

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



Dallas-Fort Worth  
CLEAN CITIES



North Central Texas  
Council of Governments

Environment & Sustainability Council Committee  
Lori Clark, Program Manager & DFW Clean Cities Coordinator

December 7, 2021



# EV GOALS IN THE CITY OF DALLAS COMPREHENSIVE ENVIRONMENTAL & CLIMATE ACTION PLAN (CECAP)

## Goal 3: Dallas communities have access to sustainable, affordable, transportation options.

### Objectives

- Shift the surface transportation system to move people and goods in fuel-efficient vehicles.
- Reduce trips where people drive alone.
- Synergize jobs and housing with transportation infrastructure to increase access to walking and biking options, and public transit.
- Ensure that walking, biking, public transit, vehicular transportation infrastructure is reliable and safe.

### Targets

#### Publicly Available EV Charging

- 1,500 outlets to support 39,000 vehicles by 2030
  - **EXISTING:** 176 stations with 380 outlets and 3,476 registered EVs (as of August 2021)
  - **NEED:** 1120 additional outlets by 2030

#### Electric fleets

- All new transit vehicle purchases by the City, DISD, DART fully electric by 2030
- 100% electrified fleet by 2040

#### Single occupant vehicle travel mode shift

- 88% to 79% in 2030
- 88% to 62% in 2050

# REGIONAL AND NATIONAL EV TRENDS

## Regional Trends (December 2021)<sup>1</sup>

37,832 EVs Regionwide

7,371 in City of Dallas

49.6% Average Annual Growth in EV  
Registration 2015-2021

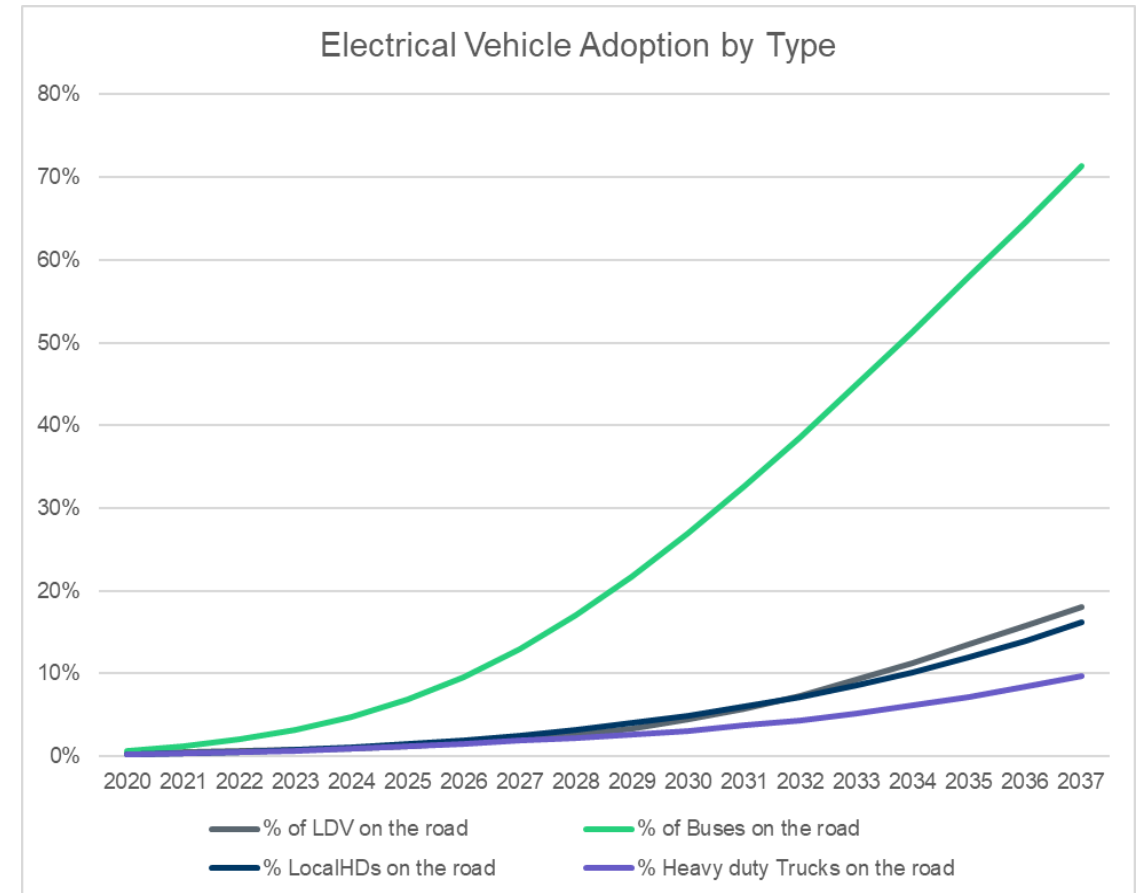
## National Trends

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>



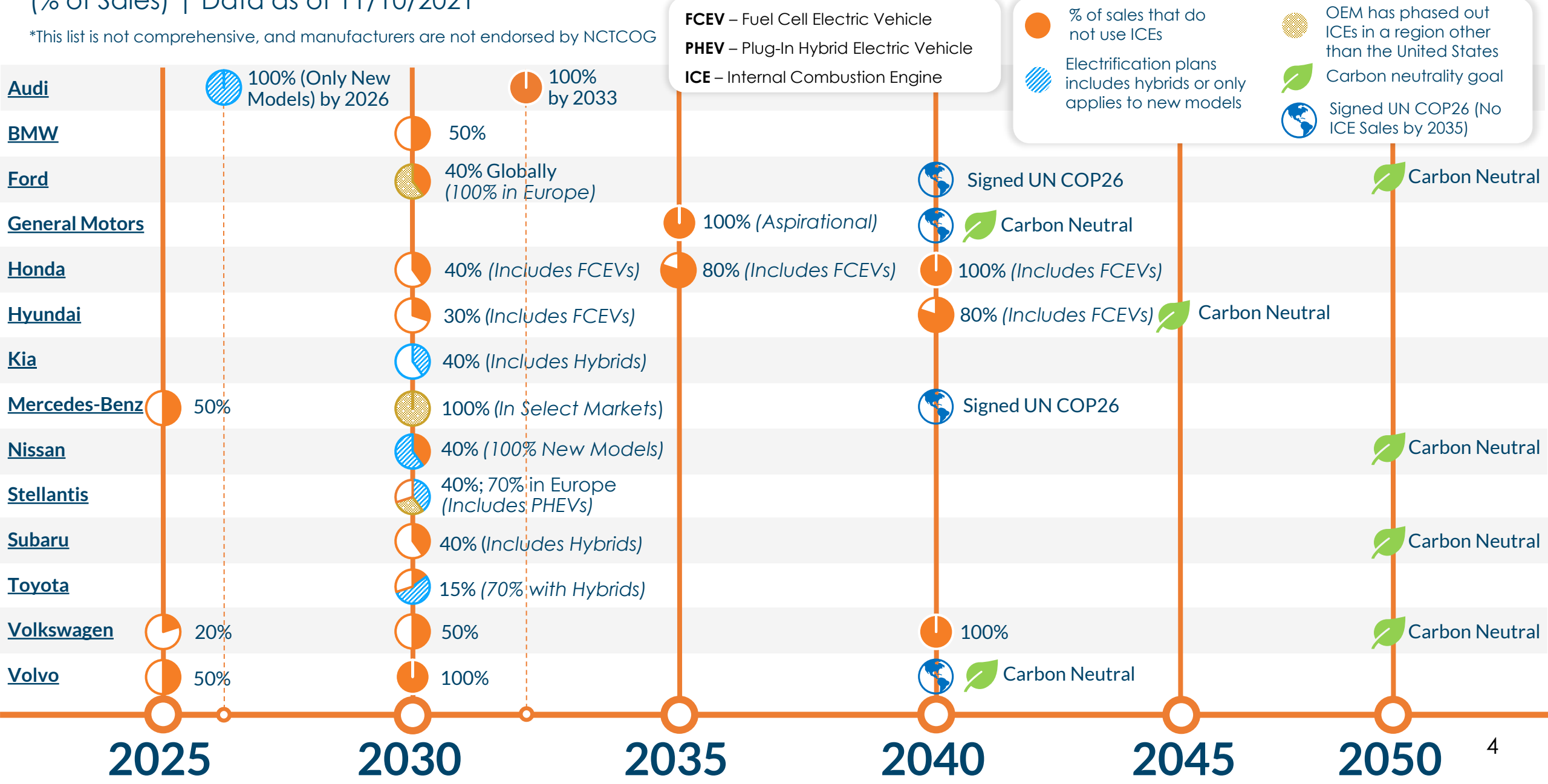
Source: Electric Reliability Council of Texas (ERCOT) Long-Term System Assessment, <https://www.ercot.com/gridinfo/planning>. Uses an adjusted (delayed) forecast from Bloomberg New Energy Finance Electric Vehicle Outlook (<https://about.bnef.com/electric-vehicle-outlook/>).

<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

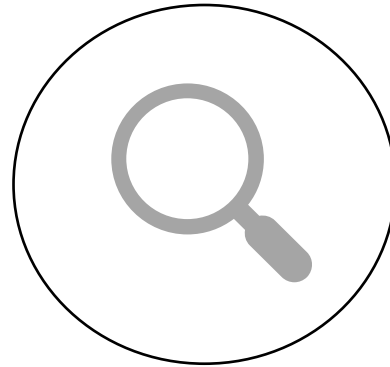
\*This list is not comprehensive, and manufacturers are not endorsed by NCTCOG



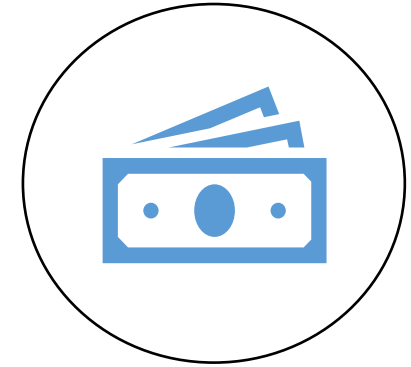
# ANALYSIS GOALS



Assess Resident  
Proximity to Public-  
Access EV Charging  
Stations



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



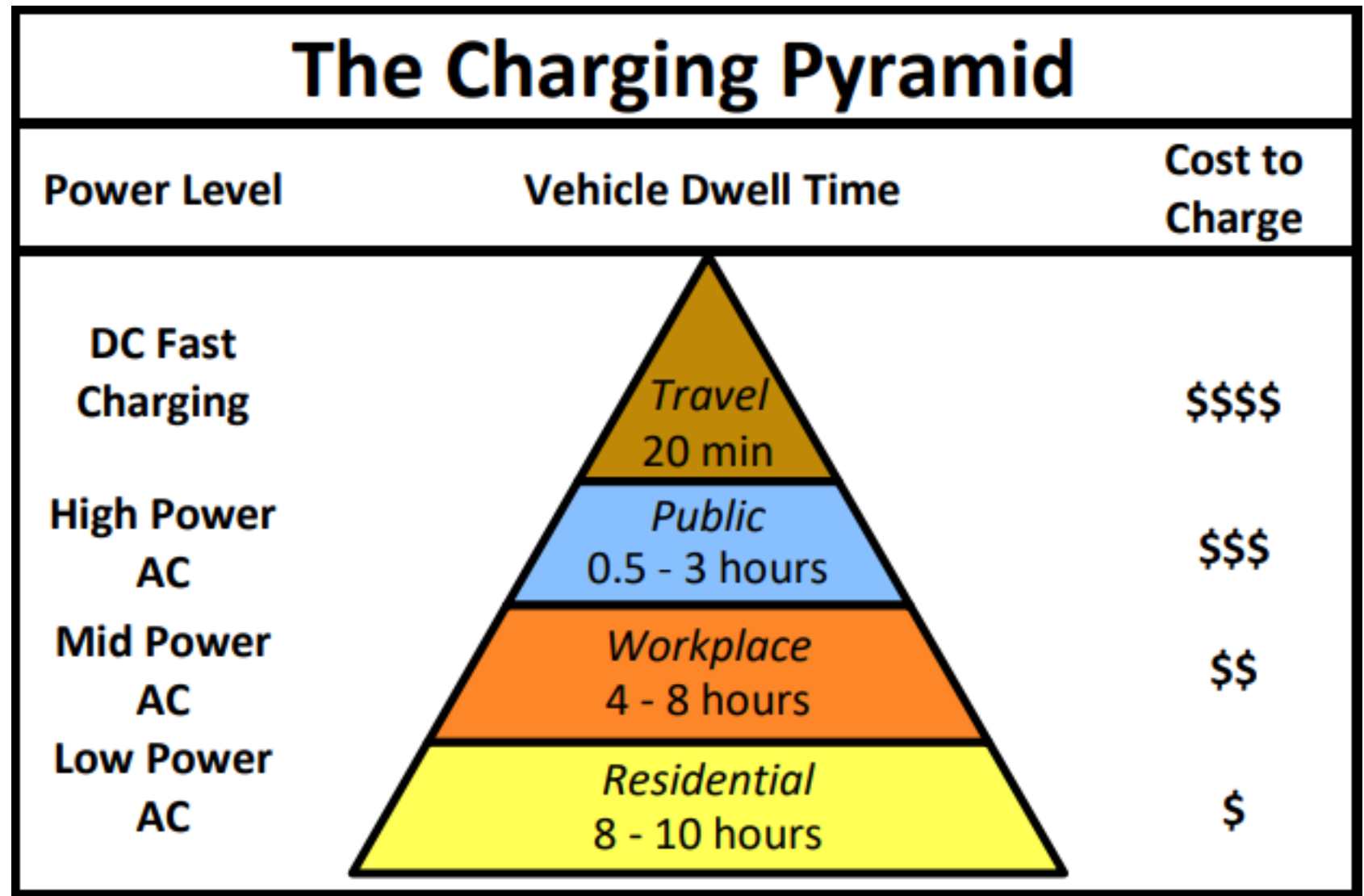
Promote Existing  
Funding  
Opportunities for New  
EV Charging Stations

