

ELECTRIFIED MOBILITY

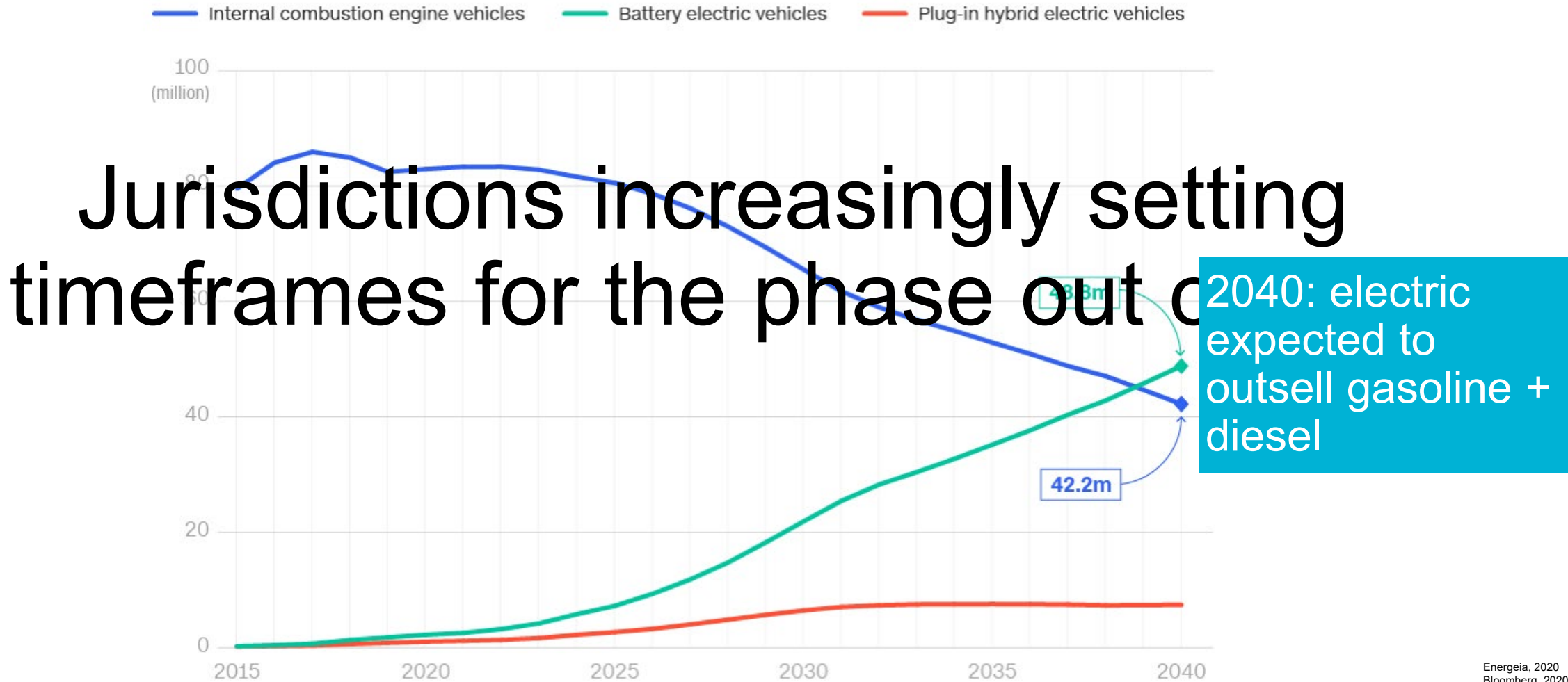
Moving Communities Forward

THE 2020

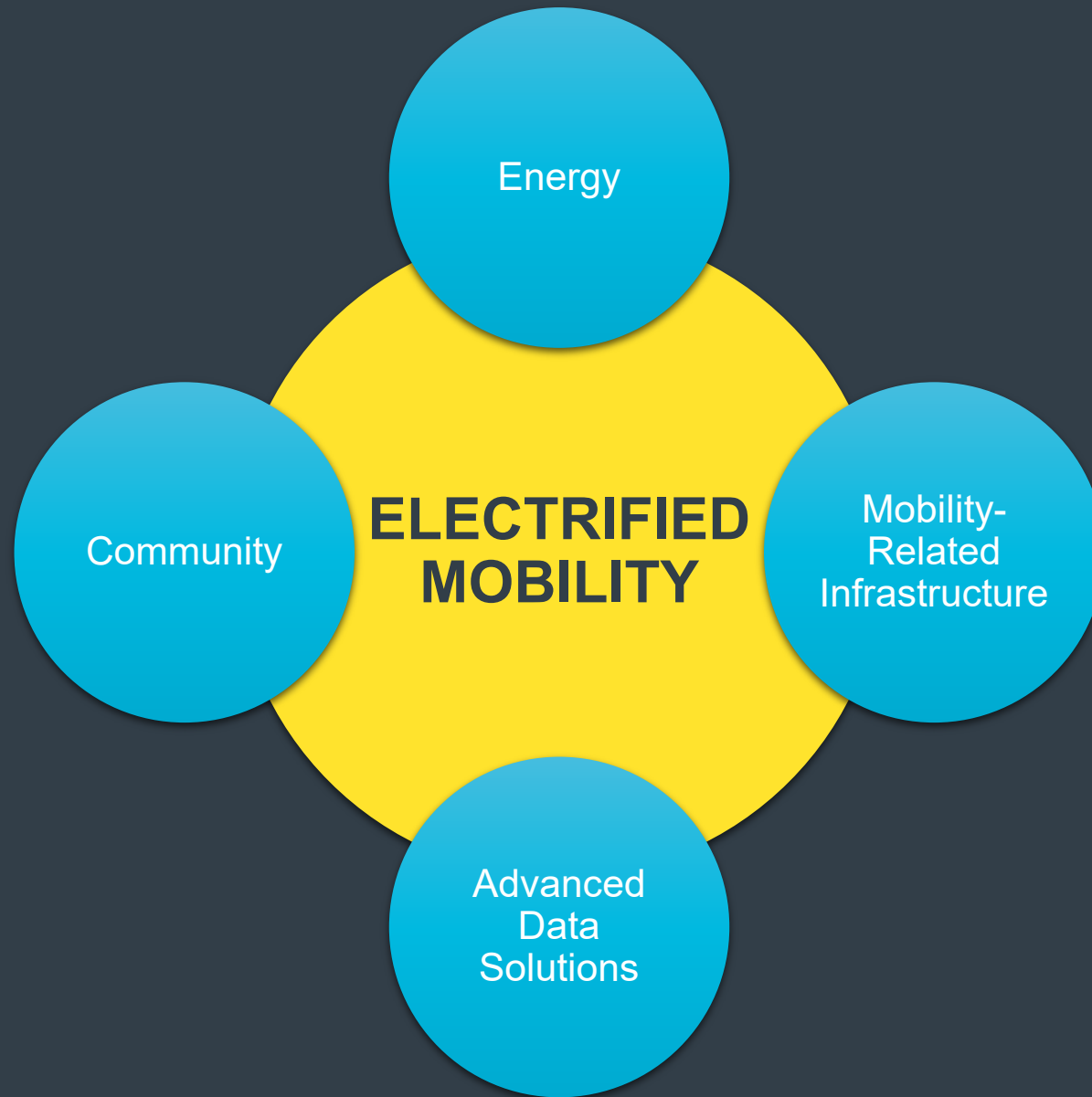
UIUC

Dana Al-Qadi

The future of mobility is electrified



Rapid convergence of many systems



ComEd has committed to advancing its electric grid through investments in **COMMUNITY OF THE FUTURE**

Bronzeville

- / Critical public infrastructure
- / Technical innovation
- / Engaged community members

A Smart Foundation

- / Smart meters installed
- / US DOE funded research on microgrid technology
- / Microgrid at IIT



