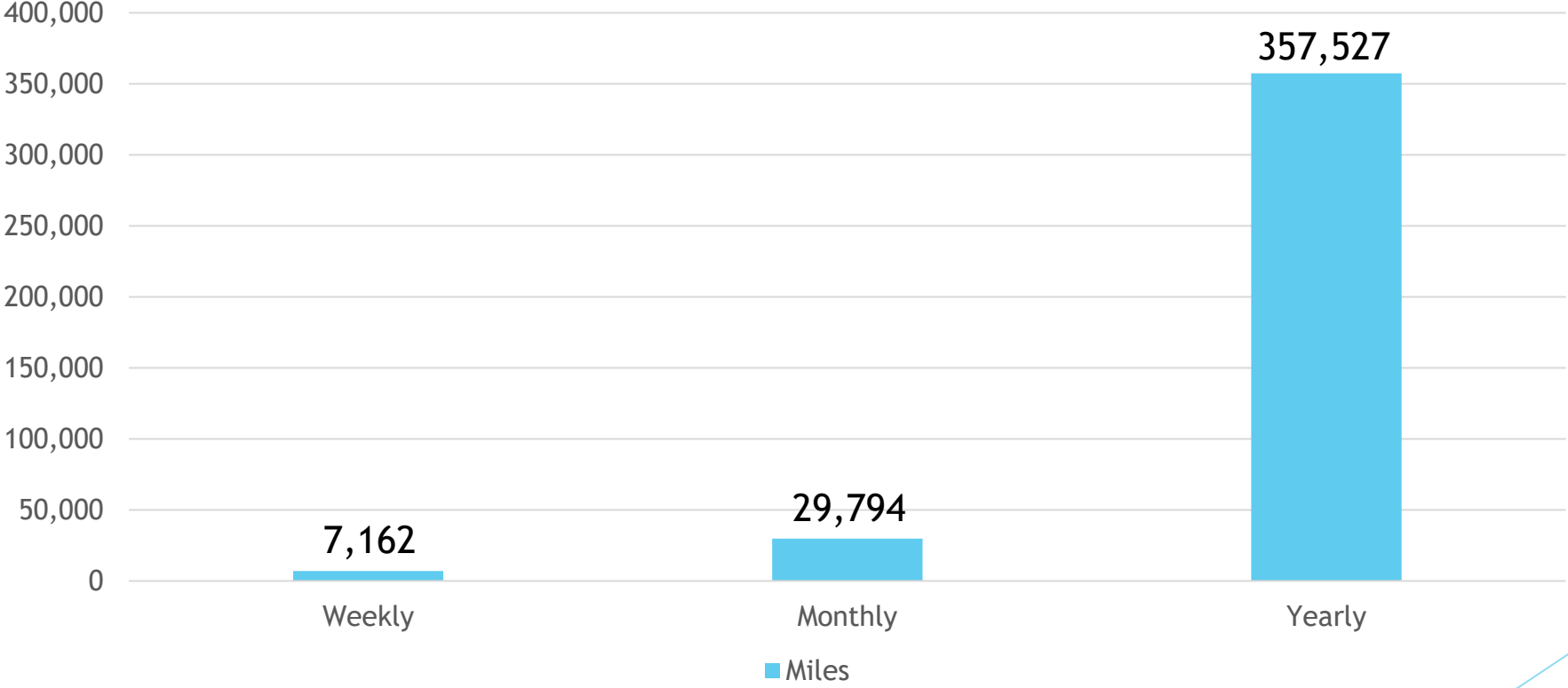
Legal Services Miles



State Environmental Lab Miles



Water Quality Division Miles



DEQ Total Miles Saved



Weekly
23,238

Monthly
96,671

Yearly
1,160,051

Yearly Amount Saved In Gas Money

Division	Yearly Amount
Air Quality	\$24,441
Administrative Services	\$7,434
Communication & Education	\$2,202
ECLS	\$18,657
Land Protection	\$35,208
Legal	\$6,135
State Environmental Lab	\$1,419
Water Quality	\$43,077
Total	\$138,573



*Average Miles per gallon is 24.9 provided by AAA

*Average price per gallon is \$3.00 provided by Business Insider

Emissions Summary



Vehicle Emission Types

(in grams per mile)

	CH ₄ *	N ₂ O*	HCs	CO	NOx	PM2.5	CO ₂
Light-duty automobiles (35%) [†]	0.00520	0.00160	0.280	4.152	0.192	0.008	N/A
Light-duty trucks (65%) [†]	0.00810	0.00150	0.339	5.422	0.376	0.011	N/A
Weighted Average	0.00709	0.00154	0.318	4.978	0.312	0.010	404

*Data for all pollutants are from 2020 except for CH₄ and N₂O, which are from 2018. This chart assumes gasoline-only personal vehicles are gasoline-only, though there may be a few exceptions.

