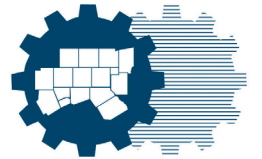


Analysis of Electric Vehicle Charging Infrastructure in the City of Dallas



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)¹

37,832 EVs Regionwide

7,371 in City of Dallas

49.6% Average Annual Growth in EV
Registration 2015-2021

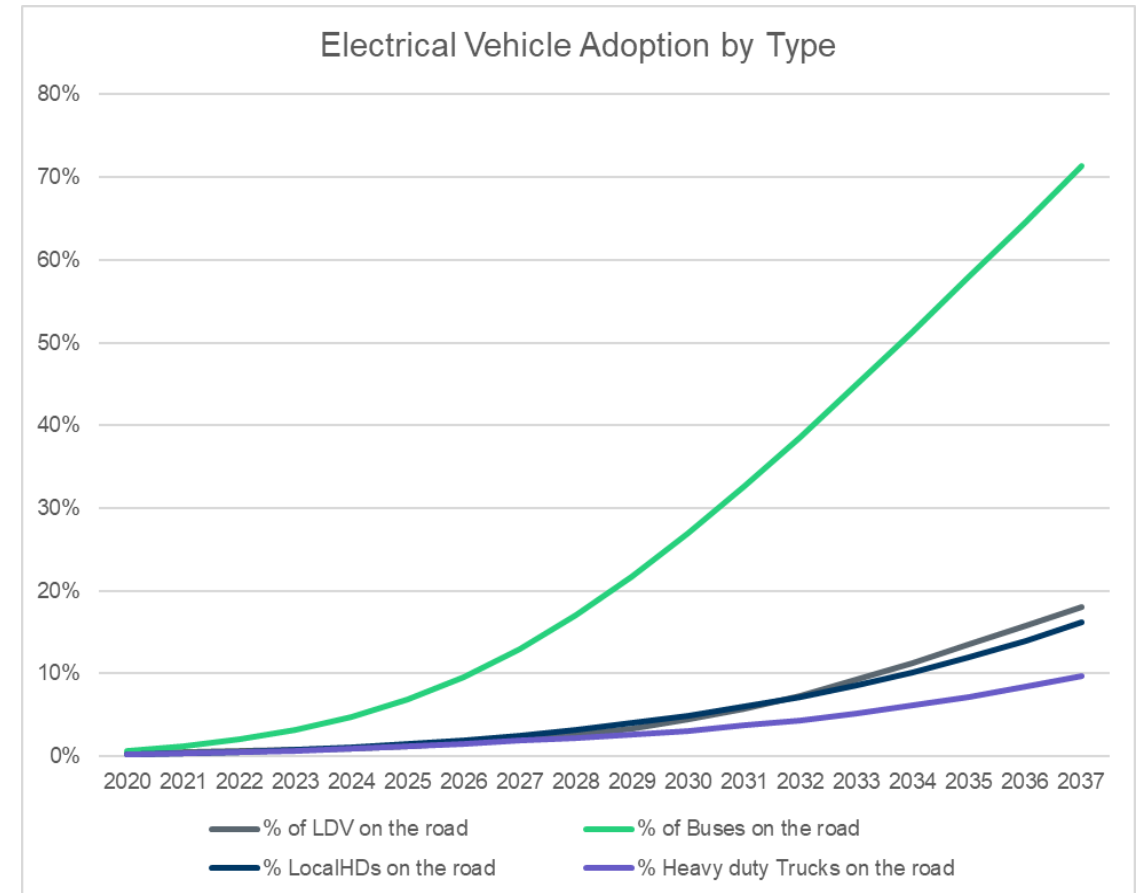
National Trends

EV Fleet Has Doubled in Past 4 Years²

EVs >5% of all New Car Sales in 3rd Quarter
2021³

Bloomberg New Energy Finance Suggests
EVs ~20-30% of New Sales by 2025⁴

Executive Order Aims for Half of All New
Vehicles Sold in 2030 be Zero-Emission⁵



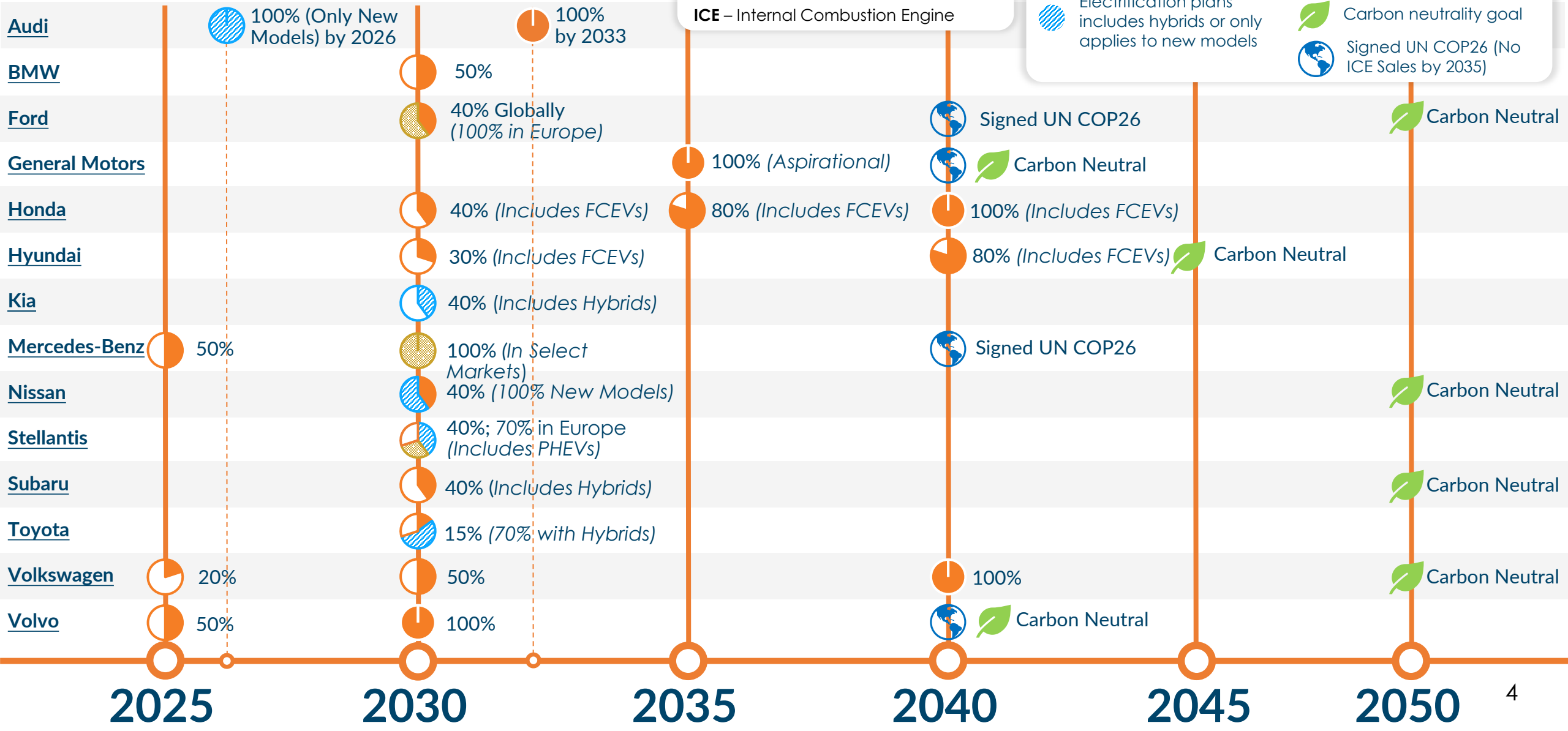