ComEd BRONZEVILLE COMMUNITY OF THE FUTURE PROJECTS



Electric Vehicle Mobility Pilot

Phase I Senior Buildings Program Design



PROGRAM OVERVIEW



January **2018**



3 senior housing
facilities



1,029 rides
provided



2019 FINDINGS









132.78 lbs CO2 avoided

battery charging **patterns**
and **impact** to grid

\$26,980 economic impact

775 rides provided

Aligning Electrification Metrics with Community Priorities

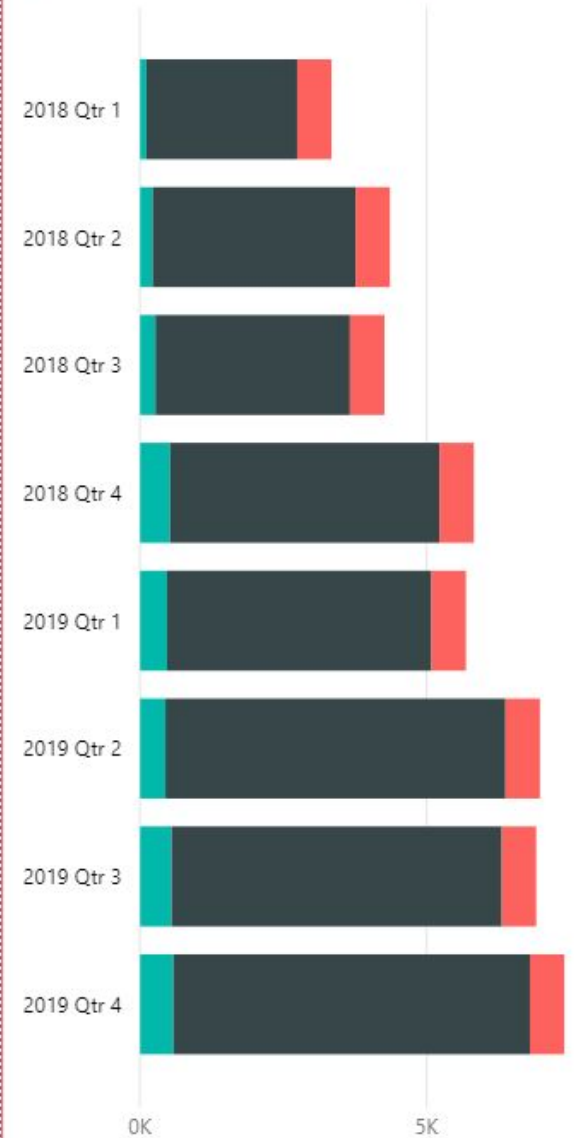
| COMMUNITY PRIORITIES |  Climate, Energy, Resilience |  Mobility |  Economic Development, Training & Jobs |  Public Safety & Health |  Culture & Education |
|----------------------|--|---|--|--|--|
| COMED OBJECTIVES |  Push the performance frontier of grid reliability, resiliency, and safety | |  Demonstrate leadership in social and education issues |  Advance community energy efficiency and decarbonization | |
| METRICS ALIGNMENT | No. of Smart City initiatives and pilots implemented that are enabled by ComEd Infrastructure | | FTE created through workforce development programs Number of STEM education program participants | No. of GHG (Co2) avoided Change in energy usage and energy demand | |

