



# EV and Solar-Ready Building Code

# Background

- On November 19, 2024, Council Member McGee requested a two-minute pitch to update the building codes for new single-family homes to be built EV-ready and Solar-ready.
- The ISR was published in the Friday Report on February 7, 2025.

# Summary

## EV Ready:

- All new construction in the City is currently Type 1 EV ready as the codes require a 120v receptacle at each vehicle bay of attached and detached garages.
  - To prepare a home for Type 2 EV chargers (or an EV-ready system) in accordance with the appendices, the new construction to install EV ready would have an approximate cost impact of about \$1500, initially paid for by the builder and passed along to the homeowner in the cost of the home.
  - If adopted, the EV-ready homes would be required to be fitted with enough space in the electric panel to accommodate the extra voltage needed for Type 2 EV charger (240v).
- The average cost for an installed Type 2 EV charger is \$1836 according to a publication on Sciencedirect.com.
  - In the last 6 years, the city has issued 49 residential EV charger (Type 2) permits, the City has issued 6,425 permits for single-family detached homes. This means less than 1% of the permitted SFRs (0.76%) have a type 2 charger.
  - In October 2022, there were 600 registered electric cars in the City of Denton. As of December 3, 2024 the North Central Texas Council of Governments reported 1,195 registered EVs in the City of Denton out of 108,219 total registered vehicles (1.1% EV adoption rate).

# Summary Cont'd

## Solar Ready:

- Currently we see minimal alterations for solar array installations, typically only involving upgrades to the electrical system.
  - To prepare a home for solar-ready in accordance with the code appendices, the new construction to install solar ready would have an approximate cost impact of about \$3,000, initially paid for by the builder and passed along to the homeowner in the cost of the home.
  - If adopted the plans submitted for permit must show the solar-ready zone, indicate the roof loads and calculations, the roof shall be oriented between 110 degrees and 270 degrees of true north or have low sloped roofs, shall reserve space in the electrical panel, and provide a permanent certificate indicating the solar-ready zone.
- The average cost for an installed solar system is around \$18,000 according to the National Renewable Energy Laboratory (NREL).
  - In 2024 the city issued 93 permits for new residential solar panels, year to date the city has issued 27 permits. Past years show that the city has issued between 80 and 250 permits per year since 2017.
  - Solar panel installations currently account for less than 1% of the number of existing homes per year.

# Considerations

- Keep housing affordable for our citizens by not requiring mandates as current construction already provides conditions for Type 1 EV charging and requires minimal updates for solar installations.
  - Vehicle bays in attached and detached garages of new residential and multi-family construction are required to install 120v receptacles under the current code, these receptacle are sufficient to serve Type 1 EV chargers.
  - The City of Denton does not have an active incentive program for EV Charging or Solar installation currently. The City does offer an incentive for the purchase/lease of an electric vehicle.
    - There are IRS tax credits, and State level incentives for both. ([energy.gov](https://energy.gov); [comptroller.texas.gov/programs/seco/funding/](https://comptroller.texas.gov/programs/seco/funding/))
- Current conditions:
  - EV registration rate is 1.1% (December 2024)
  - Less than 1% of homes have solar panel installations

# Conclusion

- EV-Ready: Based on the low number of registered EV vehicles and even lower number of Type 2 EV charging permits requested, it appears that the need for EV-ready (Type 2) installed in every new home is not substantiated at this time.
  - The code already requires receptacles for Type 1 EV charging abilities.
- Solar-Ready: Based on the number of currently installed solar systems and that there have been no permit requests for solar systems installed at the time of new construction, it appears that the need for solar-ready for every new home is not substantiated at this time. Additionally, it is important to note that not all homes are ideally oriented or ideally designed to install solar. Many lots will not accommodate the requirements.
  - There could be more costs incurred to the developer or builders that are unknown by staff such as replating, increase in lot size and more.

# Next Steps

- Direction request:
  - Staff recommends Health and Building Standards Commission to provide direction before Council consideration.
    - Amend or update the codes OR
    - Continue with straight code which already provides conditions for Type 1 charging and minimal updates for solar installation?
- Next Steps:
  - Send the pitch through the City's annual budget process.
  - Schedule the pitch for a Council Work Session.