Source: Electric Reliability Council of Texas (ERCOT) Long-Term System Assessment, <https://www.ercot.com/gridinfo/planning>. Uses an adjusted (delayed) forecast from Bloomberg New Energy Finance Electric Vehicle Outlook (<https://about.bnef.com/electric-vehicle-outlook/>).

¹NCTCOG EV Registration Data, based on DMV Registration (www.dfwcleancities.org/evnt); ²EPA Automotive Trends Report (<https://www.epa.gov/automotive-trends>); ³Atlas EV Hub (<https://www.atlasevhub.com/tools-resources/quarterly-review-of-ev-market/>); ⁴Zero-Emission Vehicles Factbook (https://assets.bbhub.io/professional/sites/24/BNEF-Zero-Emission-Vehicles-Factbook_FINAL.pdf); ⁵White 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

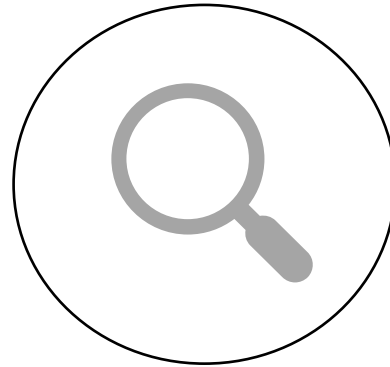
*This list is not comprehensive, and manufacturers are not endorsed by NCTCOG