**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



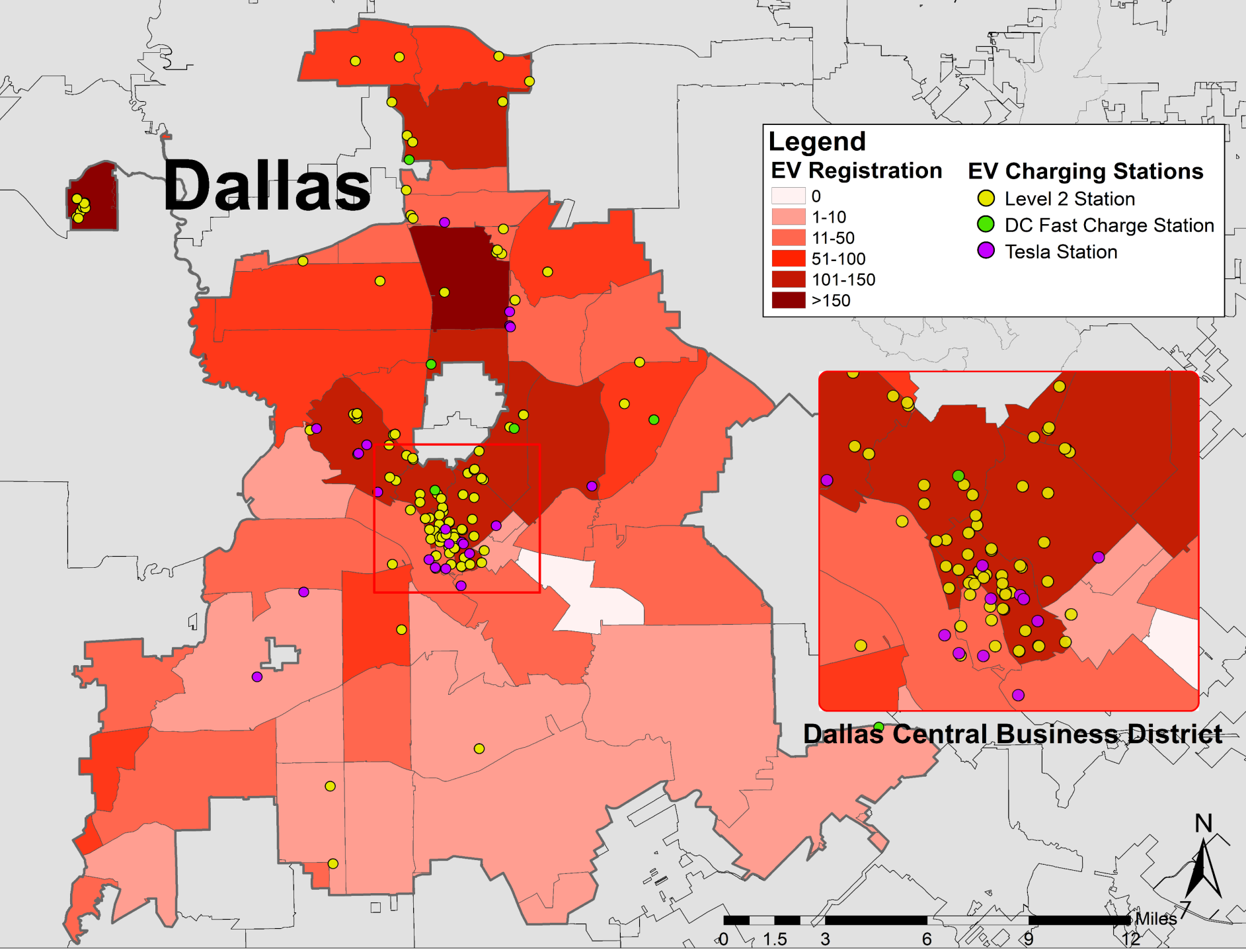
Based on Location Type and Average Time Spent, Different Charging Levels May be Better Suited by Site than Others

# EXISTING EV REGISTRATION BY ZIP CODE & PUBLIC EV CHARGING STATIONS

176

Existing Publicly  
Accessible EV  
Charging Stations in  
the City of Dallas

Data indicates a  
correlation between  
proximity to EV  
charging stations and  
EV registration.