\$26.98K

Economic Impact

Cost Benefits to Community

● Cost Savings \$1.5 ● Employee Earnings ● Rent Payment



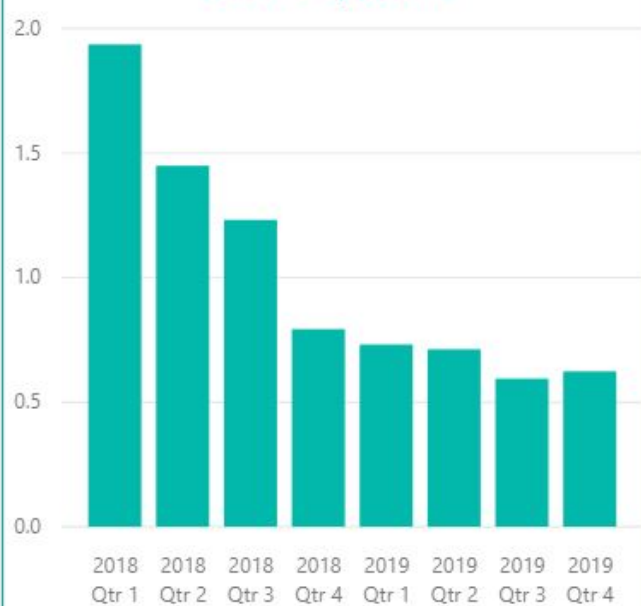
132.78

lbsCO2 Avoided

Emission Savings



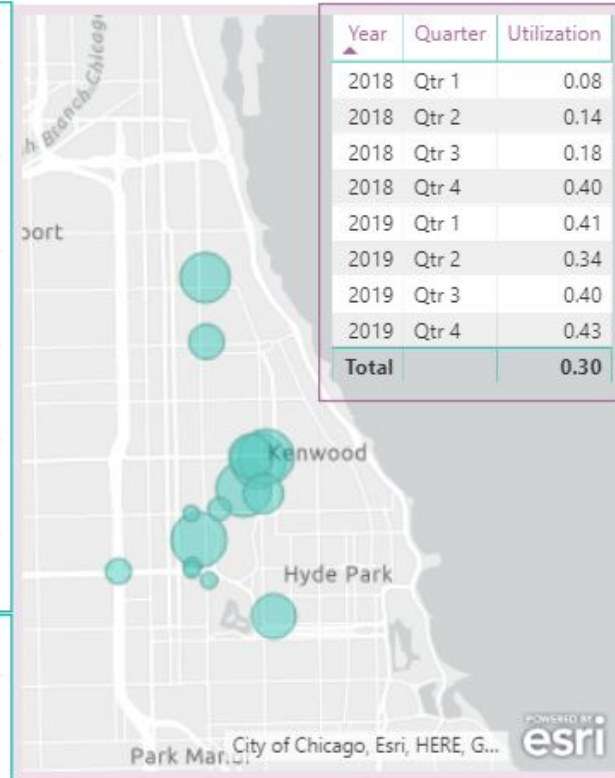
Fuel Economy (kWh/mi)



2019 Impact Dash Phase I

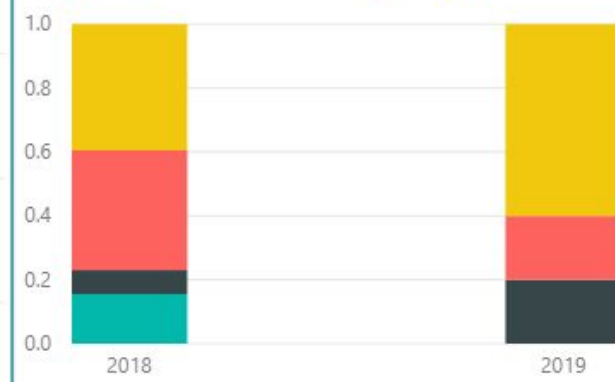
0.39

Utilization



Satisfaction

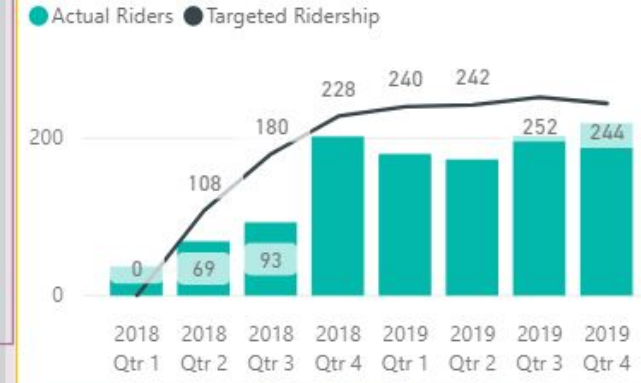
● Poor ● Needs Improvement ● Good ● Very Good



