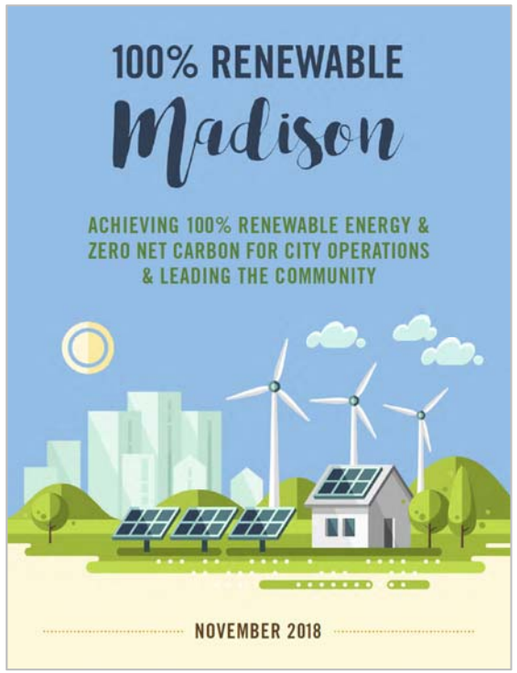
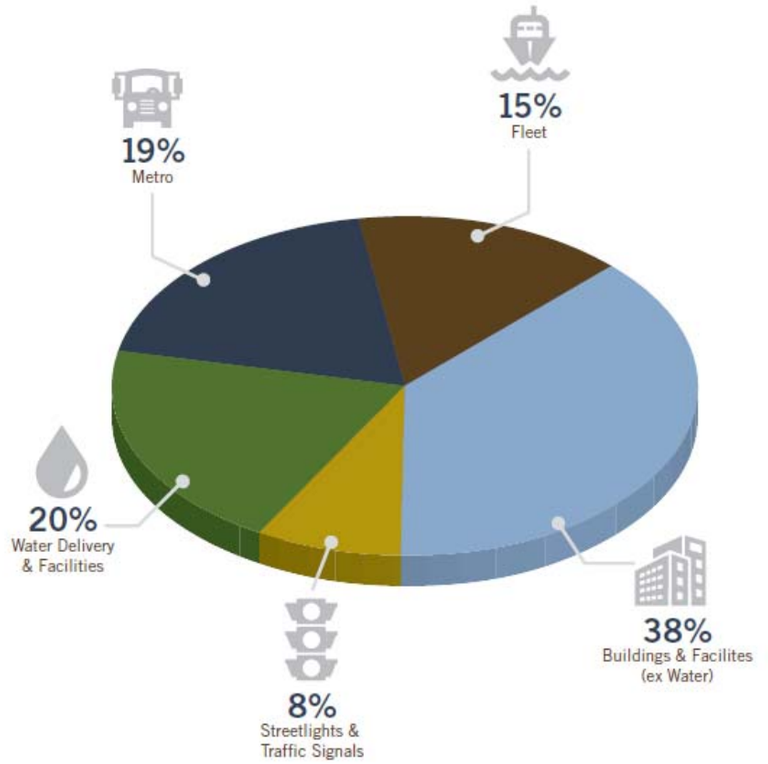



