

# Analysis of Electric Vehicle Charging Infrastructure in the City of Denton

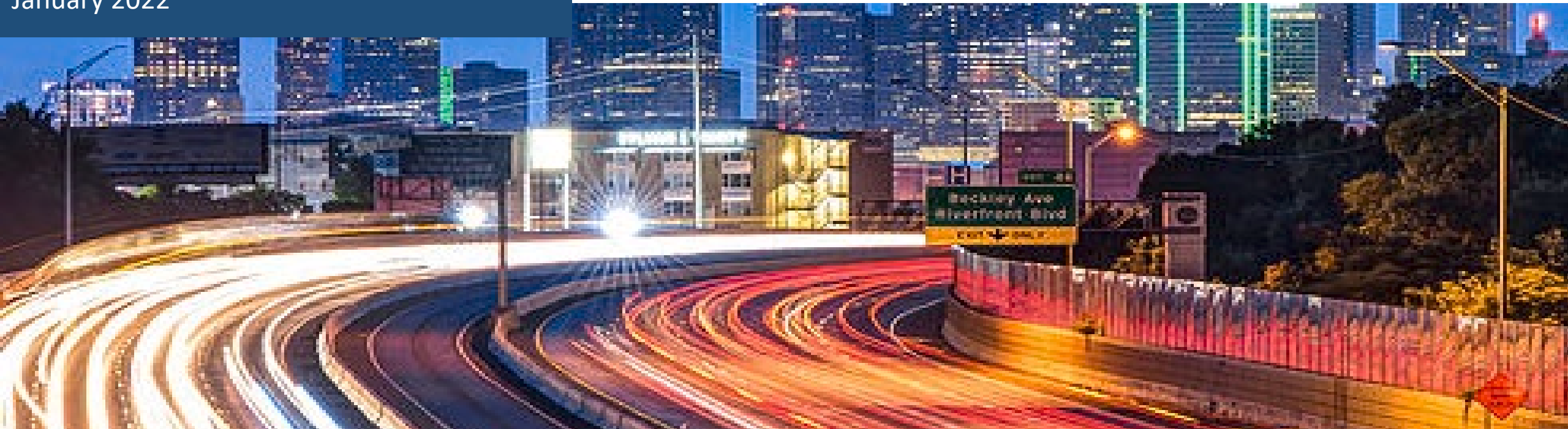


Dallas-Fort Worth  
CLEAN CITIES



North Central Texas  
Council of Governments

January 2022

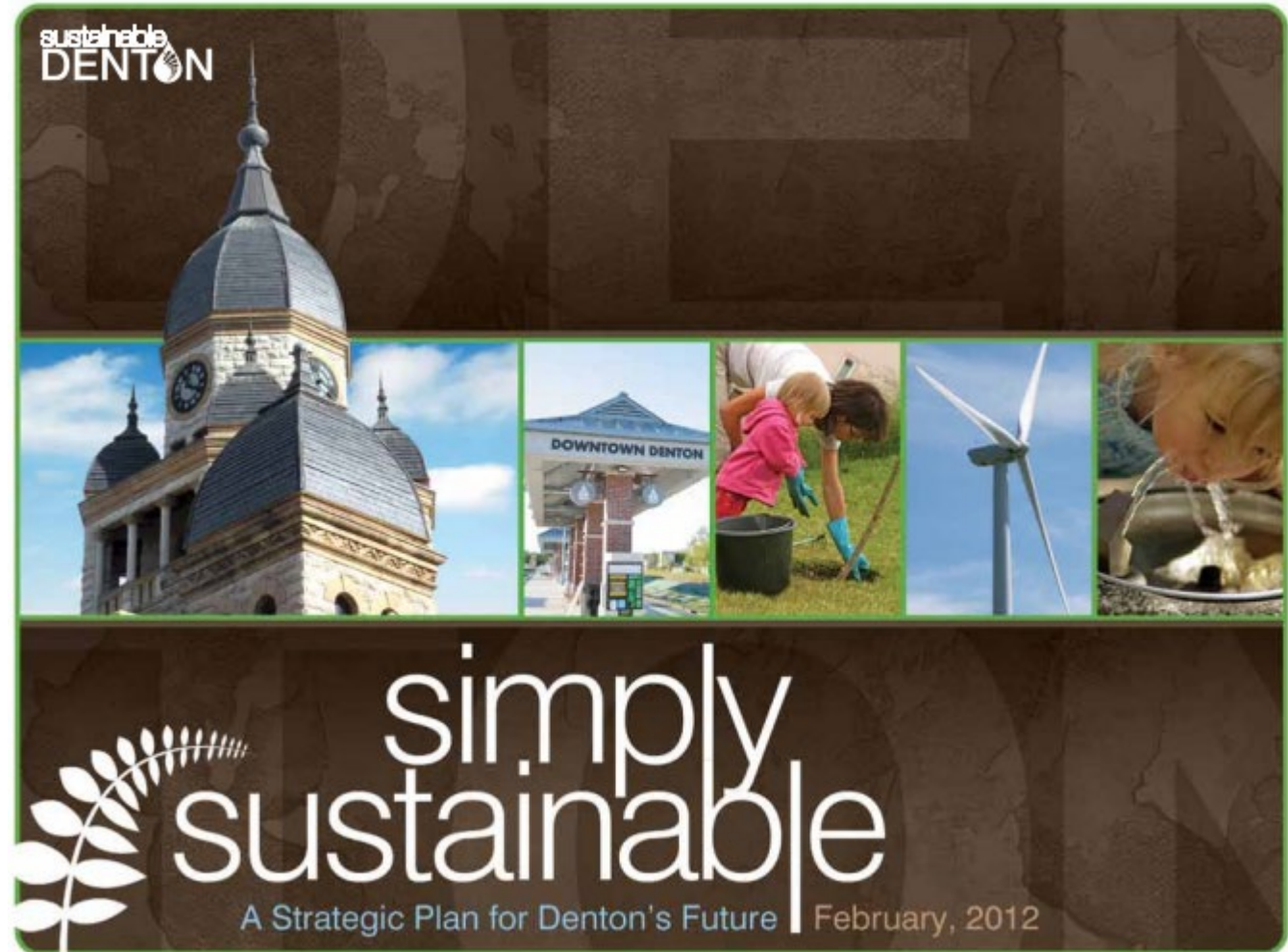


# EV INFRASTRUCTURE IN CITY OF DENTON'S SIMPLY SUSTAINABLE PLAN, 2012

## Chapter 7: Transportation

### Additional Strategy Considerations

- Encourage sustainable modes of transportation including carpooling options, **electric vehicle charging stations infrastructure**, and public transportation



