Overview and Agenda

- Previous History
- Staff Buy-In
- Vehicle Fleet
- Community Engagement
- EV Charging on MI
- Lessons Learned
- What’s Next?

It's not easy being green.
Previous History

• Miles ZX40
  • 2008
  • Top speed 40mph
  • 2 vehicles at $20K each
  • 30-50 mile range
  • **Issues**: Underpowered; challenged by steep hills

• Electric Motion Systems E+
  • 2010-2014
  • Top speed 30+ mph (?)
  • 3 vehicles at $3K each
  • 20 mile range
  • **Issues**: Heavy; awkward handling; unusable without power
• Toyota Highlander Hybrid (not EV)
• Used 2010 onwards
• 2 vehicles at $36K each + mods
• **Issues**: Lack of space for police equipment; battery unable to power all accessories; levelling

• Good Earth Energy Firefly
• Explored 2013/4; not purchased
• Top speed 45mph
• 60 mile range
• **Issues**: Vendor supply problems; staff uncomfortable with handling at speed & steep/wet driveways
Rebuilding Staff Buy-In

- Employee demo: 20 staff for 1 week each
- Promotional programs

- 10 (of 180) staff commute in BEV or PHEV
- Rock star parking
- Custom communications
MI Vehicle Fleet

- 1 Bad Boy Buggy Prowler
- 1 John Deere Gator
- 1 Toro Workman

- 2 Kia Soul EV
- 1 Nissan Leaf EV
Community Engagement
Community Engagement

Mercer Island Goes Green

City Adds Its First Commercial Electric Vehicle to Fleet

The City’s new Kia Soul EV, click to calculate cost savings over a traditional gasoline vehicle.

After several years of research and test projects, the City recently added its first full-featured, commercial-grade electric vehicle (EV) to the fleet to replace a retired vehicle.

Primarily designated for City Building Inspectors, the new Kia Soul EV is perfectly suited to numerous short, stop-and-start trips, and its 90-mile range will be more than sufficient for daily needs. Favorable leasing fees make this vehicle cheaper to own than a standard gas vehicle, and it will also help lower vehicle-related emissions from City operations. Low electricity rates make EV fuel costs about three times cheaper than gasoline at today’s prices; learn more about calculations here.

The City installed its public EV charging stations about three and a half years ago at City Hall and the Community and Event Center. The School District also has units. As more EV car models come on the market, the chargers have become increasingly popular.
Community EV Adoption

Cumulative Number of Registered Electric Vehicles

- Mercer Island Battery Electric Vehicles
- Mercer Island Plug-in Hybrid Electric Vehicles

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<th>Year</th>
<th>2014</th>
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- Color codes: 2014 (red), 2015 (yellow), 2016 (green), 2017 (blue)
• Mar 2011 – Launch simple EVSE home install permit
• Jan 2012 – City opens 3 EVSE locations (funded by ARRA Block Grants & PS Clean Air Agency Grants)
• Oct 2013 – EV parking doubled at each existing charger & stalls painted green
• Mar 2014 – Added dual charger @City Hall; 4 @MISD
• July 2017 – ChargePoint Trade-in program: upgrade to another dual charger @City Hall and @Community Center
Phase 1: Three CT 2100 at 3 busy locations:

- City Hall, Community Center, Boys & Girls Club
- $18,000 EVSEs; $58,000 engineering & design work, elec work, trenching, transformer upgrades, legal; plus City overhead/salary

Phase 2: One CT 4021 dual sharing one 30Amp circuit ($6,500); $2500 conduit, installation, cxn

Phase 3: 50% off vendor upgrade: switch two old units for two more CT 4021 dual ($6,300) + $1000 installation

Ongoing service contracts approx $280/unit/year

Installation Costs
Usage & Fee Breakdown

• Electricity Costs = $75/month (@PSE rate: 8c/Kwh)
• Network Costs = $100/month
• Income = $200/month ($1/hr fee)
• Past 12mo: 10,500kWh delivered over 1284 sessions
• Since implementing user fee: session count halved, but avg duration doubled from 2.25 to 4.25 hours
• Highest use = approx 20 sessions/day; most units used every day, year round
Lessons Learned

- **EVSE:**
  - User fees
  - Signage
  - Illegal parking, etc
  - Planned expansions

- **Vehicles:**
  - Mods to OEM
  - Lease vs. Buy
  - Closeouts

- **Program:**
  - Support from City Mgr/Council
  - Staff & Head Mechanic
What’s Next?

• More stalls; ROW EVSE
• Partnerships w/local business
• Expansions to fleet (Police/Fire?)
• Heavy equipment
• EV shuttle van/bus to Park&Ride
Thank you!

www.mercergov.org/Sustainability

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