## FIGURE A-2. BASELINE CARBON EMISSIONS FOR CITY OPERATIONS BY CATEGORY*




***Excludes landfill, city employee commute, and City-owned housing emissions. Source: HGA based on ICLEI*

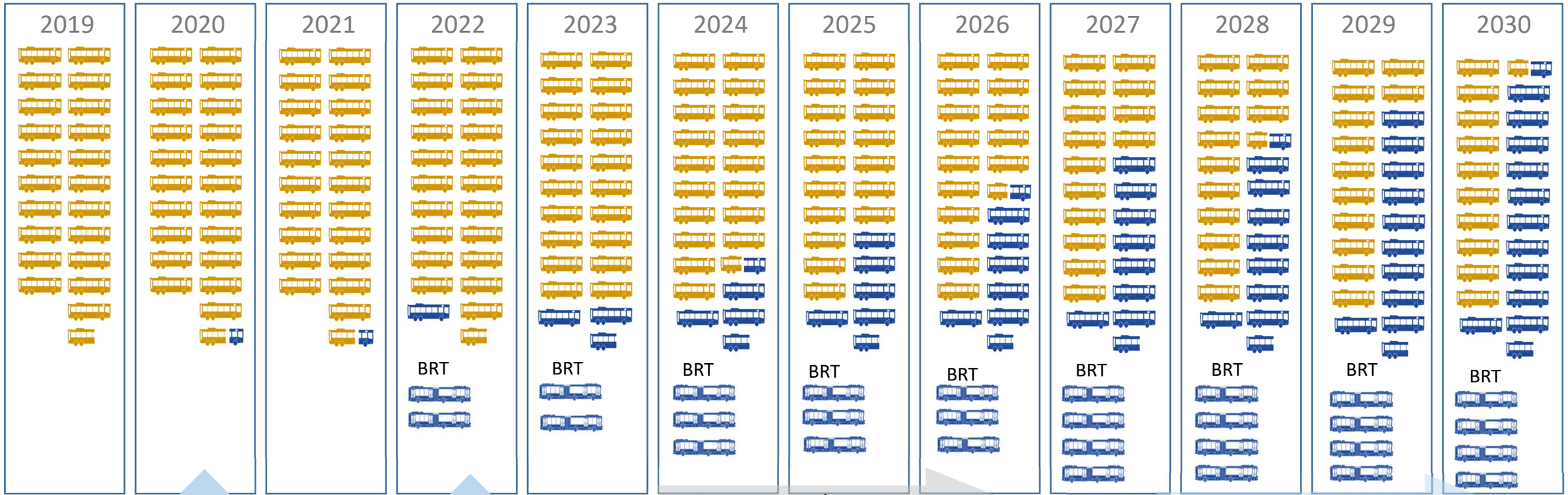
Figure A-3 illustrates baseline carbon emissions for municipal operations by fuel type in 2018, the baseline year for the report, including electricity (57%), diesel (29%), natural gas (9%) and gasoline (5%).

# FIGURE 2-14. FUEL MIX SCENARIO 3: 100% RENEWABLE ENERGY AND ZERO NET CARBON BY 2030

| | Unit | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $CO_2$ Emissions (Baseline) | ton | 81,141 | 81,699 | 82,261 | 82,829 | 83,402 | 83,981 | 84,565 | 85,155 | 85,750 | 86,351 | 86,957 | 87,570 | 88,188 |
| $CO_2$ Reduction (Demand) | ton | 1,416 | 5,640 | 9,796 | 13,882 | 17,900 | 21,849 | 22,644 | 23,531 | 24,508 | 25,577 | 26,736 | 27,986 | 29,328 |
| | % | 2% | 7% | 12% | 17% | 21% | 26% | 27% | 28% | 29% | 30% | 31% | 32% | 33% |
| $CO_2$ Reduction (Supply) | ton | 5,597 | 7,478 | 9,136 | 10,582 | 11,824 | 12,871 | 14,073 | 15,181 | 16,191 | 17,099 | 17,902 | 18,594 | 19,171 |
| | % | 7% | 9% | 11% | 13% | 14% | 15% | 17% | 18% | 19% | 20% | 21% | 21% | 22% |
| $CO_2$ Remaining | ton | 74,128 | 68,581 | 63,329 | 58,365 | 53,679 | 49,261 | 47,848 | 46,443 | 45,051 | 43,675 | 42,319 | 40,989 | 39,689 |
| | % | 91% | 84% | 77% | 70% | 64% | 59% | 57% | 55% | 53% | 51% | 49% | 47% | 45% |
| RECs Electricity | ton | 39,337 | 36,869 | 34,698 | 32,813 | 31,206 | 29,866 | 30,513 | 31,166 | 31,831 | 32,513 | 33,214 | 33,939 | 34,694 |
| | % | 48% | 45% | 42% | 40% | 37% | 36% | 36% | 37% | 37% | 38% | 38% | 39% | 39% |
| RECs Natural Gas | ton | 6,774 | 6,310 | 5,847 | 5,384 | 4,922 | 4,461 | 4,533 | 4,607 | 4,681 | 4,756 | 4,832 | 4,908 | 4,985 |
| | % | 8% | 8% | 7% | 7% | 6% | 5% | 5% | 5% | 5% | 6% | 6% | 6% | 6% |
| RECs Gasoline | ton | 5,145 | 4,675 | 4,204 | 3,734 | 3,263 | 2,792 | 2,395 | 1,997 | 1,600 | 1,202 | 804 | 407 | 0 |
| | % | 6% | 6% | 5% | 5% | 4% | 3% | 3% | 2% | 2% | 1% | 1% | 0% | 0% |
| RECs Diesel | ton | 22,872 | 20,726 | 18,580 | 16,434 | 14,288 | 12,142 | 10,407 | 8,673 | 6,939 | 5,204 | 3,470 | 1,735 | 0 |
| | % | 28% | 25% | 23% | 20% | 17% | 14% | 12% | 10% | 8% | 6% | 4% | 2% | 0% |

