Best Practices for EVs

2.3 - Implement an energy rating/disclosure policy for residential and/or commercial buildings.

- Renewable Energy Ready Home (includes **EV-ready** elements) specifications were developed by the U.S. EPA to educate builders on how to assess and equip new homes with a set of features that make it easier and less expensive for homeowners to install solar energy systems after the home is constructed. Zero Energy Ready Home specifications produce a high performance home which is so energy efficient that a renewable energy system can offset all or most of its annual energy consumption.

- 3 Star Level Example: Require energy use disclosure for certain commercial buildings; require landlords to disclose the energy usage for residential rental properties; report both Energy Efficiency rating and Renewable Energy Ready Home (includes **EV-ready** elements) site assessment results or certification. Report city policies that incentivize acting on commercial building ratings - recommissioning and retrofitting - under action 2.6

2.7 - Customize a model sustainable building renovation policy that includes the SB 2030 energy standard and adopt the language to govern commercial renovation projects that:

a) **Receive city financial support, and/or**
b) **Require city regulatory approval (conditional use permits, rezonings, variances, PUD status).**

- The St. Paul sustainable building policy, adopted in 2009 and including the SB 2030 energy standard, was developed to serve as a model for other cities, which are allowed under state law to mandate building renovations that exceed the state energy code when a city is a financial or regulatory participant with a private development.
- 1 Star Level Example: Adopt policy beyond the state building code for residential, and/or commercial, industrial building renovations and require that buildings receiving city financial support meet the policy; note incentives/requirements for **EV chargers**.

3.3 - Adopt a sustainable building policy for private buildings; include the SB 2030 energy standard; adopt language governing new development projects that:

a) **Receive city financial support, and/or**
b) **Require city regulatory approval (planned unit development, conditional use permit, rezoning, variance)**

- The Green Garage Certification program, which assesses 50 elements of parking facility sustainability, including management practices; encouraging alternate modes of transportation and community engagement; and efficient and sustainable technology structure design and designed so they could be reused as warehouses, offices or other uses due to having flat floors and high ceilings.
- 1 Star Level Example: Adopted policy for projects receiving financial support; list negotiation points or required green building elements/framework (e.g., minimum energy efficiency performance above state energy code; **electric vehicle charging facilities**).

3.4 - Provide a financial or other incentive to private parties who build new buildings that utilize the SB 2030 energy standard and/or a green building framework.

- Going beyond incentives, cities may require all new residential homes and public parking facilities to accommodate **electric vehicles (EV).** A 2017 City of Atlanta, GA ordinance requires 20% of the spaces in all new commercial and multifamily parking structures be EV-ready. It also requires that all new development of residential homes be equipped with the infrastructure needed to install **EV charging stations**, infrastructure such as conduit, wiring and electrical capacity.
- 1 Star Level Example: Incentives include lower interest loans, lowered building or equipment permit fees; note what green building framework qualifies and if buildings have the capacity to charge **electric vehicles**.
- 3 Star Level Example: Incentives require meeting the SB 2030 energy standard, or require buildings to be rated/certified under a green building framework. Features might include conduit for **EV chargers** in new home garages (making them **EV-ready**); incentives might include a density bonus.

6.5 - Adopt climate mitigation and/or energy independence goals and objectives in the comprehensive plan or in a separate policy document, and include direct implementation recommendations such as becoming an EV-ready city.

- Cities have tremendous influence over how and where infrastructure is built and serve as a critical and necessary partner in the market transformation effort to make electric vehicles a significant part of Minnesota's passenger car fleet. In its

comp plan, cities can adopt EV language in the areas of policy, regulation, capital improvements, administration, programs and leadership that put the city on a path to become a EV-ready city.

- 2 Star Level Example: Become an **EV-ready city**, address climate protection in the private sector by, for example, establishing policies with numerical targets to reduce vehicle miles traveled, or setting a percentage renewable energy generation target for the entire city, such as a "25 by 25" goal (generating 25% of a city's electricity, heating and/or transportation fuels from renewable resources by 2025).

8.3 - Modify a planned unit development ordinance to emphasize mixed use development or to limit residential PUDs to areas adjacent to commercial development.

- The Planned Unit Development Ordinance from the 2009 Minnesota Model Ordinances for Sustainable Development provides guidance for emphasizing mixed use and residential-commercial adjacency. Some cities also incorporate a menu of community benefit requirements (via "amenity points"): a list of development flexibility options from which a PUD applicant can select. Each community benefit is assigned points, and the applicant must achieve a sufficient number of points in order to be considered for flexibility on zoning conditions. The menu of benefits includes a variety of sustainability options such as electric vehicle charging station requirements in large commercial or mixed-use developments (Golden Valley: 2017), green building certification, on-site renewable energy, geothermal-based HVAC systems, energy efficiency higher than the state building code, bicycle and transit amenities, use of car sharing programs for residents/businesses.
- 2 Star Level Example: Ordinance: requires residential-only PUDs to be adjacent to commercial development or to be served by frequent transit; encourages **EV charging stations**.
- 3 Star Level Example: Ordinance: requires a mix of uses; requires installation of **EV charging stations**.

9.1 - Establish design goals for at least one highway/auto-oriented corridor/cluster.

- 1 Star Level Example: Work with community members in establishing design goals or designs standards, publish the standards, and ensure that the standards are provided to everyone proposing development in the corridor/cluster; plan for at least **1 EV charging station**.

9.5 - Adopt development policies for large format developments, such as a scorecard approval process, tax productivity thresholds, size caps, bans, required decommissioning of vacant property.