# REGIONAL AND NATIONAL EV TRENDS

## Regional Trends (January 2022)<sup>1</sup>

39,467 EVs Regionwide

424 in City of Denton

32.5% Average Annual Growth in EV  
Registration 2015-2020

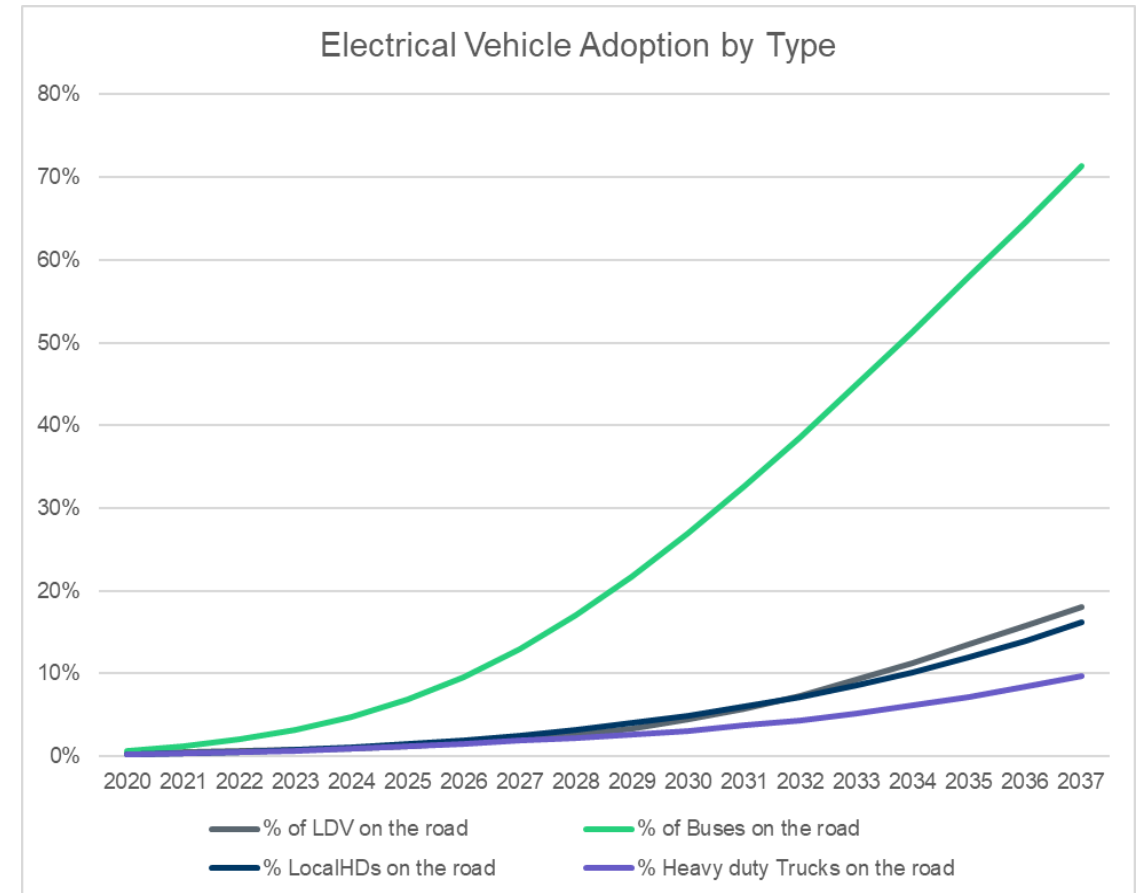
## National Trends

EV Fleet Has Doubled in Past 4 Years<sup>2</sup>

EVs >5% of all New Car Sales in 3<sup>rd</sup> Quarter  
2021<sup>3</sup>

Bloomberg New Energy Finance Suggests  
EVs ~20-30% of New Sales by 2025<sup>4</sup>

Executive Order Aims for Half of All New  
Vehicles Sold in 2030 be Zero-Emission<sup>5</sup>



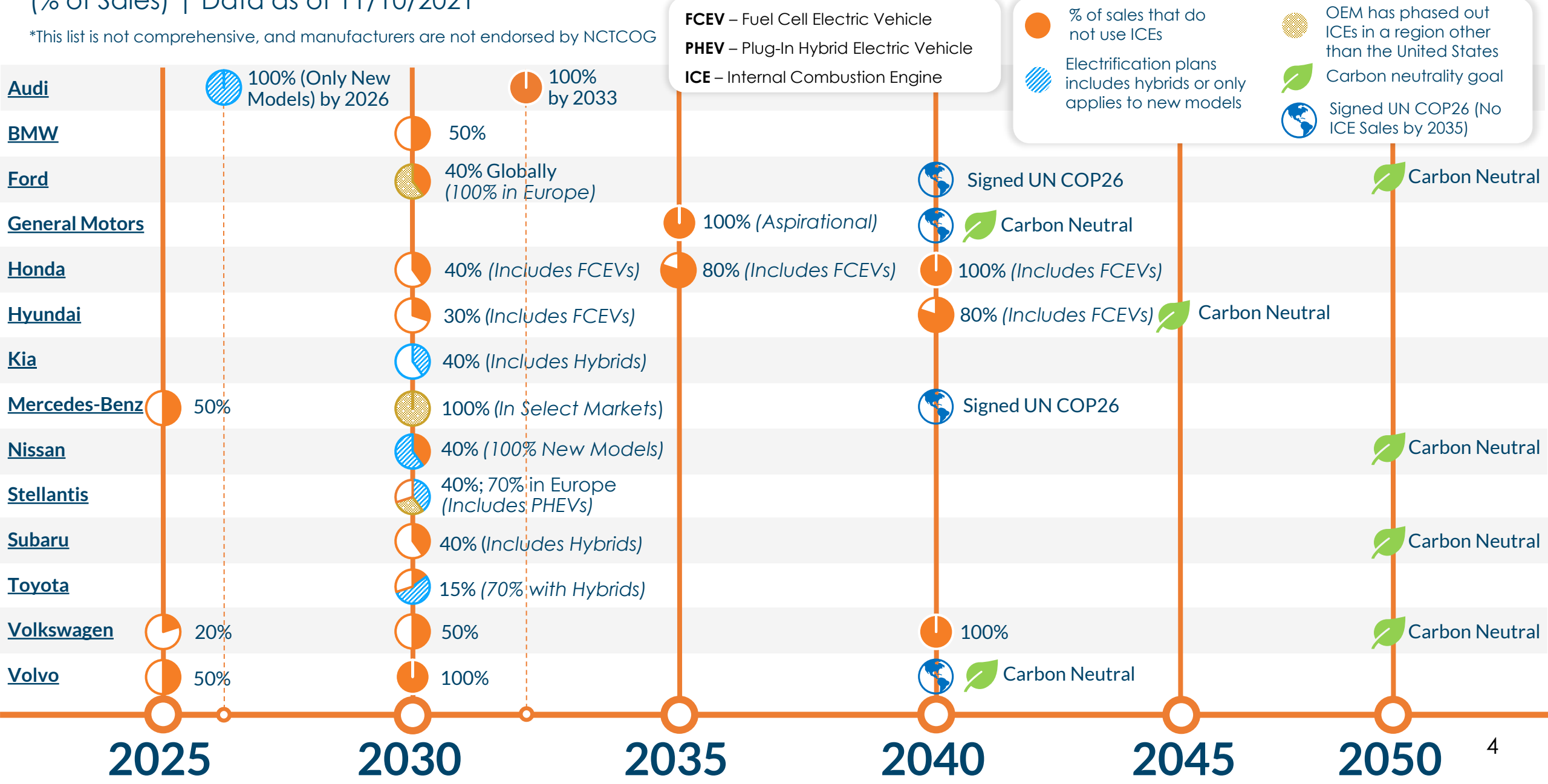
Source: Electric Reliability Council of Texas (ERCOT) Long-Term System Assessment, <https://www.ercot.com/gridinfo/planning>. Uses an adjusted (delayed) forecast from Bloomberg New Energy Finance Electric Vehicle Outlook (<https://about.bnef.com/electric-vehicle-outlook/>).

<sup>1</sup>NCTCOG EV Registration Data, based on DMV Registration ([www.dfwcleancities.org/evnt](http://www.dfwcleancities.org/evnt)); <sup>2</sup>EPA Automotive Trends Report (<https://www.epa.gov/automotive-trends>); <sup>3</sup>Atlas EV Hub (<https://www.atlasevhub.com/tools-resources/quarterly-review-of-ev-market/>); <sup>4</sup>Zero-Emission Vehicles Factbook ([https://assets.bbhub.io/professional/sites/24/BNEF-Zero-Emission-Vehicles-Factbook\\_FINAL.pdf](https://assets.bbhub.io/professional/sites/24/BNEF-Zero-Emission-Vehicles-Factbook_FINAL.pdf)); <sup>5</sup>White House News Room (<https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/>)

# ELECTRIFICATION TRANSITION GOALS OF MANUFACTURERS

(% of Sales) | Data as of 11/10/2021

\*This list is not comprehensive, and manufacturers are not endorsed by NCTCOG

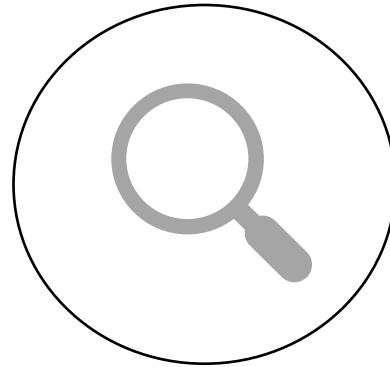




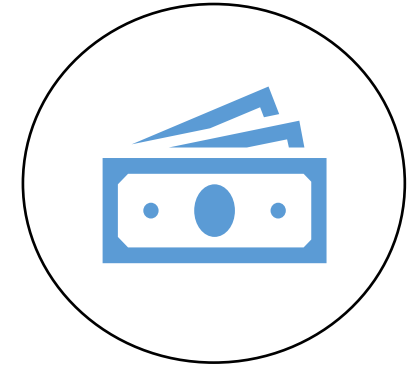
# ANALYSIS GOALS



Assess Resident  
Proximity to Public-  
Access EV Charging  
Stations



Identify Charging  
Gaps to Guide  
Equitable and  
Strategic EV  
Charging Station  
Investments