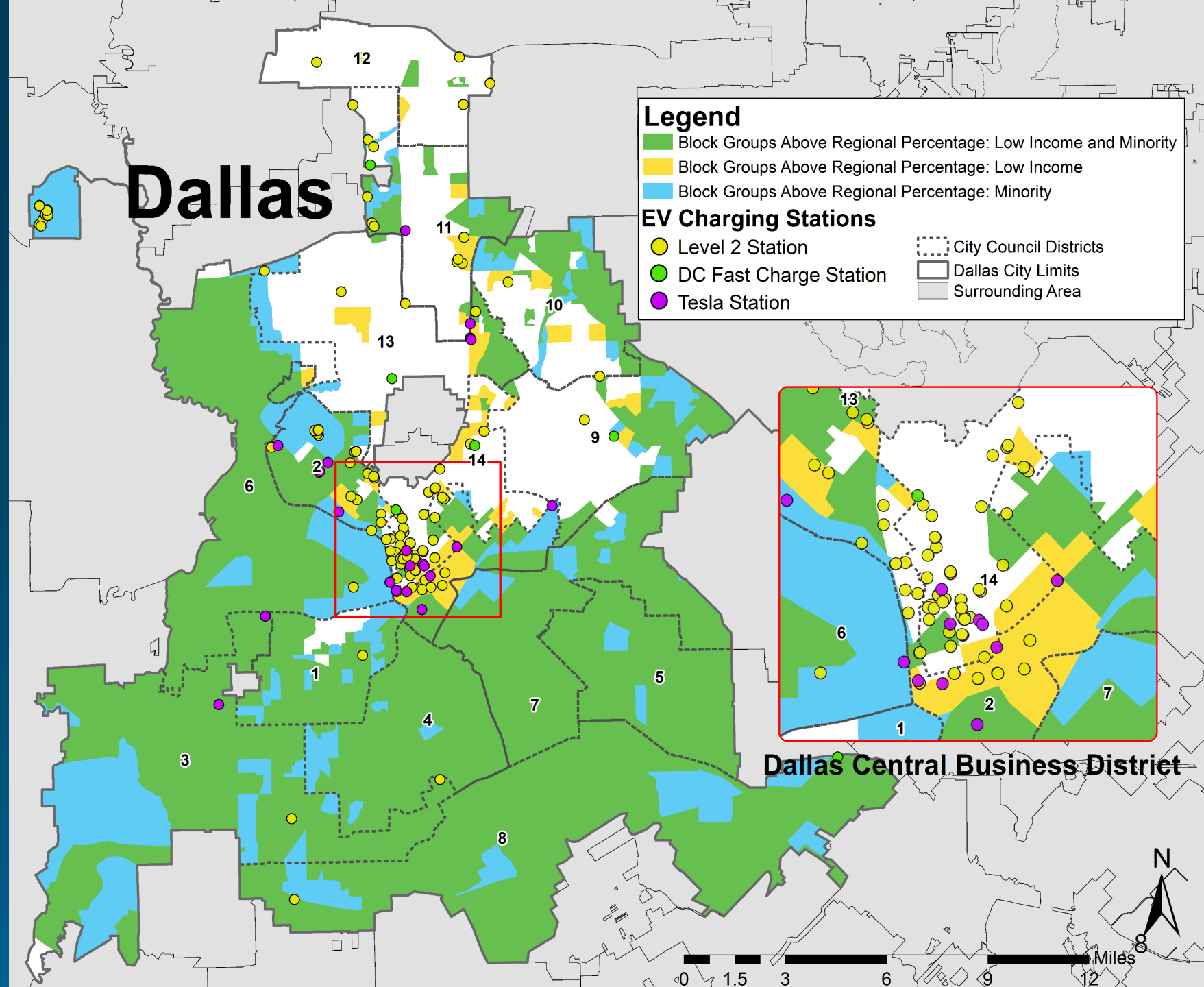




# NCTCOG ENVIRONMENTAL JUSTICE INDEX AND PUBLIC EV CHARGING STATIONS

Relatively 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

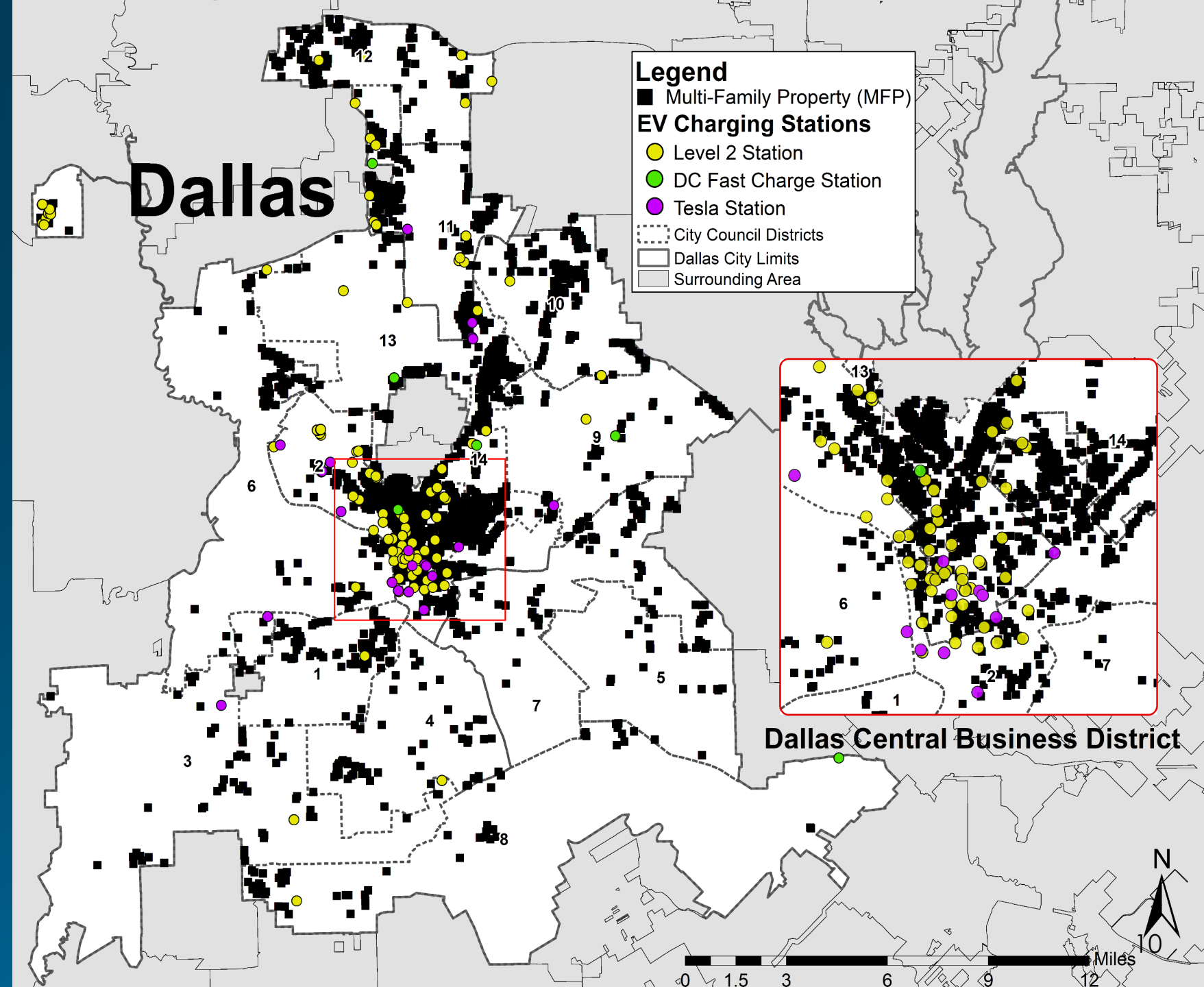
↳ Most multi-family residents do not have the ability to charge their car at home