- During 2016 the Minnesota-based organization Strong Towns is crowd-sourcing a database on tax productivity of big box stores and posting articles on how to rethink big box stores as, for example, points of social leverage and locations for recharging **electric vehicles**.
- 1 Star Level Example: Adopt a size cap; require decommissioning in the zoning district or with the development agreement for chain-specific big box developments, if store goes vacant for more than 6 months (and no permit for redevelopment has been filed); plan for at least **1 EV charging station**.

11.1 - Adopt a complete streets policy that also addresses street trees and stormwater.

- 1 Star Level Example: A city council resolution to develop standards; a policy governing city-owned streets; routine consideration of complete streets elements in all streets projects; explicit complete streets comp/strategic plan direction, that expresses the city's intent to facilitate multi-modal transportation (at least one route for each mode); include consideration of **EV charging stations**.

11.3 - Modify a street in compliance with the city's complete streets policy.

- 1 Star Level Example: Summarize the complete streets elements - grey infrastructure such as adding sidewalks, bumpouts, bike lanes, truck routes, broad band, **EV charging station**, smart grid.

13.2 - Right-size/down-size the city fleet with the most fuel-efficient vehicles that are of an optimal size and capacity for their intended functions.

- See, for example, the City of Minneapolis green fleet policy.
- Right-sizing might, for example, include purchase through Minnesota's Cooperative Purchasing Venture of neighborhood electric utility vehicles (NEVs) built by E-Ride in Princeton, MN. NEVs are battery **electric vehicles** with a top speed of 25 MPH and which can be driven on public roads.
- The U.S. Dept. of Energy's Alternative Fuels and Advanced Vehicles Data Center has cost calculators and other tools. Note however that lithium-ion batteries represent a huge environmental footprint in their manufacture and reuse/recycling them isn't addressed in the Extension tool. See also best management practice resources for fuel economy, alternative fuels and vehicles.

- 1 Star Level Example: Survey each fleet vehicle by type, MPG and use; implement at least one right-size or down-size improvement (for example, use of a sedan instead of a pick-up truck for inspection work, use of a full **electric utility vehicle** in parks/public works, or one multi-purpose vehicle instead of two vehicles).

13.3 - Phase-in no-idling practices, operational and fuel changes, and equipment changes including electric vehicles, for city or local transit fleets.

- The City of Elk River's Green City Fleet Guide (2016) focuses on **electric vehicles**, covering financial and other benefits, a list of **EVs** on the market, global fleet trends, and a short fleet survey done in about two dozen Minnesota cities.
- Resources from Drive Electric Minnesota include information for fleet managers on maintenance, safety, emissions, charging equipment (see details for buying off the state contract), technology basics, benefits, purchasing considerations and more.
- Policies and strategies to promote and integrate electric vehicles into Portland, Oregon's transportation system, from a 2010 city council resolution and report.
- 1 Star Level Example: Monitor fuel usage and costs on a regular basis; report data to fleet managers and users; implement maintenance schedules that optimize vehicle life and fuel efficiency; replace solvent-based vehicle parts washing with aqueous-based; adopt a no-idling policy/practice or conduct training for more efficient driving.
- 2 Star Level Example: Achieve a 1-Star rating and complete one or more of: (a) purchase or lease at least one **hybrid-electric vehicle** (EV); (b) add vehicles (and fueling stations as needed) using lower-carbon fuels (ethanol flexfuel, compressed natural gas, straight vegetable oil, biodiesel above the State-mandated 5%, other advanced biofuels); (c) add other alternative fuel vehicles.
- 3 Star Level Example: Achieve a 1-Star rating and add a **highway-capable full-electric vehicle**, and/or install a **solar-charging EV station** (or purchase renewable electricity for **EV charging**). Report **EV charging stations** that the public can use under best practice action 23.5

14.1 - Reduce or eliminate parking minimums: add parking maximums; develop district parking.

- 1 Star Level Example: Include parking maximums in development standards for at least pedestrian-friendly or transit-served areas; waive minimums for new or renovated developments; facilitate/allow/report parking lots sized below zoning minimums (used by multiple properties; shared lot use agreements among private parties); provide

free/discounted parking for **EVs**. Report PV parking lot canopies under BP 26.

18.7 - Document that the operation and maintenance, or construction / remodeling, of at least one park building used an asset management tool, the SB 2030 energy standard, or a green building framework.

- 1 Star Level Example: Include green features in at least one park building, such as renewable energy generation capacity, **EV charging station**, native landscaping, rain gardens, green roofs, composting toilets, and greywater systems.

23.5 - Install, assist with and promote one or more public fueling stations for plug-in hybrid and full electric vehicles, flex-fuel ethanol vehicles, CNG vehicles.

- See Drive Electric Minnesota for resources on **EVs and public EV charging stations**, and for **EVs** and all fuels/vehicles contact the advisor for BP #13.See also elements of making your city an EV-ready city.
- Refueling infrastructure financial assistance for retailers of E85 and other ethanol blends in your city is available through the American Lung Association and is matched with contributions from the MN Corn Growers Association.
- 1 Star Level Example: Work with others to place 1 station at a high use area; promote the existence of all fueling options such as compressed natural gas in/around the city.
- 2 Star Level Example: 2 or more geographically separated **EV charging stations**, or a **Level 3 DC Quick Charge station**, or **1+ EV station** powered by non-grid generated renewable electricity.
- 3 Star Level Example: Report the installation of 4+ stations; connect at least 1 station to on-site renewable generation such as PV panels.

25.6 - Promote green businesses that are recognized under a local, regional or national program.

- 1 Star Level Example: Recognize and promote (for example, on your city web site) businesses whose environmental actions are recognized by a local, regional or statewide program, such actions as recycling, reducing materials use, lowered toxicity in products, selling locally created compost, energy efficiency, **EV charging station** for employees/patrons, etc.