[†]According to the US Federal Highway Administration, Oklahoma's total passenger vehicle count is comprised of 35% automobiles and 65% trucks. The weighted average above is based upon this calculation.

Administrative Services Emissions Saved Per Year

- ▶ 54,843 lbs. of CO₂
- ▶ 676 lbs. of CO
- ▶ 43.16 lbs. of Hydrocarbons
- ▶ 42.35 lbs. of NO_x
- ▶ 0.96 lbs. of CH₄
- ▶ 0.20 lbs. of N₂O
- ▶ 1.35 lbs. of PM_{2.5}

Air Quality Emissions Saved Per Year

- ▶ 178,542 lbs. of CO₂
- ▶ 2,200 lbs. of CO
- ▶ 140.53 lbs. of Hydrocarbons
- ▶ 137.88 lbs. of NO_x
- ▶ 3.13 lbs. CH₄
- ▶ 0.68 lbs. of N₂O
- ▶ 4.41 lbs. of PM_{2.5}

Communication & Education Emissions Saved Per Year

- ▶ 16,244 lbs. of CO₂
- ▶ 200 lbs. of CO
- ▶ 12.78 lbs. of Hydrocarbons
- ▶ 12.54 lbs. of NO_x
- ▶ 0.28 lbs. of CH₄
- ▶ 0.06 lbs. of N₂O
- ▶ 0.04 lbs. of PM_{2.5}

Environmental Complaints & Local Services Emissions Saved per Year

- ▶ 137,629 lbs. of CO₂
- ▶ 1,696 lbs. of CO
- ▶ 108.33 lbs. of Hydrocarbons
- ▶ 106.28 lbs. of NO_x
- ▶ 2.41 lbs. of CH₄
- ▶ 0.52 lbs. of N₂O
- ▶ 3.4 lbs. of PM_{2.5}

Land Protection Emissions Saved Yearly

- ▶ 259,739 lbs. of CO₂
- ▶ 3,200 lbs. of CO
- ▶ 204.44 lbs. of Hydrocarbons
- ▶ 200.59 lbs. of NO_x
- ▶ 4.55 lbs. of CH₄
- ▶ 0.99 lbs. of N₂O
- ▶ 6.42 lbs. of PM_{2.5}

Legal Emissions Saved Yearly

- ▶ 45,254 lbs. of CO₂
- ▶ 558 lbs. of CO
- ▶ 35.62 lbs. of Hydrocarbons
- ▶ 34.94 lbs. of NO_x
- ▶ 0.79 lbs. of CH₄
- ▶ 0.17 lbs. of N₂O
- ▶ 1.12 lbs. of PM_{2.5}

State Environmental Lab Emissions Saved Yearly

- ▶ 10,474 lbs. of CO₂
- ▶ 129 lbs. of CO
- ▶ 8.24 lbs. of Hydrocarbons
- ▶ 8.08 lbs. of NO_x
- ▶ 0.18 lbs. of CH₄
- ▶ 0.03 lbs. of N₂O
- ▶ 0.25 lbs. of PM_{2.5}

Water Quality Emissions Saved Yearly

- ▶ 317,770 lbs. of CO₂
- ▶ 3,915lbs. of CO
- ▶ 250.12lbs. of Hydrocarbons
- ▶ 245.4 lbs. of NO_x
- ▶ 5.57 lbs. of CH₄
- ▶ 1.99 lbs. of N₂O
- ▶ 7.86 lbs. of PM_{2.5}