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

**18.2%** Percent of Residents in the Dallas-Fort Worth-Arlington Urbanized Area Living in Apartments

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

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



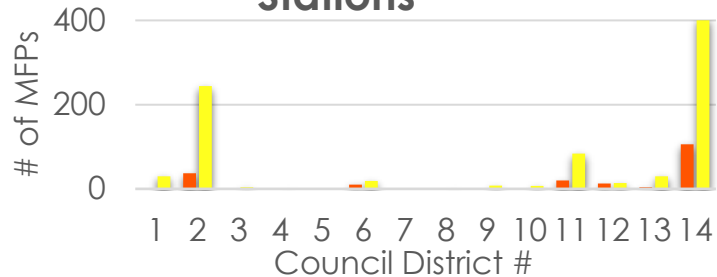
# EV OWNERSHIP AT MULTI-FAMILY PROPERTIES NEAR EV CHARGING STATIONS

## CITYWIDE

MFPs with Access to Charging within ½ Mile

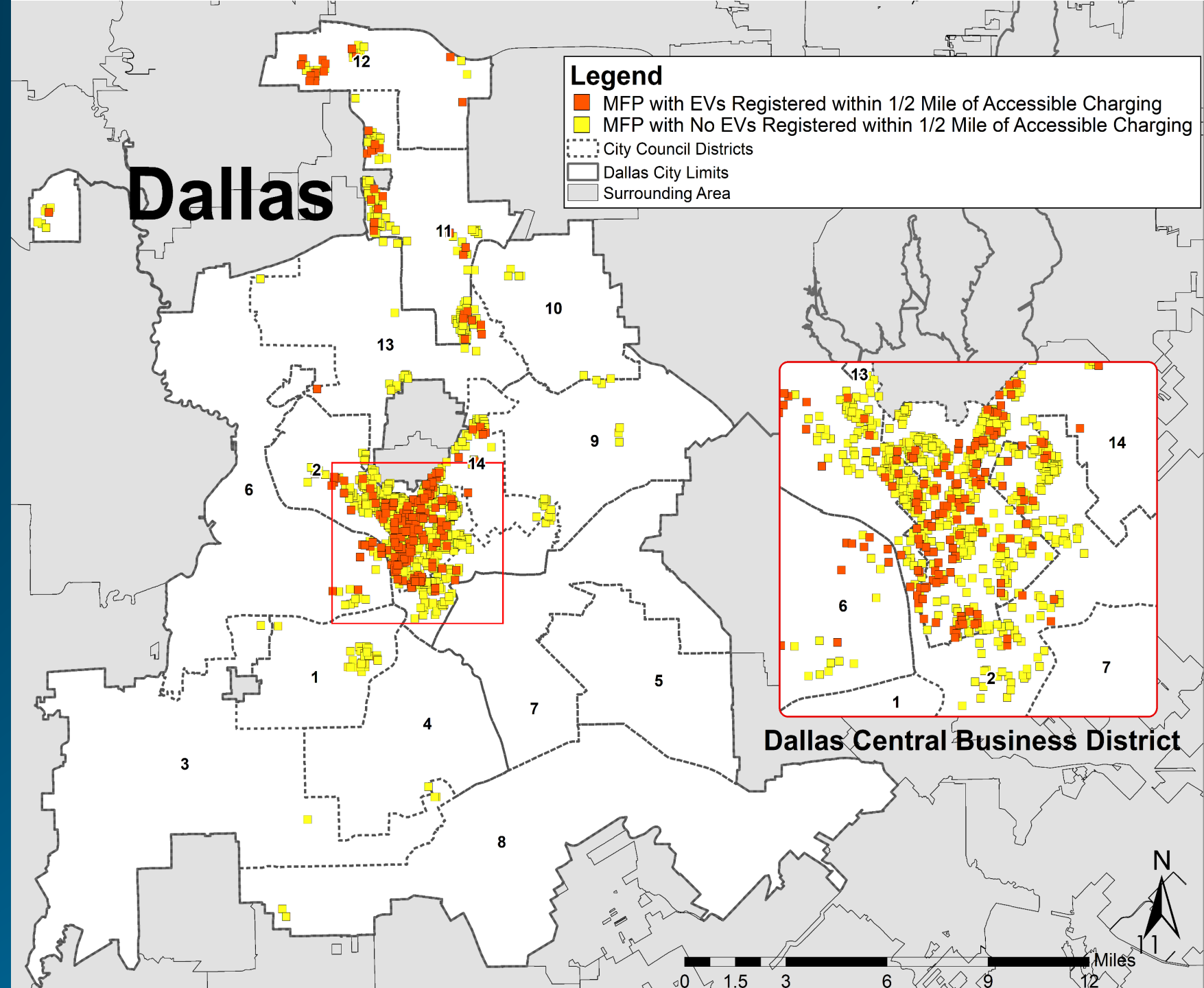
46%

## 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](#)

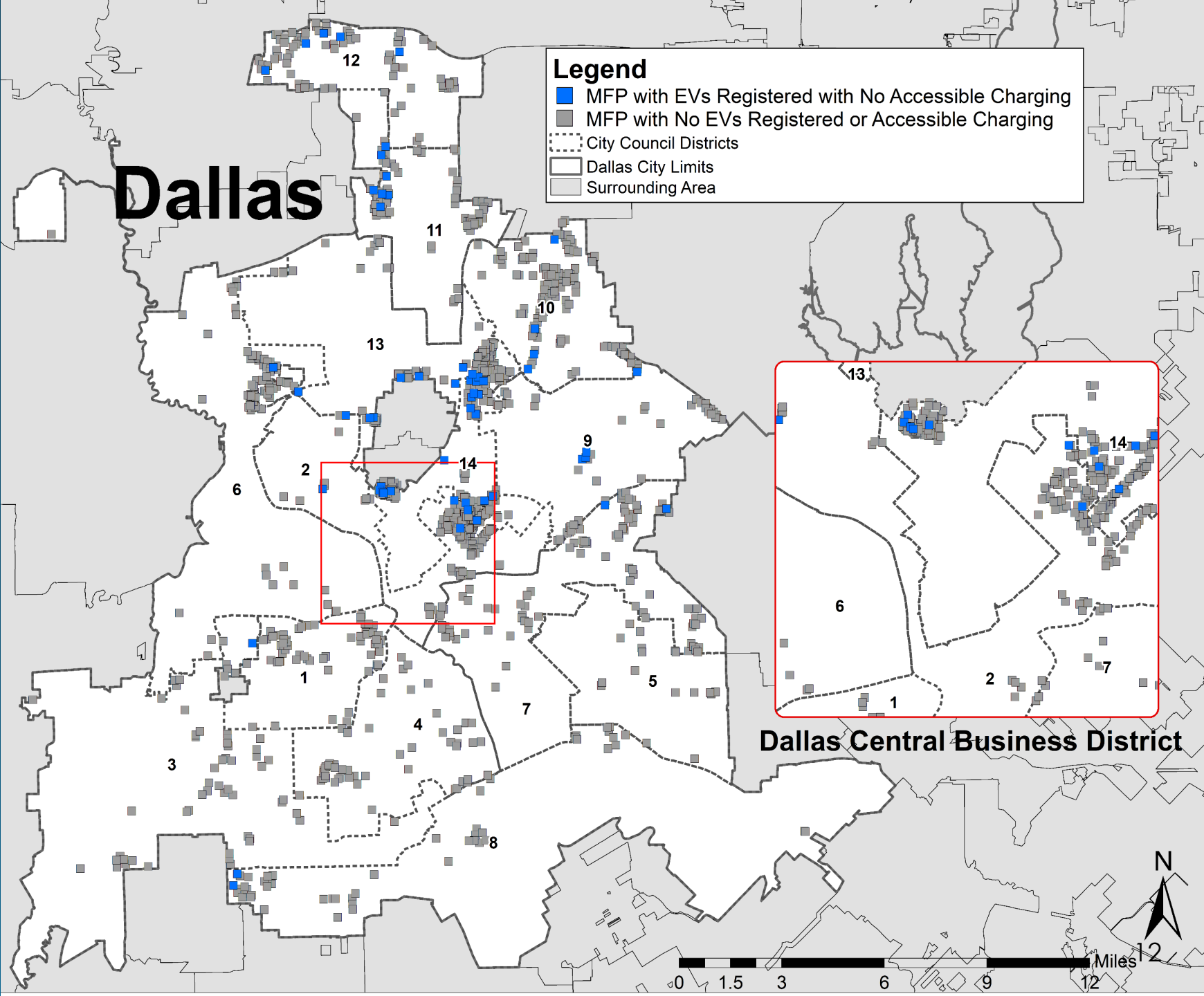
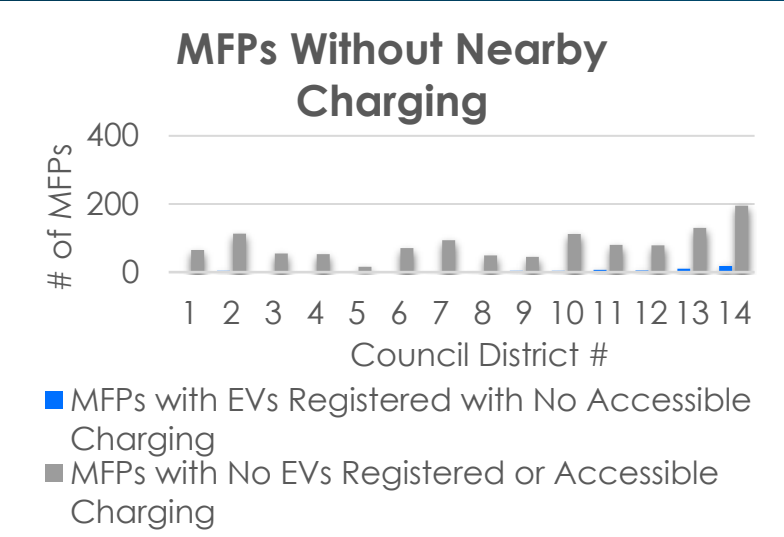