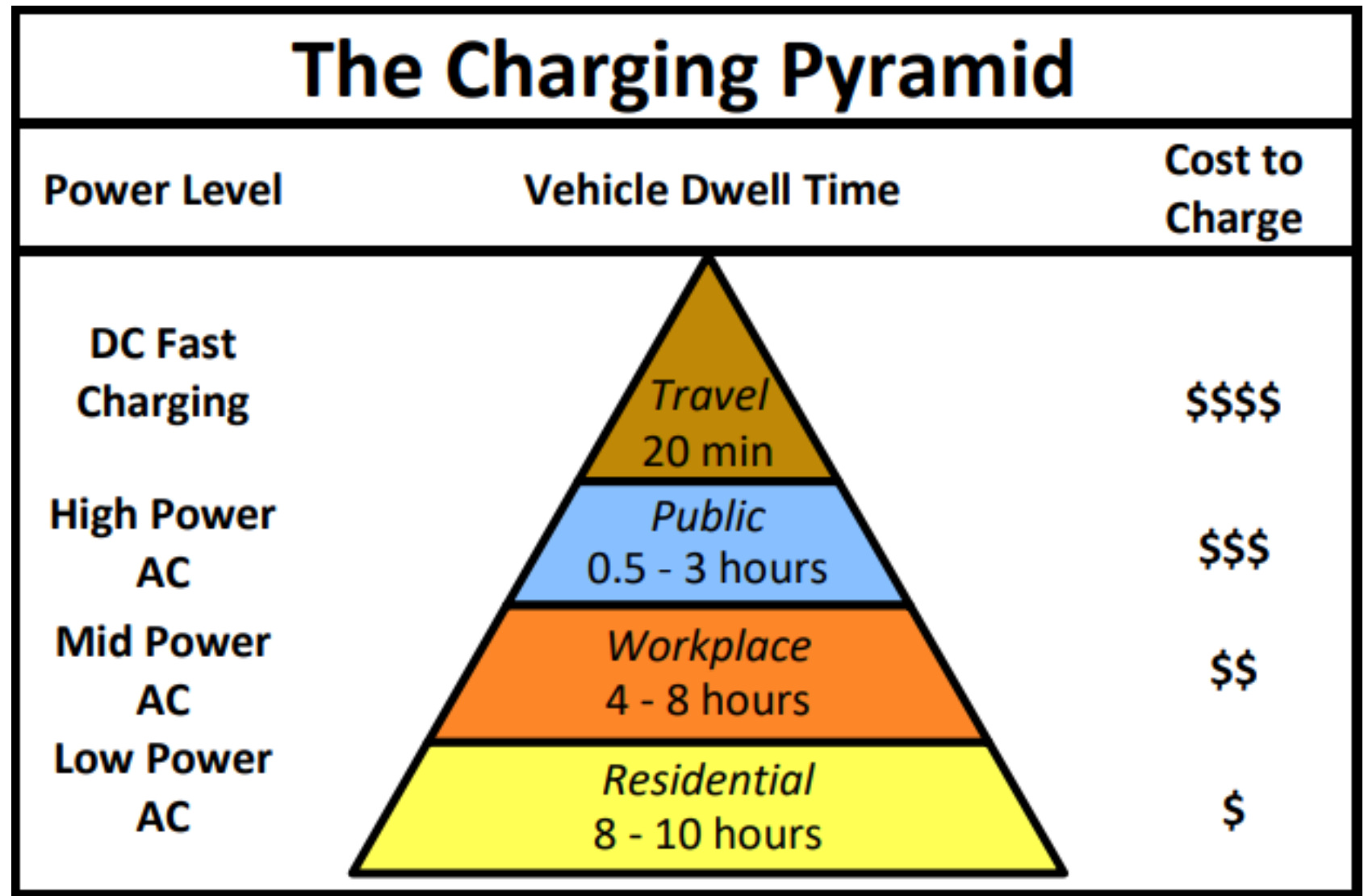
Promote Existing  
Funding  
Opportunities for New  
EV Charging Stations

**Policy Question: Will Installation of Charging Infrastructure in  
Underserved Areas Help Increase Equitable EV Adoption?**

# CHARGING HIERARCHY

## DID YOU KNOW?

According to the Department of Energy, drivers do **more than 80%** of their charging at home



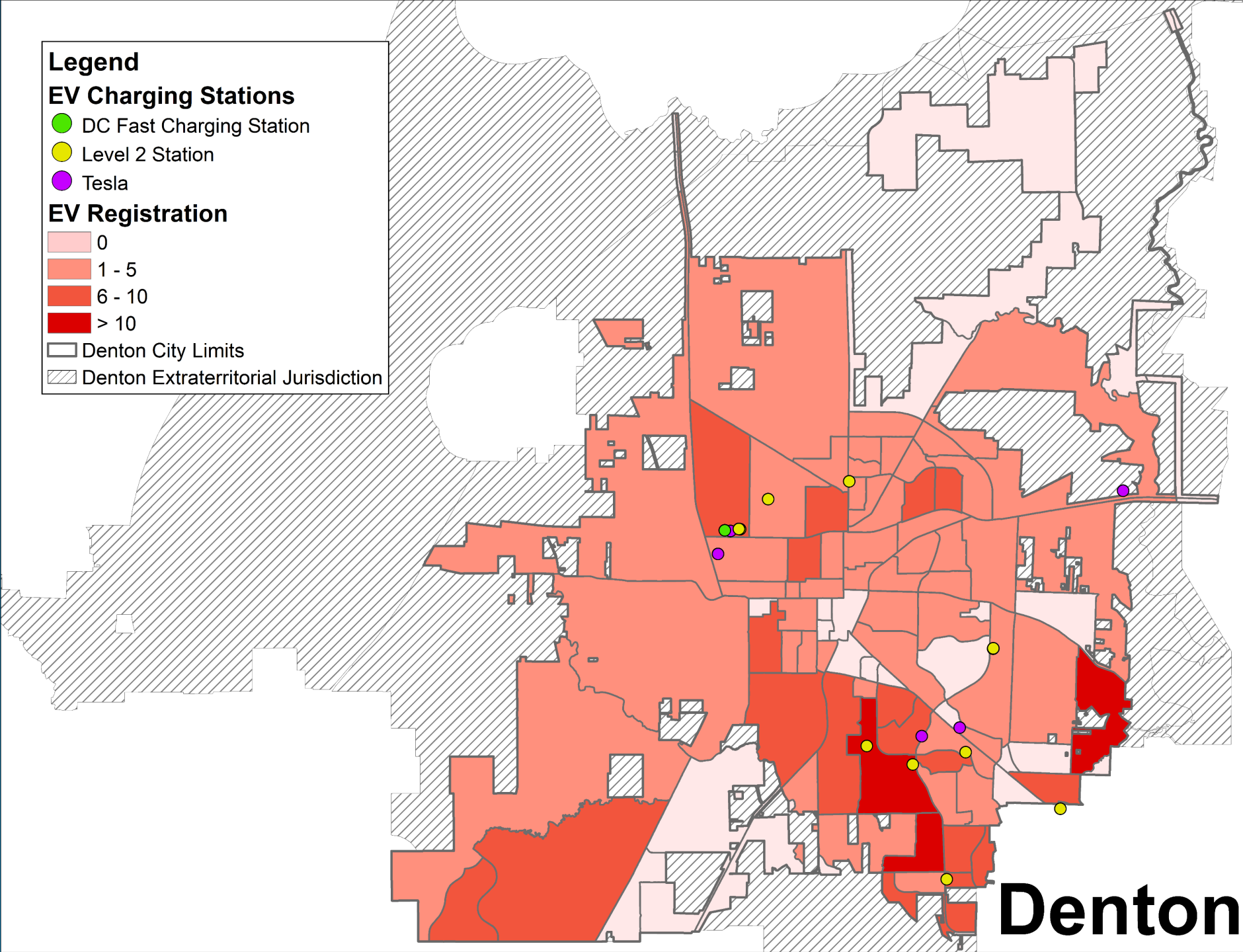
Based on Location Type and Average Time Spent, Different Charging Levels May be Better Suited by Site than Others