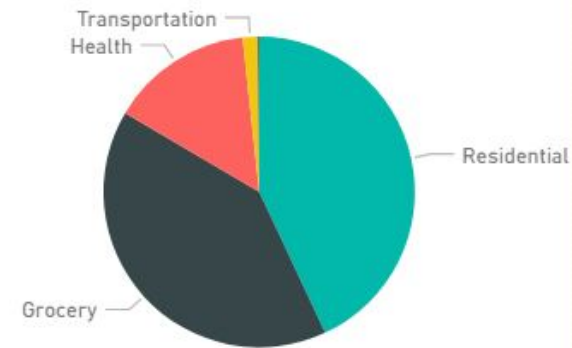
775

Rides Provided

Ridership Targets

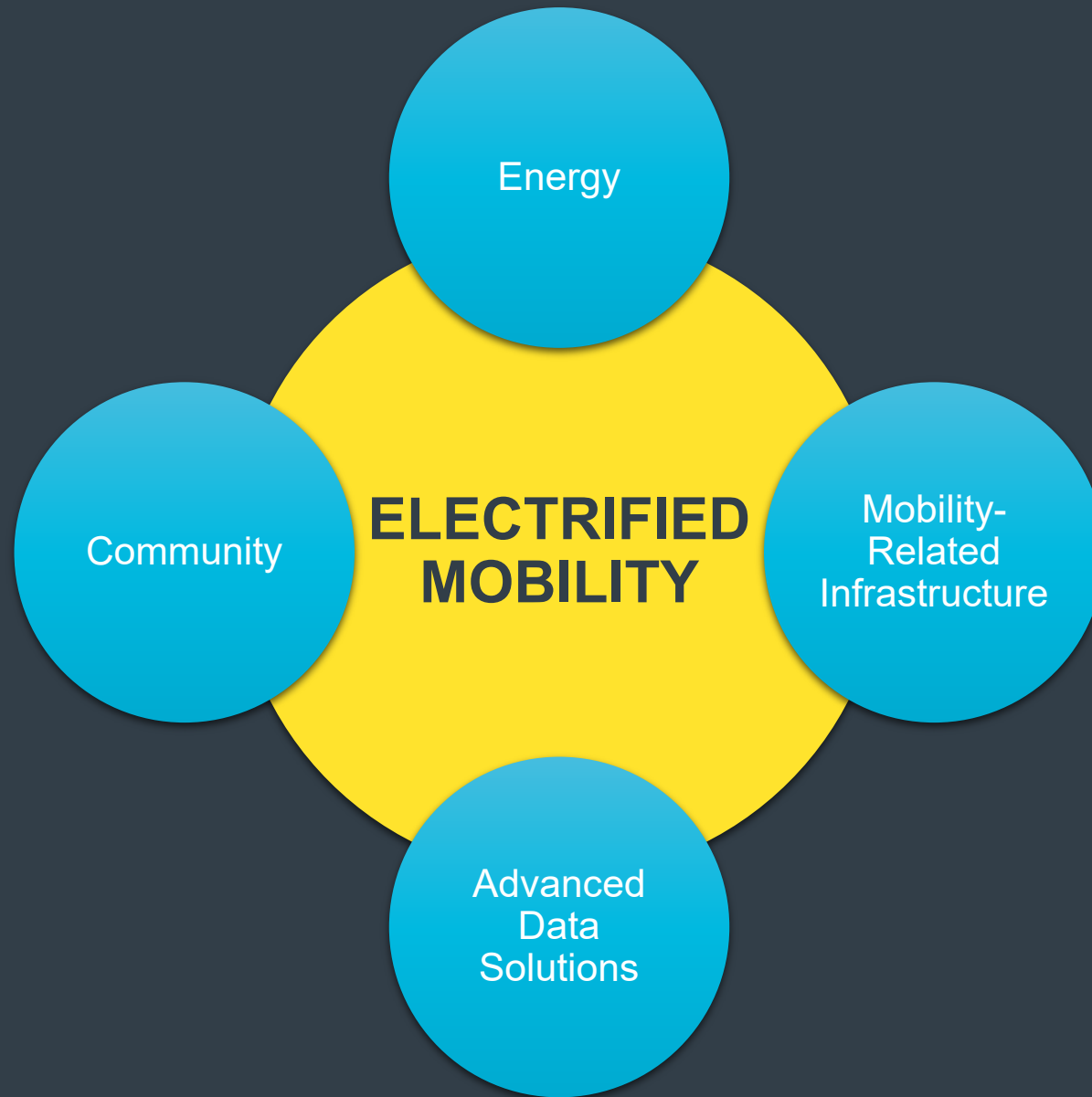