# EV OWNERSHIP AT MULTI-FAMILY PROPERTIES WITHOUT CHARGING NEARBY

**CITYWIDE**

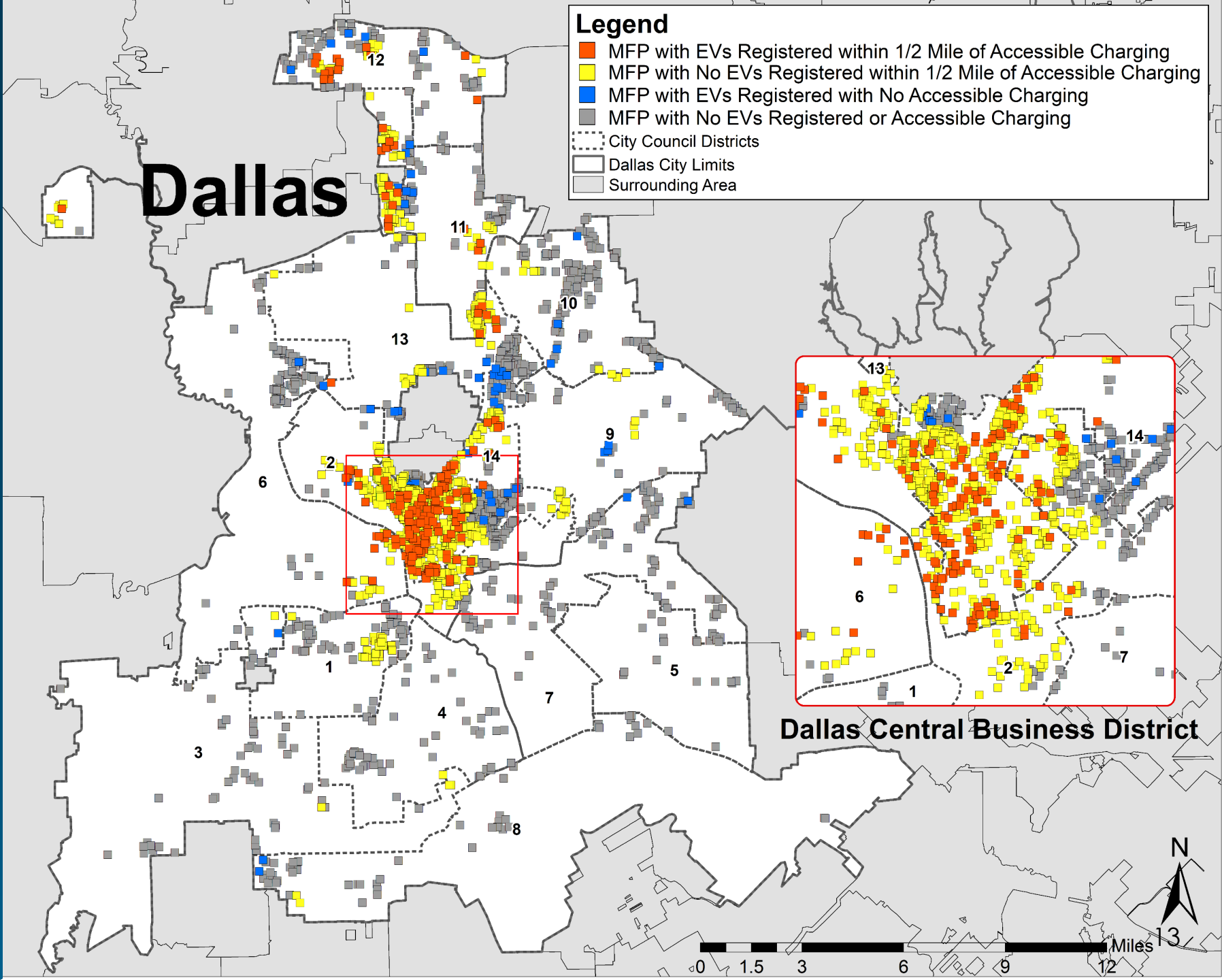
**MFPs with No Charging Stations Within ½ Mile**