# EXISTING EV REGISTRATION BY CENSUS BLOCK GROUP & PUBLIC EV CHARGING STATIONS

18

Existing Publicly  
Accessible EV  
Charging Stations in  
the City of Denton

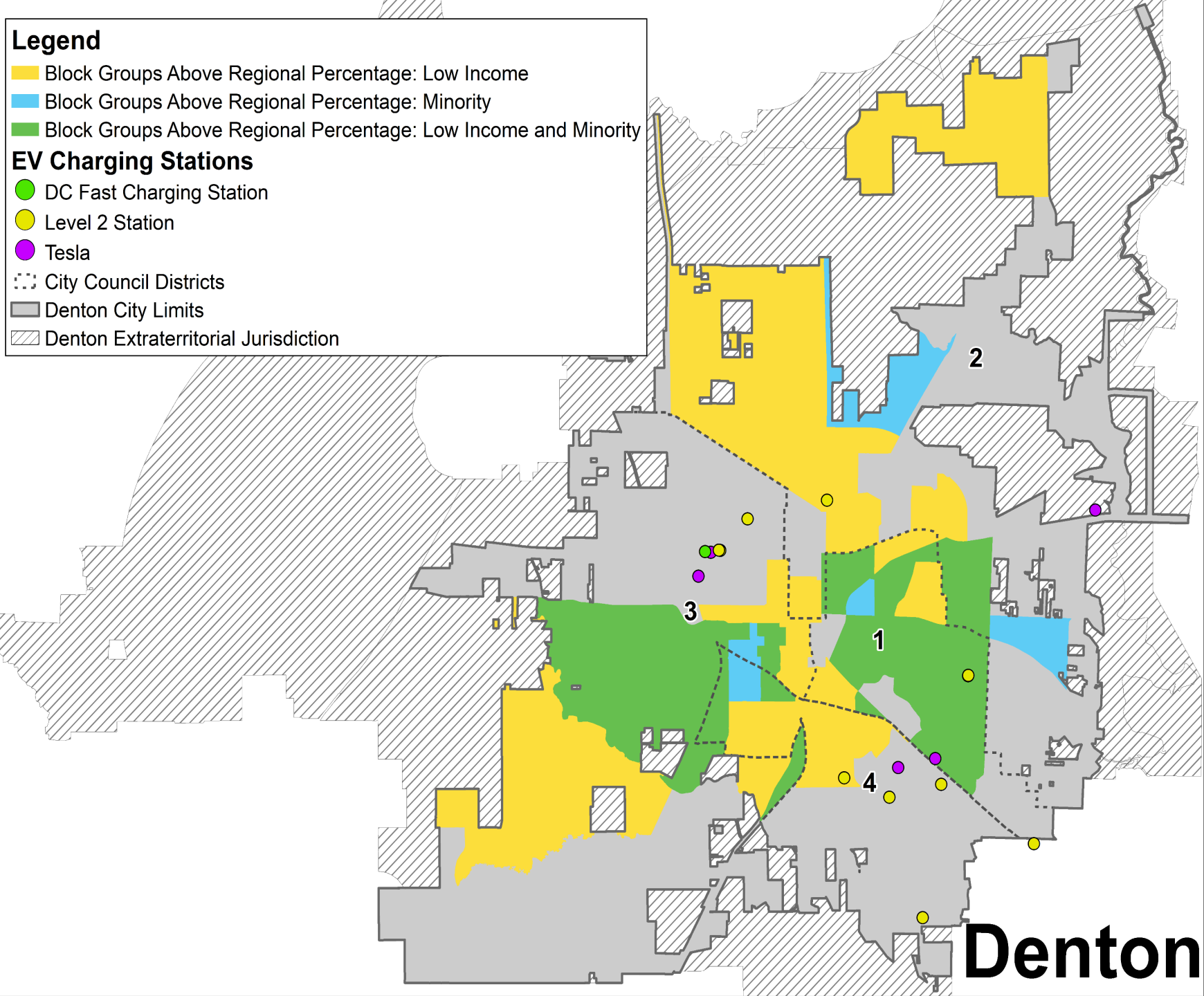
Most stations clustered  
near to each other in  
two areas of the city



# NCTCOG ENVIRONMENTAL JUSTICE INDEX AND PUBLIC EV CHARGING STATIONS

Few EV charging stations are located in Environmental Justice areas.

The NCTCOG Environmental Justice (EJ) Index identifies block groups that are above the region's percentage for low-income (below poverty) individuals (16.11% of population), minority (54.67% of population), or both.



# MULTI-FAMILY PROPERTIES (MFP) & EV CHARGING INFRASTRUCTURE

Lack of access to EV charging is one of the top barriers to adoption

↳ Most multi-family residents do not have the ability to charge their car at home

Many multi-family residents rely on workplace or public charging stations elsewhere to charge their vehicles

**31.4%** Percent of Housing Stock as Multi-Family in the Denton-Lewisville Urbanized Area

Source: [2019 American Community Survey, 1-Year Estimates, US Census Bureau](#)



# MULTI-FAMILY PROPERTIES AND LOCATION OF PUBLIC ACCESS EV CHARGING STATIONS

## Legend

■ Multi-Family Property (MFP)