Drop Off by Building Type

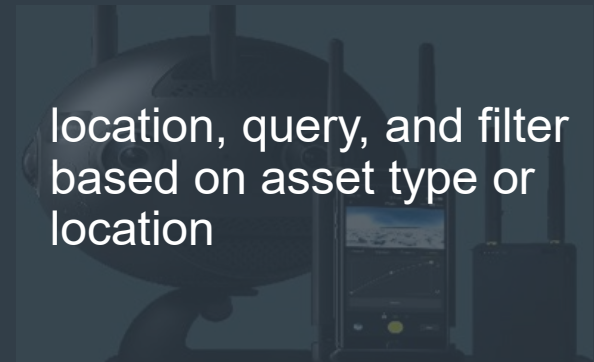
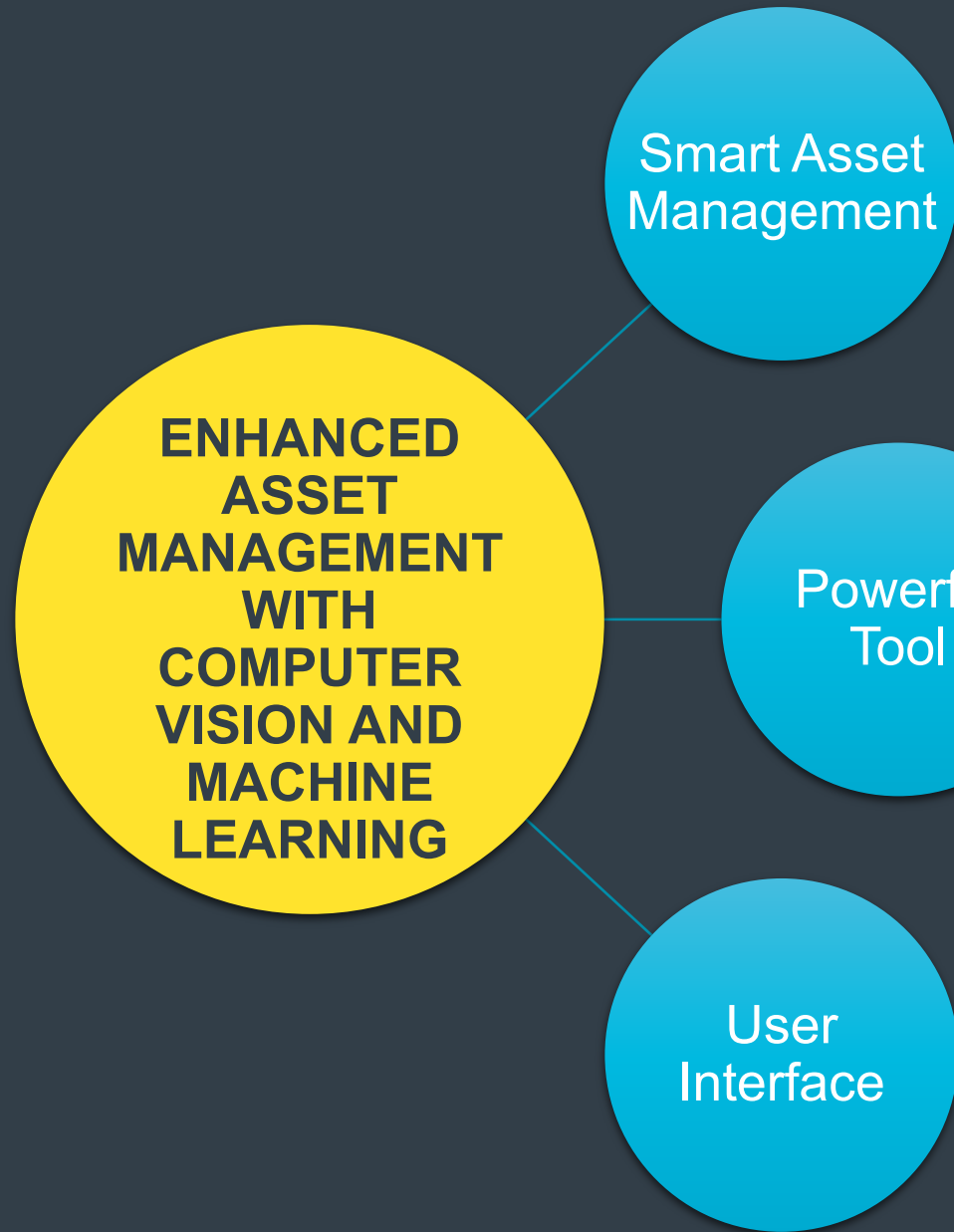