**54%**





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

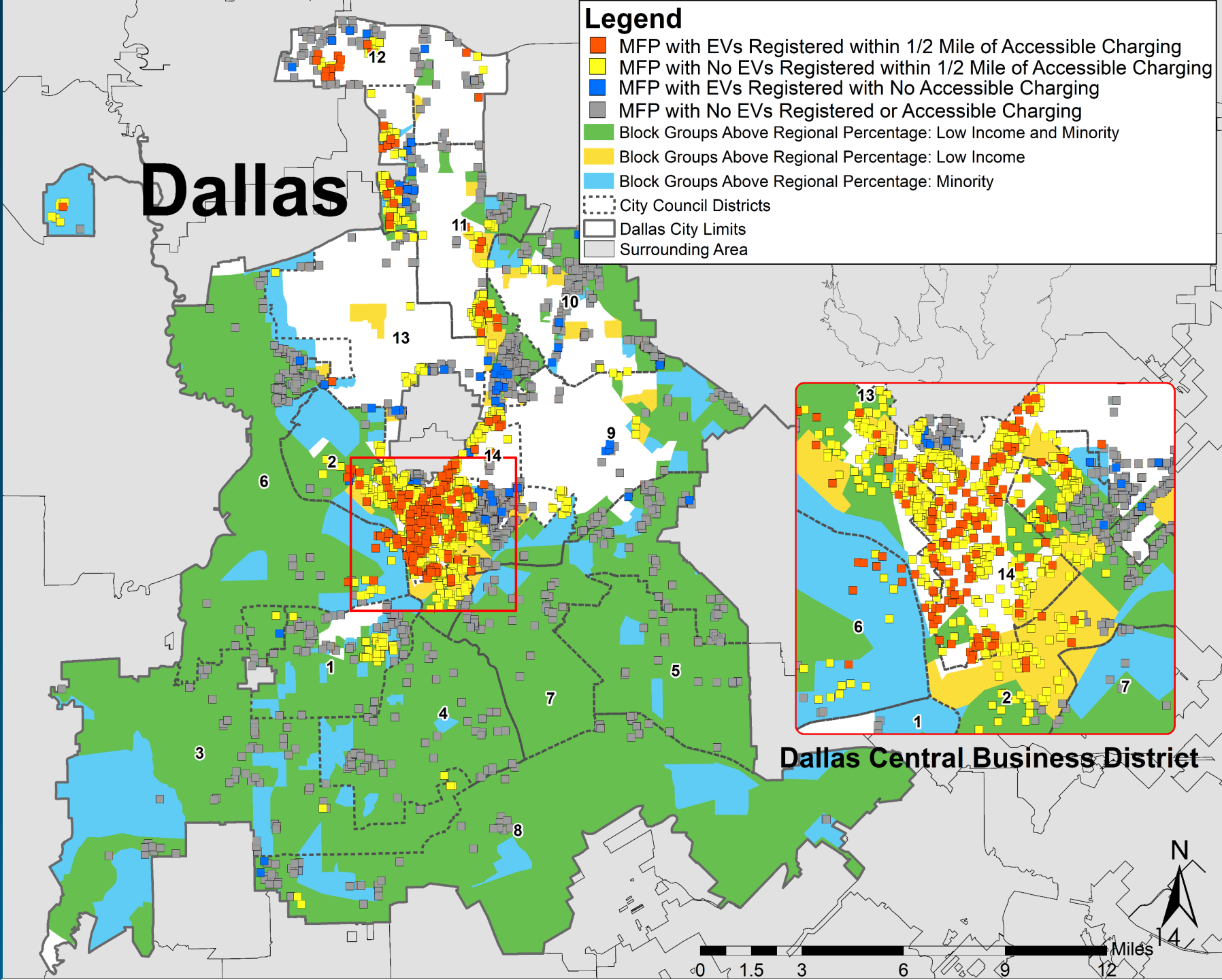
Data indicates a correlation  
between proximity to EV  
charging stations and EV  
registration.





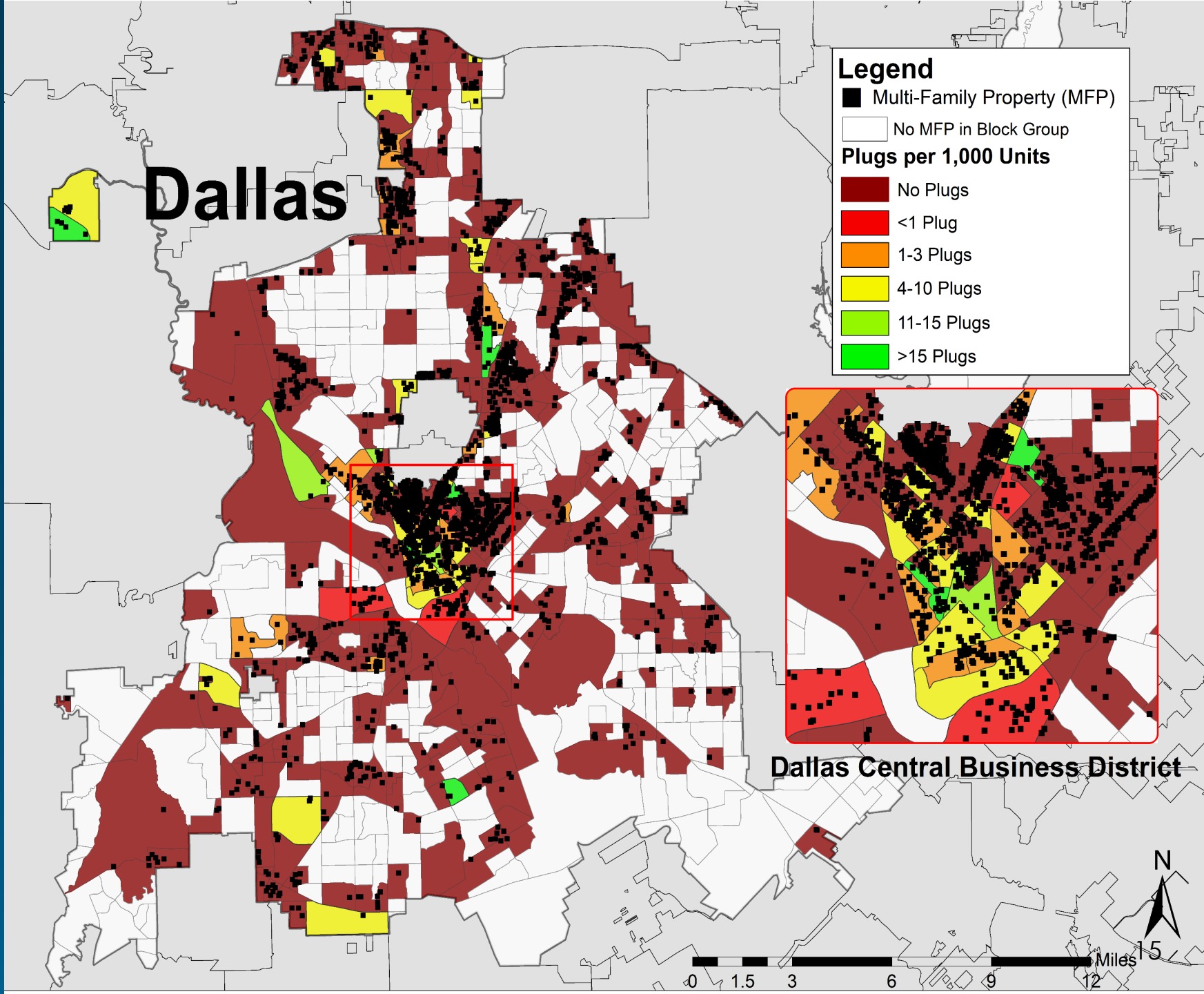
# MULTI-FAMILY PROPERTIES WITH AND WITHOUT CHARGING STATION ACCESS OR REGISTERED EVs