## EV Charging Stations

● DC Fast Charging Station

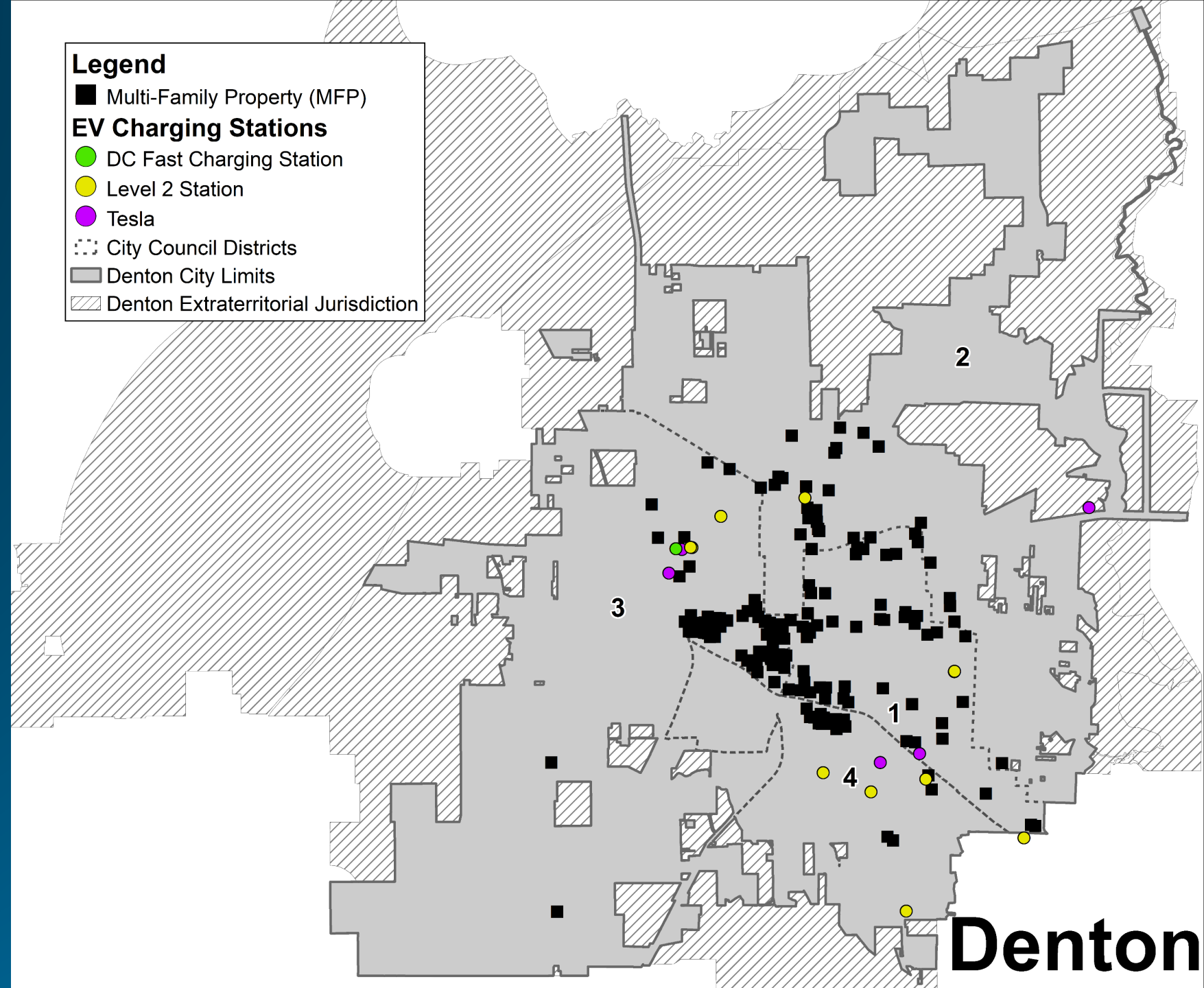
● Level 2 Station

● Tesla

⋯ City Council Districts

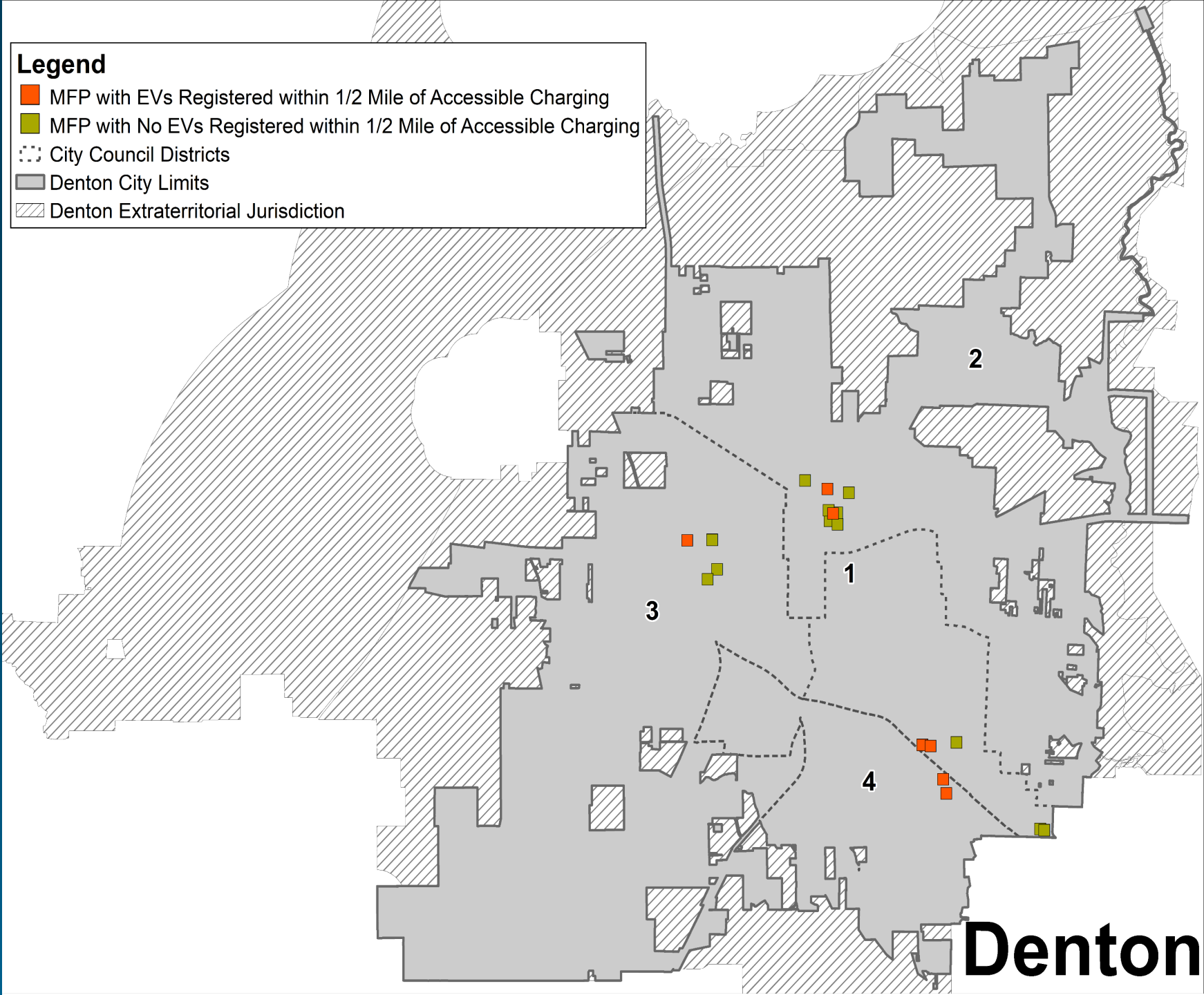
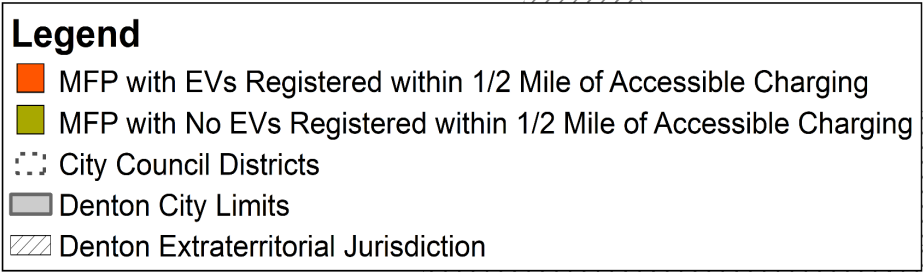
■ Denton City Limits