DEQ Total Emissions Saved

CO₂
↓
1,020,495 lbs

CO
↓
12,574 lbs

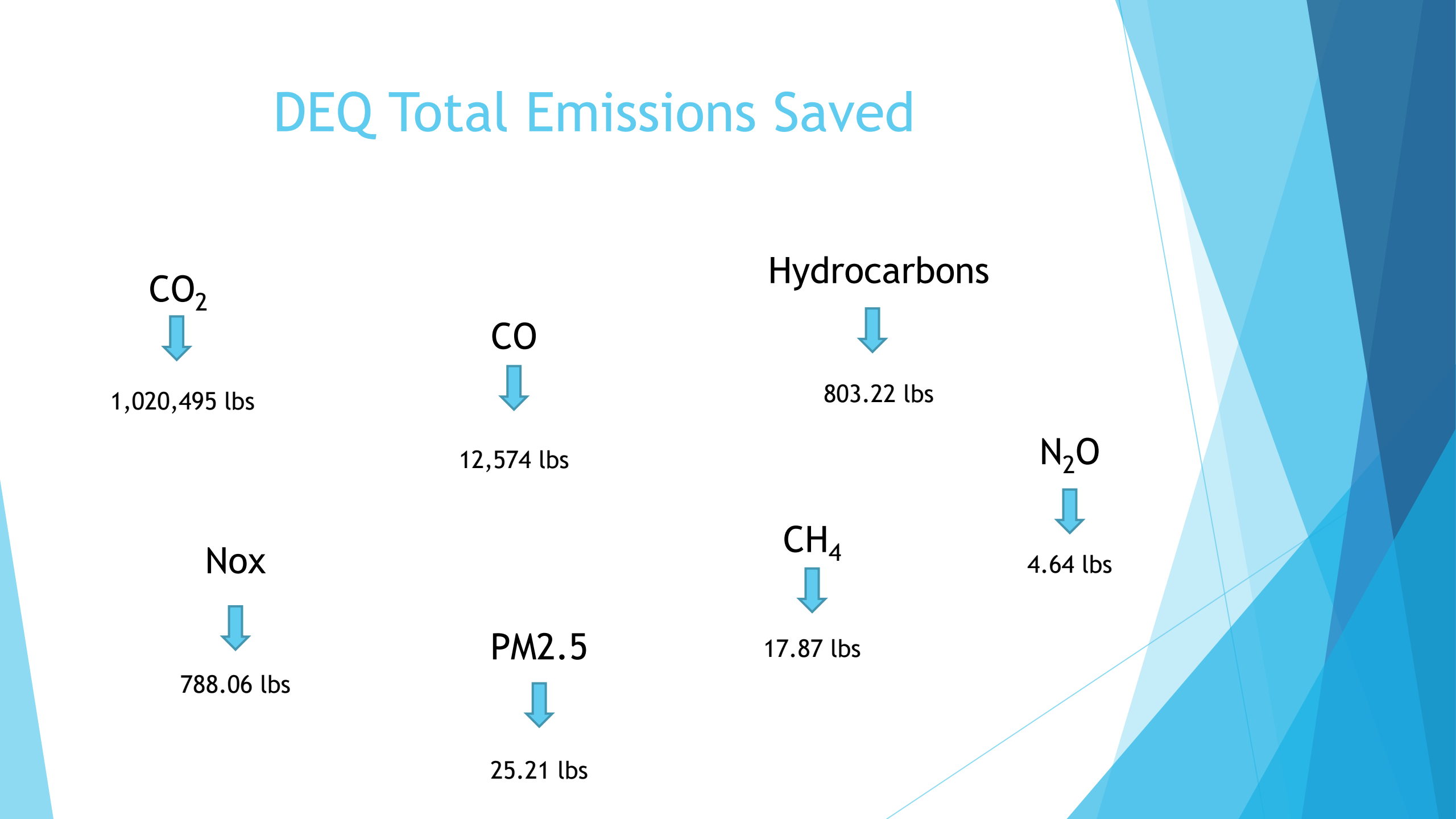
Hydrocarbons
↓
803.22 lbs

N₂O
↓
4.64 lbs

Nox
↓
788.06 lbs

PM_{2.5}
↓
25.21 lbs

CH₄
↓
17.87 lbs



Overall Benefits

- ▶ Credits in ozone advanced plan
- ▶ Employee Morale
- ▶ Reduced Emissions equals better health
- ▶ Less Paper usage

Sources

1) 2019 Highway Stats (Motor Vehicle Registration Numbers)

<https://www.fhwa.dot.gov/policyinformation/statistics/2019/mv1.cfm>

2) Greenhouse Gas Emissions for a Typical Passenger Vehicle

<https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>

3) Example of per mile calculations

<https://labs.ece.uw.edu/community/EnvironmentalImpacts/ElectricVehicleCalculations/>

4) Emission Factors for Greenhouse Gas Inventories (source for CH₄/N₂O factors)

https://www.epa.gov/sites/production/files/2021-04/documents/emission-factors_apr2021.pdf

5) Estimated US Average Vehicle Emissions Rates by Vehicle Type

<https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and>