CITYWIDE	
	
MFPs Without Nearby Charging	MFPs in an EJ Area Without Nearby Charging
54%	67%



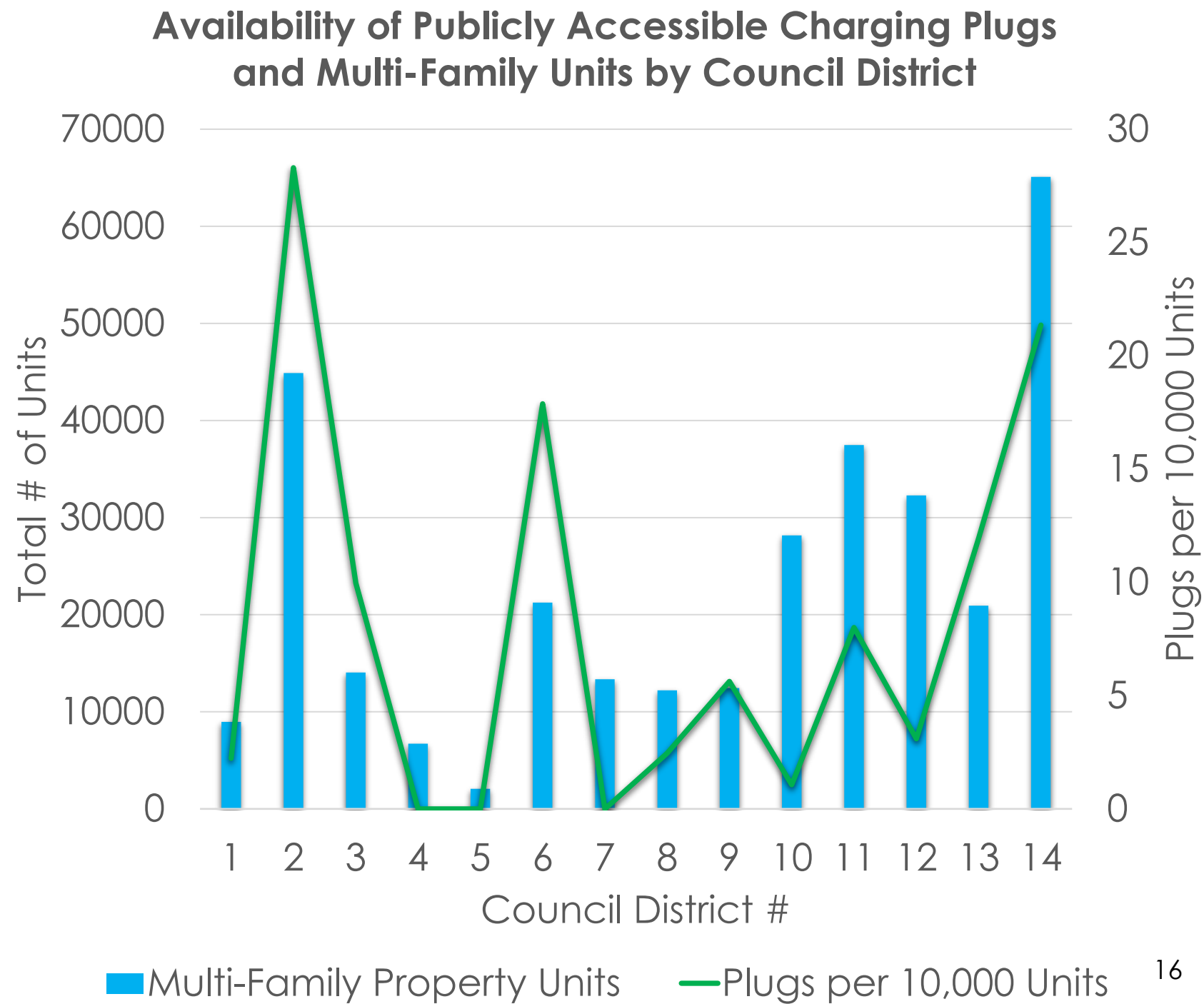


MULTI-FAMILY  
PROPERTIES AND  
AVAILABILITY OF  
PUBLIC ACCESS EV  
CHARGING BY  
BLOCK GROUP






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

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

Council District	Multi-Family Properties Without Nearby Charging		 Public Charging Plugs per 10,000 MFP Units
	 Overall	 In an EJ Area	
1	68%	67%	2.2
2	29%	35%	28.3
3	93%	93%	10.0
4	98%	98%	0.0
5	100%	100%	0.0
6	73%	71%	17.9
7	100%	100%	0.0
8	96%	96%	2.5
9	86%	88%	5.6
10	94%	96%	1.1
11	46%	51%	8.0
12	76%	100%	3.1
13	81%	92%	11.9
14	30%	43%	21.4

# PROPOSED NEXT STEPS FOR CITY OF DALLAS

## **Continue Existing City Efforts**

**Coordination with the Apartment Association of Greater Dallas, Direct Outreach to all Multi-Family Properties, Applications for New City-Owned Charging 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>	September 2021
EV Registration Data	<a href="#"><u>NCTCOG Analysis from NCTCOG EV Registration Dataset</u></a>	August 2020
Multi-Family Properties	<a href="#"><u>NCTCOG Development Monitoring Program Dataset</u></a>	August 2021
Environmental Justice Index	<a href="#"><u>NCTCOG Environmental Justice Data</u></a>	December 2020

## DATA LIMITATIONS

EV registration analysis was pulled at a single date. Need to replicate efforts to get updated list of EVs registered at different multi-family properties.

# CONTACT

**Lori Clark**

Program Manager,  
DFW Clean Cities Coordinator  
NCTCOG  
[lclark@nctcog.org](mailto:lclark@nctcog.org)



Dallas-Fort Worth  
CLEAN CITIES

[dfwcleancities.org](http://dfwcleancities.org)

**Bailey Muller**

Senior Planner  
NCTCOG  
[bmuller@nctcog.org](mailto:bmuller@nctcog.org)



North Central Texas  
Council of Governments