▨ Denton Extraterritorial Jurisdiction



Denton

# EV OWNERSHIP AT MULTI-FAMILY PROPERTIES NEAR EV CHARGING STATIONS

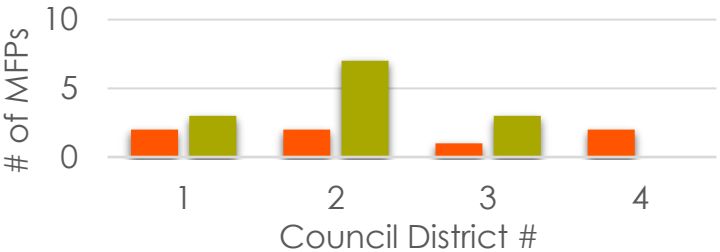


## CITYWIDE

MFPs with Access to Charging within 1/2 Mile

11%

## MFPs Near EV Charging Stations



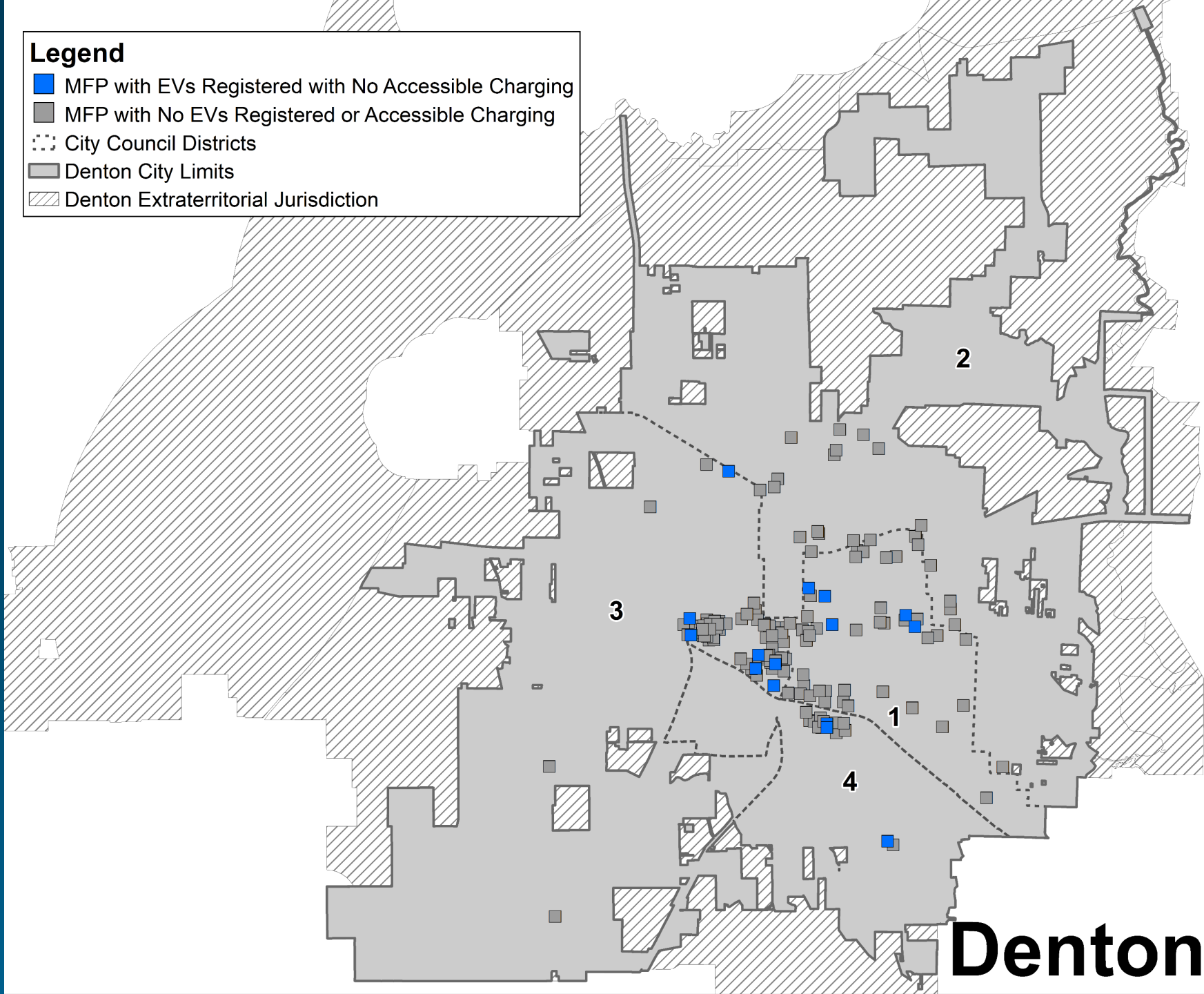
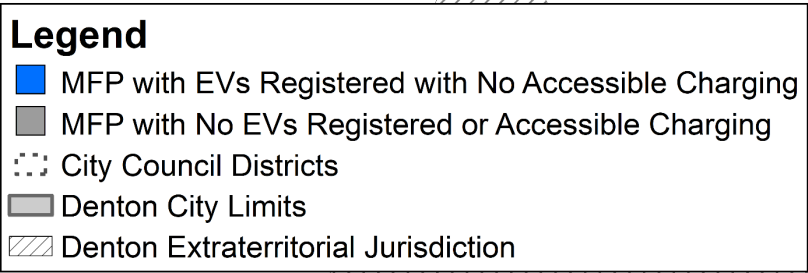
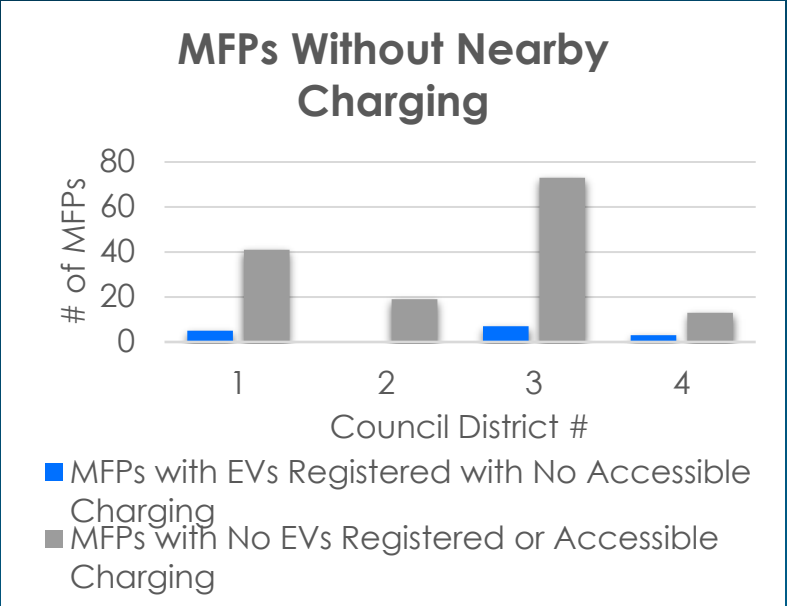
■ MFPs with Accessible Charging within 1/2 Mile with EVs Registered  
■ MFPs with Accessible Charging within 1/2 Mile with No EVs Registered

Source: NCTCOG Data (from Texas DMV Registration), U.S. DOE, [Alternative Fuels Station Locator](#)

Denton

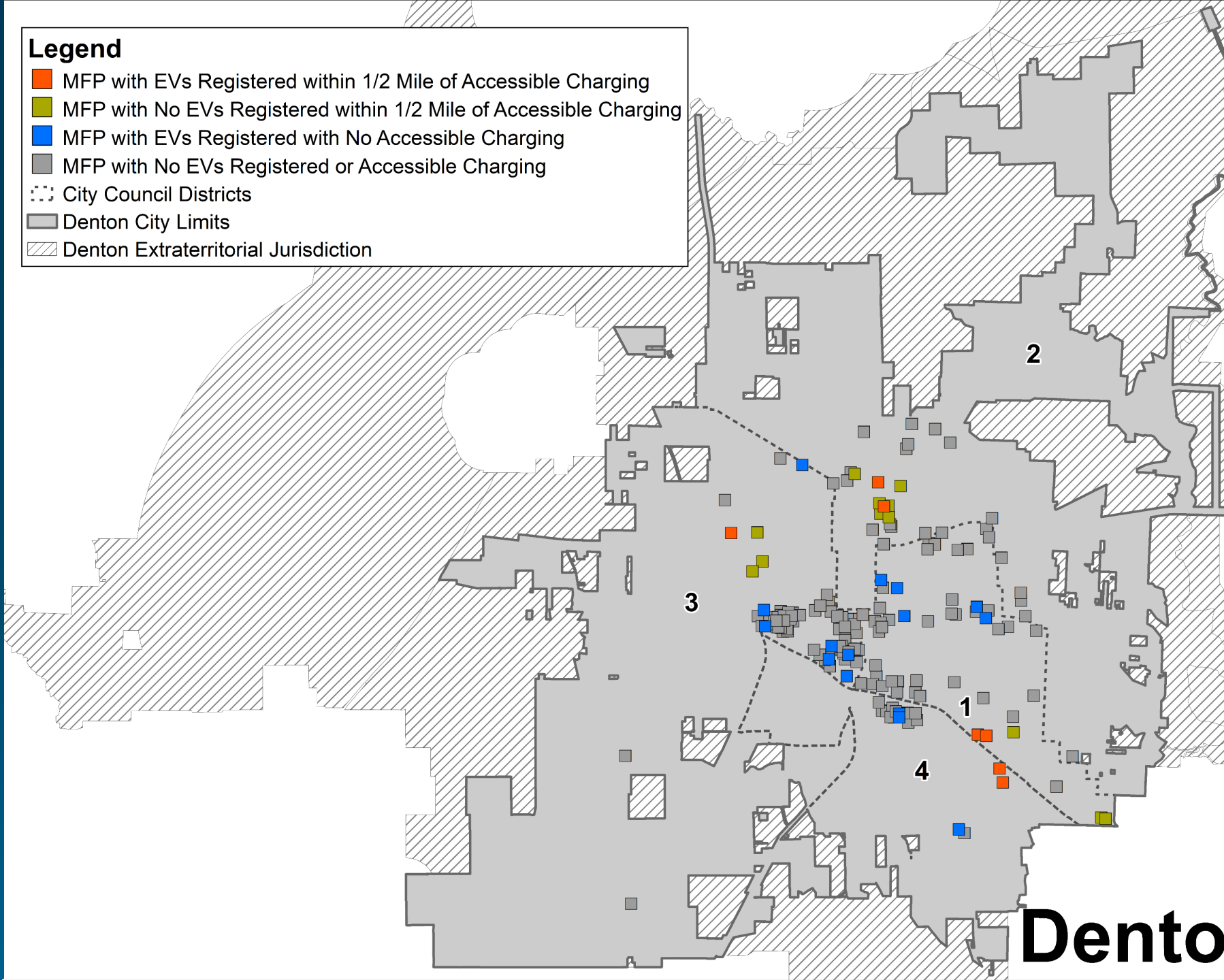
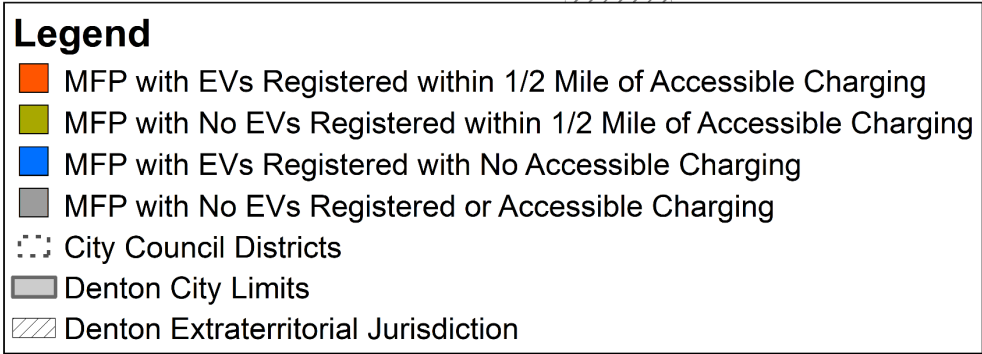
# EV OWNERSHIP AT MULTI-FAMILY PROPERTIES WITHOUT CHARGING NEARBY