*Source: Navigant*

# Metro challenges and opportunities




EW retrofitted to allow electric buses in building, with capacity to charge 3 buses

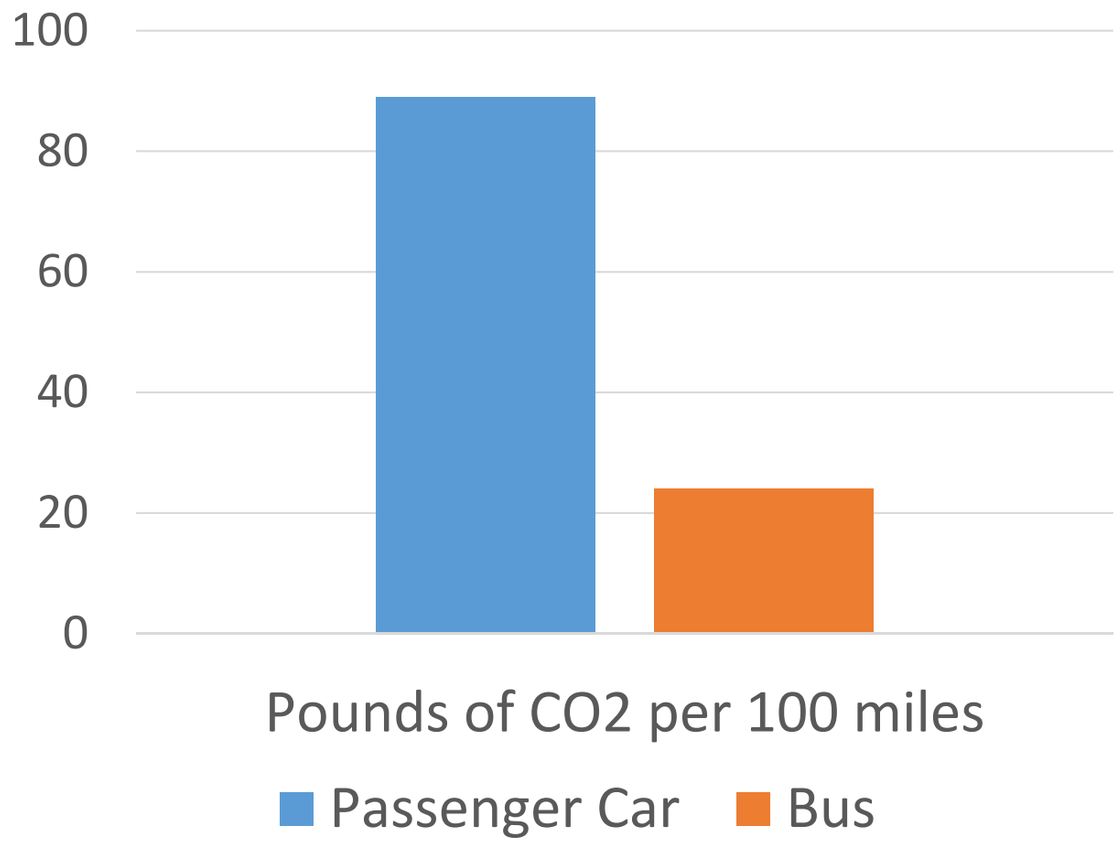
Capacity increased to charge 9 buses (maximum w/o MG&E supply changes)

= 10 electric buses ~$0.7M/ea

= 10 diesel buses ~$0.5M/ea

= 10 electric articulated buses ~$1.2M/ea

# Metro reducing emissions from the private sector




*Source*: CGGC, based on mpg figures from (Barnitt, 2008) and $CO_2$ per gallon of fuel from (EPA, 2009).

10,000 new riders per workday reduces CO2 emissions by 6,000 tons/year

40 pass/bus, 3 mile average trip, weekdays only

This reduction would represent 1/3 of Metro's emissions