

Sustainability in Baltimore County

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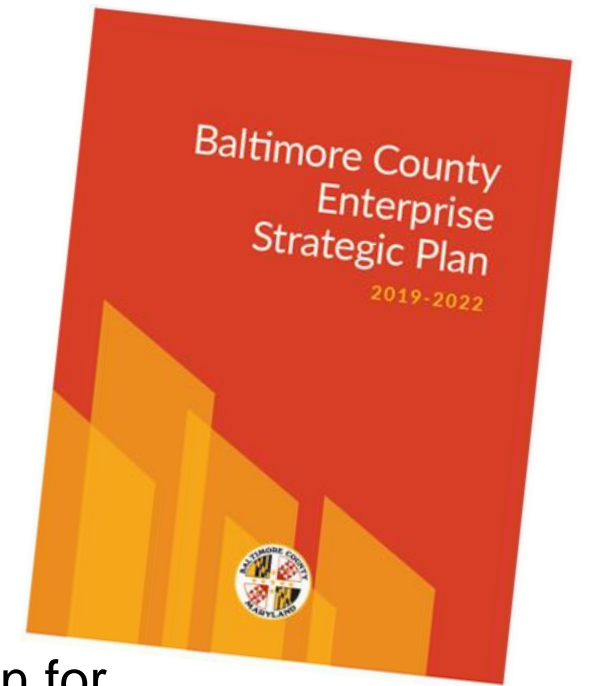


County Strategic Plan Goal #4 – Sustainability

“Ensure the long-term sustainability of the County’s public and internal government infrastructure and safeguard the County’s ecology and climate.”

Key Strategies include:

1. Prepare comprehensive master community facilities & infrastructure plan for CIP and sustainability against climate change
2. Develop enhanced land and use management process
3. Expand transportation infrastructure to promote connectivity, reduce gaps, & promote multi-modal options
4. Reduce county gov’t energy consumptions by 50% by 2030
5. Build & enhance resiliency amongst all county infrastructure development



Using a Sustainability Lens



Early Focus – Energy Efficiency & GHG Reduction

Executive Order: Complete renewable energy projects to generate equivalent of 100% County's baseline electricity demand by 2026

- ✓ Greenhouse Gas Emissions (GHG) Inventory & Climate Action Plan (CAP) to drive energy consumption reductions by 50%
- ✓ County Asset Vulnerability Assessment & Climate Action Plan to prioritize vulnerabilities to flooding, SLR, coastal surge
- ✓ Solid Waste, Procurement, and County Open Space work groups



Energy Efficiency & GHG Reduction Efforts



| Candidate Vehicle | TCO Outputs | | | Simple Payback - No Externalities | | | Simple Payback - With Externalities | | |
|--------------------------------|-----------------|-----------------------|----------------------|-----------------------------------|---------|-----------------------|-------------------------------------|---------|-----------------------|
| | Overall Utility | TCO w/o Externalities | TCO w/ Externalities | Low Fuel Sensitivity | Average | High Fuel Sensitivity | Low Fuel Sensitivity | Average | High Fuel Sensitivity |
| 2020 Ford Fusion S | 0.649 | \$231,981 | \$250,661 | - | - | - | - | - | - |
| 2020 Ford Fusion Hybrid SE | 0.723 | \$229,178 | \$240,481 | 9.3 | 7.7 | 6.5 | 6.7 | 5.8 | 5.1 |
| 2021 Honda Clarity PHEV (Base) | 0.796 | \$243,742 | \$251,890 | 15.6 | 12.2 | 10.0 | 10.7 | 9.0 | 7.8 |
| 2020 Hyundai Ioniq Electric SE | 0.744 | \$248,161 | \$251,747 | 18.4 | 13.3 | 10.4 | 11.1 | 9.0 | 7.6 |

| EV vs ICE - Only Vehicle Costs | |
|--------------------------------|-----------|
| ICE TCO | \$231,981 |
| EV TCO | \$228,355 |
| TCO Difference (ICE - EV) | \$3,626 |



| Estimated Lifetime GHG Emissions | |
|----------------------------------|----------------------|
| Vehicle | GHG Emissions (tons) |
| 2020 Ford Fusion S | 221 |
| 2020 Ford Fusion Hybr | 126 |
| 2021 Honda Clarity PH | 112 |
| 2020 Hyundai Ioniq El | 66 |

| Level 2 Charging Station Costs | |
|--------------------------------|----------|
| Number of Stations | 3 |
| Installation Cost | \$13,786 |
| Annual Operating Costs | \$2,100 |
| Charging Station TCO | \$19,807 |

| Marginal Costs compared to ICE | | |
|--------------------------------|---|---------------------------|
| Vehicle | Utility Gain per \$1000 TCO per vehicle | MC of 1-ton GHG reduction |
| 2020 Ford Fusion S | - | - |
| 2020 Ford Fusion Hybr | Vehicle has lower TCO | Vehicle has lower TCO |
| 2021 Honda Clarity PH | 0.0445 | \$108.11 |
| 2020 Hyundai Ioniq El | 0.0355 | \$104.93 |



Next Up – Solid Waste Solutions

  Northeast
Maryland
Waste
Disposal
Authority


March 2, 2021


Proposed Strategies
for Baltimore County's Recycling
& Solid Waste System

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Next Up – Climate Resilience