**CITYWIDE**  
**MFPs with No Charging Stations Within ½ Mile**  
**89%**





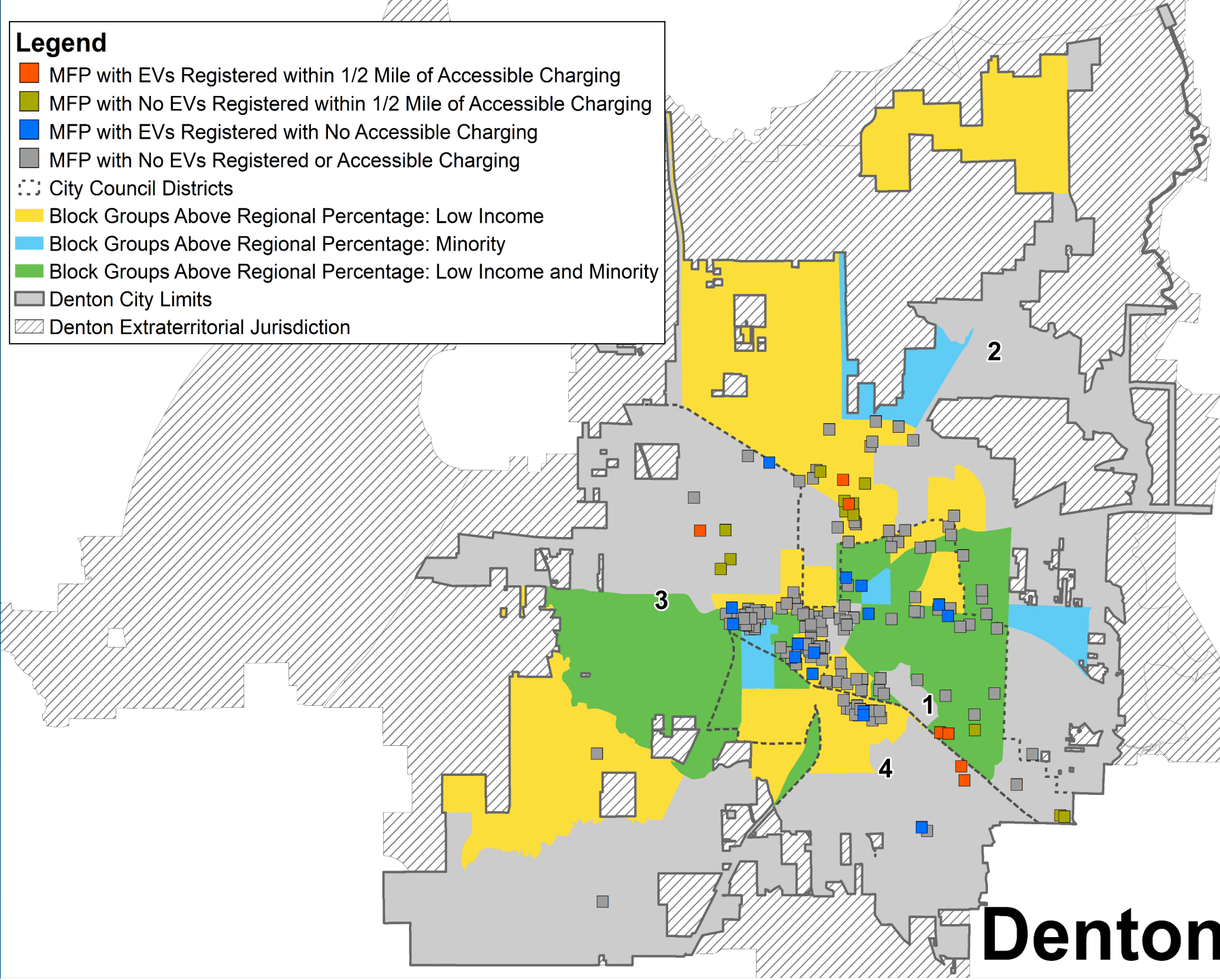


# MULTI-FAMILY PROPERTIES WITH AND WITHOUT CHARGING STATIONS NEARBY, OR WITH REGISTERED EVs



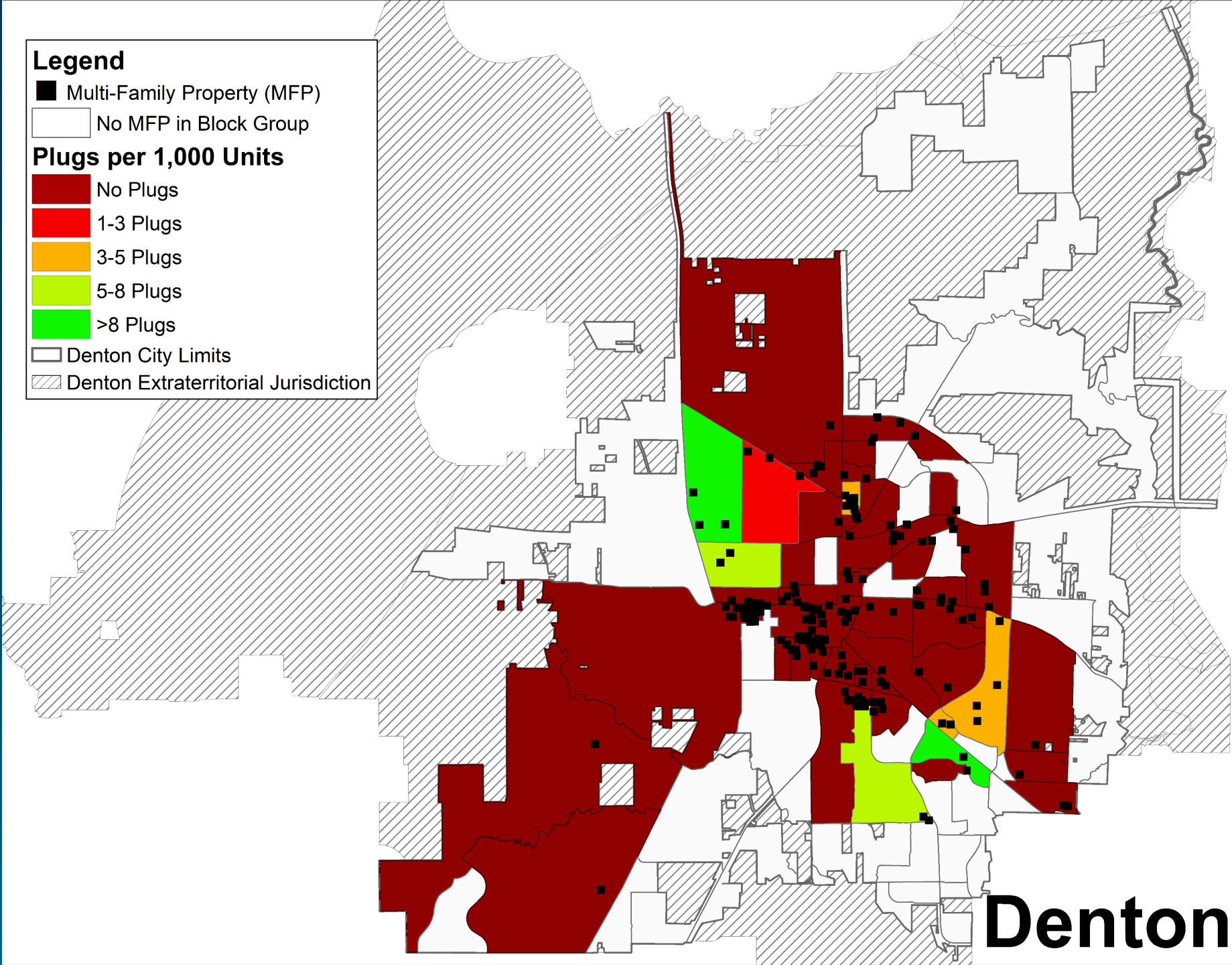
# MULTI-FAMILY PROPERTIES WITH AND WITHOUT CHARGING STATION ACCESS OR REGISTERED EVs