| Location | Dropped off |
|----------------------|-------------|
| Mary Jane Richardson | 200 |
| Walmart | 155 |
| Save-A-Lot | 104 |
| TRC | 100 |
| Walgreens | 59 |
| Marianos | 46 |
| Maudelle Brown | 43 |
| Total | 775 |

Rapid convergence of many systems



Revolutionizing how overhead electrical assets are recognized and inspected



**Existing or
collected video
imagery is input
into AECOM's
cloud pipeline**



Enables asset owners to locate, query, and filter based on asset type or location



Image of asset

| Asset ID | Lat | Long | Lamp Height | Road width | ... |
|----------|-----|------|-------------|------------|-----|
| | | | | | |

The diagram shows a street lamp with red arrows indicating various measurements: the height of the lamp post, the width of the road, and the distance from the lamp to the road edge. A dashed line indicates the lamp's reach over the road.

Capabilities

- Geolocation of individual fixtures
- Determination of street light type
- Measurement of lamp height
- Armature length
- Sidewalk and road width, and pole tilt
- Pole material type classification
- Presence of foliage obscuring

All determined from single-source imagery using machine learning and artificial intelligence

Technology to strengthen communities





Successful electrified mobility initiatives
GO BEYOND THE ROAD

Integrate electrification with other **INNOVATIVE
TECHNOLOGIES**

Require **PARTNERSHIPS**, and **INVESTMENT**
in the community

Low-income communities and non-urban areas can
BENEFIT FROM ELECTRIFICATION

THANK YOU



Ridership Targets



2019 Impact

\$26,979.5
Economic Impact

132.78
lbsCO2 Avoided

0.39
Utilization

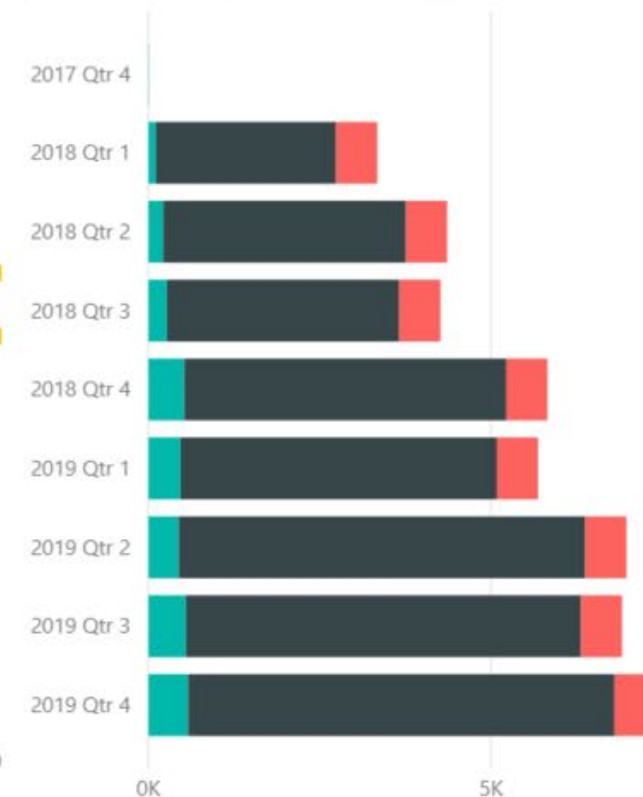
775
Rides

Satisfaction



Economic Development

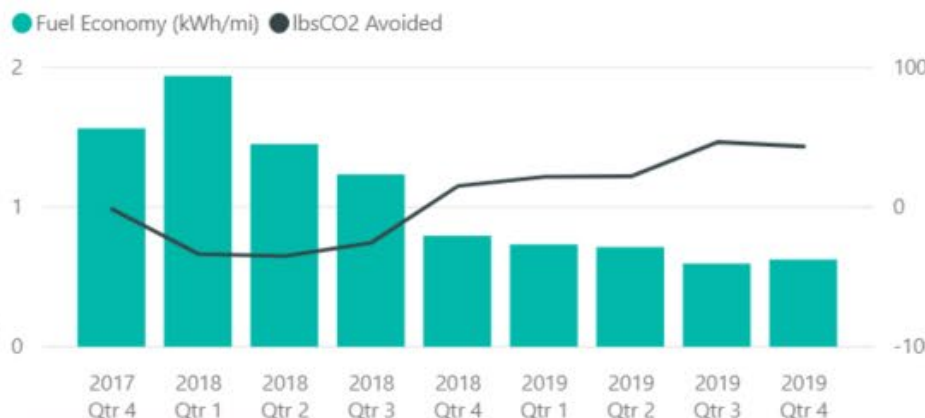
Cost Savings \$1.5 ● **Employee Earnings** ● **Rent Payment**



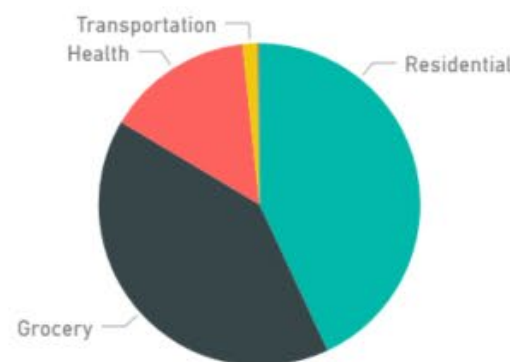
Energy Usage



Emission Savings



Drop Off By Building Type



| Year | Quarter | Ridership | Total Service Days | Utilization |
|--------------|---------|-------------|--------------------|-------------|
| 2017 | Qtr 4 | 2 | 2 | 0.13 |
| 2018 | Qtr 1 | 37 | 60 | 0.08 |
| 2018 | Qtr 2 | 69 | 63 | 0.14 |
| 2018 | Qtr 3 | 93 | 64 | 0.18 |
| 2018 | Qtr 4 | 202 | 63 | 0.40 |
| 2019 | Qtr 1 | 180 | 55 | 0.41 |
| 2019 | Qtr 2 | 173 | 64 | 0.34 |
| 2019 | Qtr 3 | 203 | 64 | 0.40 |
| 2019 | Qtr 4 | 219 | 63 | 0.43 |
| Total | | 1178 | 498 | 0.30 |

| Location | Dropped off |
|-----------------------|-------------|
| Mary Jane Richardson | 250 |
| Walmart | 205 |
| TRC | 199 |
| Save-A-Lot | 157 |
| Walgreens | 103 |
| Dollar Tree | 63 |
| University of Chicago | 62 |
| Maudelle Brown | 58 |
| Marianos | 52 |
| Garfield Red Line | 12 |
| Provident | 9 |
| Garfield Green Line | 3 |
| Total | 1178 |