CITYWIDE	
 MFPs Without Nearby Charging	 MFPs in an EJ Area Without Nearby Charging
89%	92%



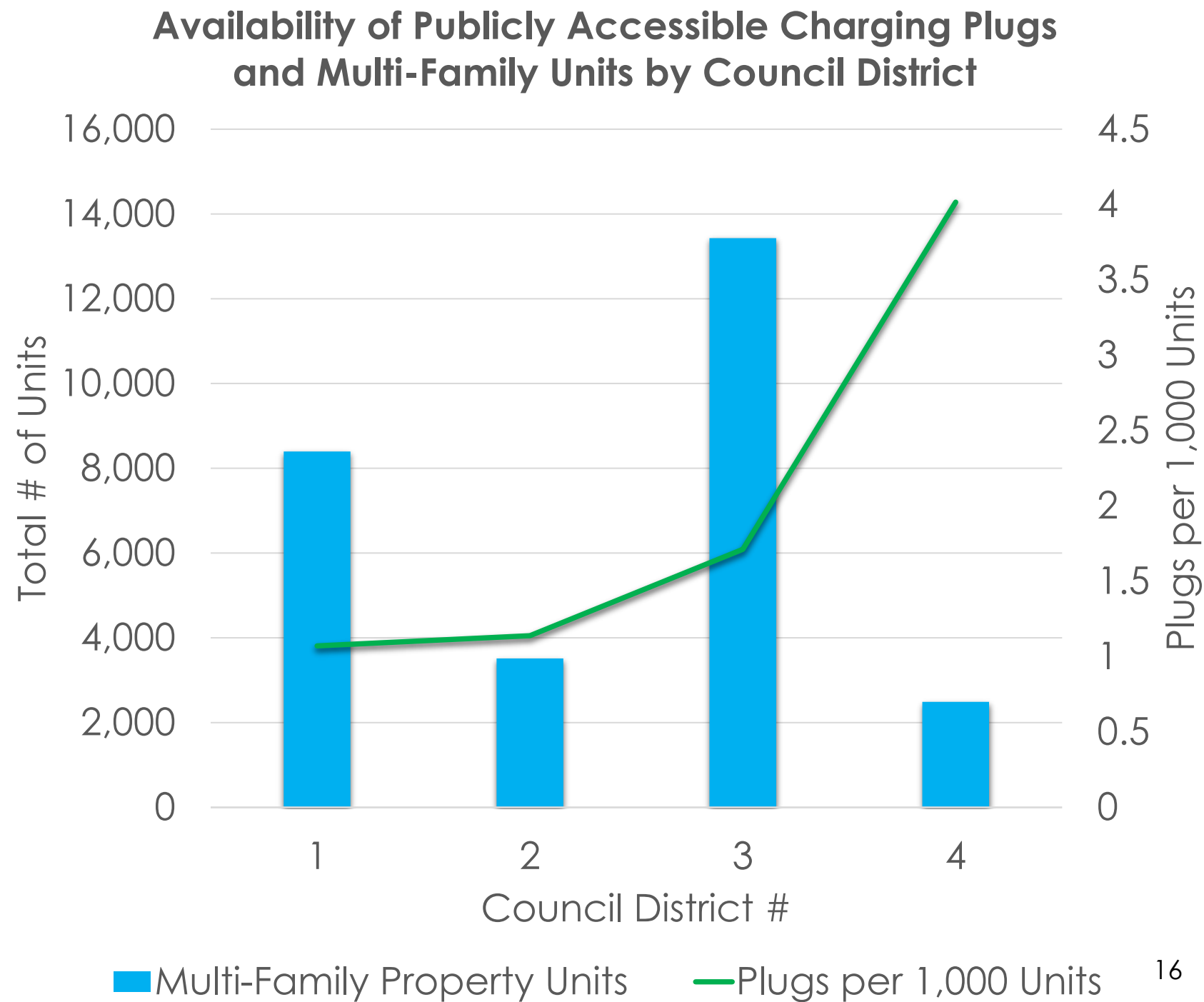


# MULTI-FAMILY PROPERTIES AND AVAILABILITY OF PUBLIC ACCESS EV CHARGING BY BLOCK GROUP









Source: NCTCOG Data (from Texas DMV Registration), U.S. DOE, [Alternative Fuels Station Locator](#)

# MULTI-FAMILY UNITS AND CHARGING STATION AVAILABILITY BY COUNCIL DISTRICT



# CHARGING STATION ACCESS BY COUNCIL DISTRICT

Council District	Multi-Family Properties Without Nearby Charging		 Public Charging Plugs per 1,000 MFP Units
	 Overall	 In an EJ Area	
1	90%	93%	1.1
2	68%	64%	1.1
3	95%	100%	1.7
4	89%	100%	4.0

CITY AVERAGE		
Multi-Family Properties Without Nearby Charging		 Public Charging Plugs per 1,000 MFP Units
 Overall	 In an EJ Area	
89%	92%	1.7

In general, multi-family properties in an Environmental Justice area are less likely to have charging stations nearby.

# PROPOSED NEXT STEPS FOR CITY OF DENTON

## **Continue Existing City Efforts**

**Outreach for EV Charging funding opportunities to multi-family properties, Continue promotion of DME stations**

## **Identify and Fill Charging Gaps**

**Identify locations that would fill a charging gap. Encourage Property Owners to Install Public EV Charging or Consider Additional Chargers on City-Owned Property.**

## **Consider Adopting a Multi-Family Charging Policy/Ordinance**

**Requires Minimum EV Charging Readiness/ Installation for Existing or New Construction Multi-Family Housing**

## **Partner for Available Funding**

**Pursue and Promote Funding Incentives**

**Educate Property Owners on the Benefits of EV Charging at their Property**

# DATA SOURCES: MULTI-FAMILY PROPERTIES

<u>Data Set</u>	<u>Source</u>	<u>Date of Data Set in Analysis</u>
Publicly Accessible EV Charging Stations	<a href="#"><u>Department of Energy Alternative Fuel Station Locator</u></a>	December 2021
EV Registration Data	<a href="#"><u>NCTCOG Analysis from NCTCOG EV Registration Dataset</u></a>	December 2021
Multi-Family Properties	<a href="#"><u>NCTCOG Development Monitoring Program Dataset</u></a>	December 2021
Environmental Justice Index	<a href="#"><u>NCTCOG Environmental Justice Data</u></a>	January 2022



# CONTACT

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