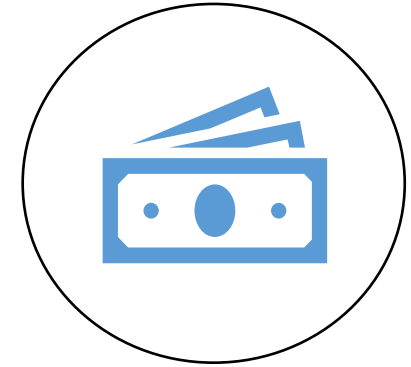
ANALYSIS GOALS



Assess Resident
Proximity to Public-
Access EV Charging
Stations



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



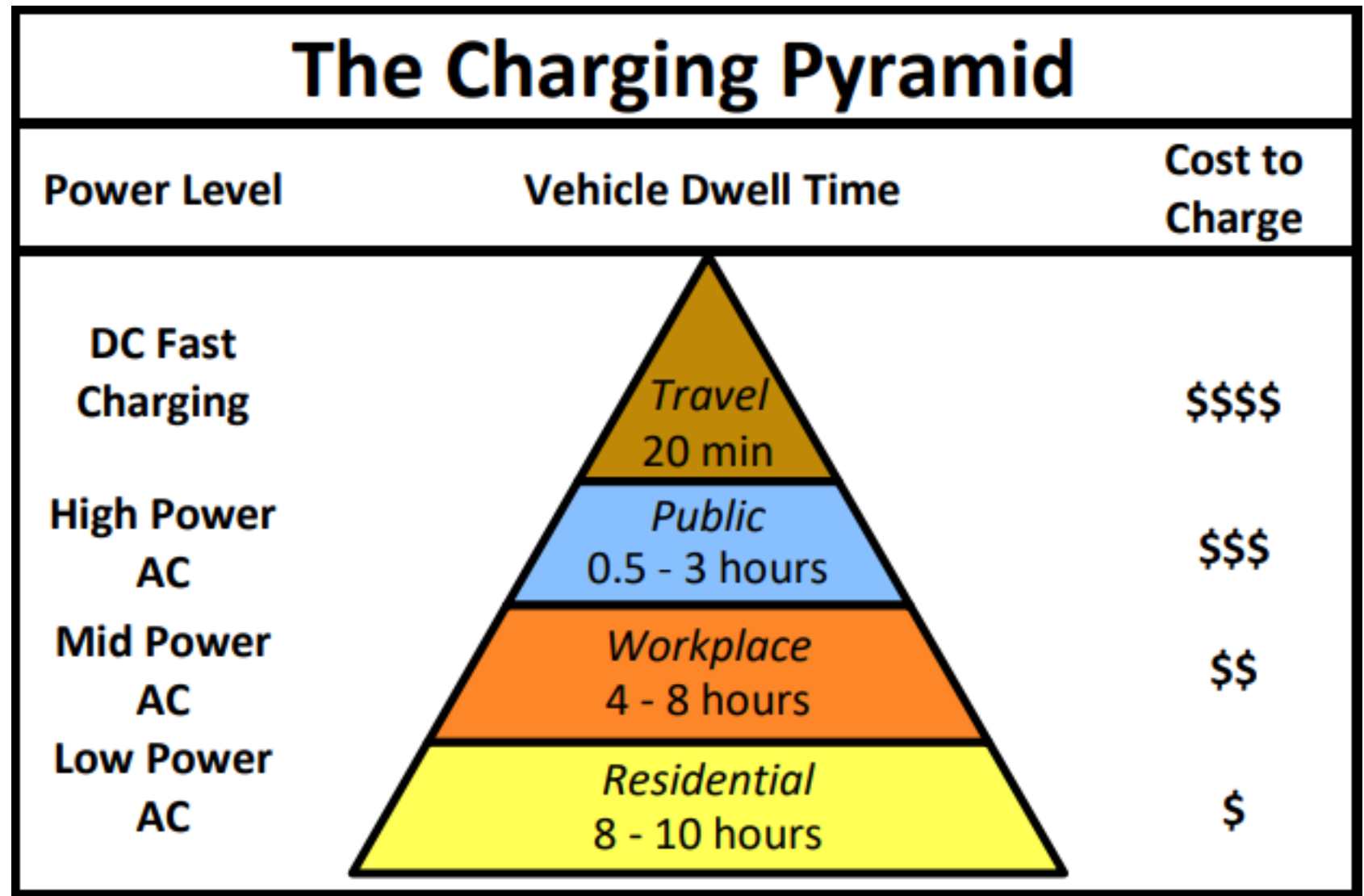
Promote Existing
Funding
Opportunities for New
EV Charging Stations

**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



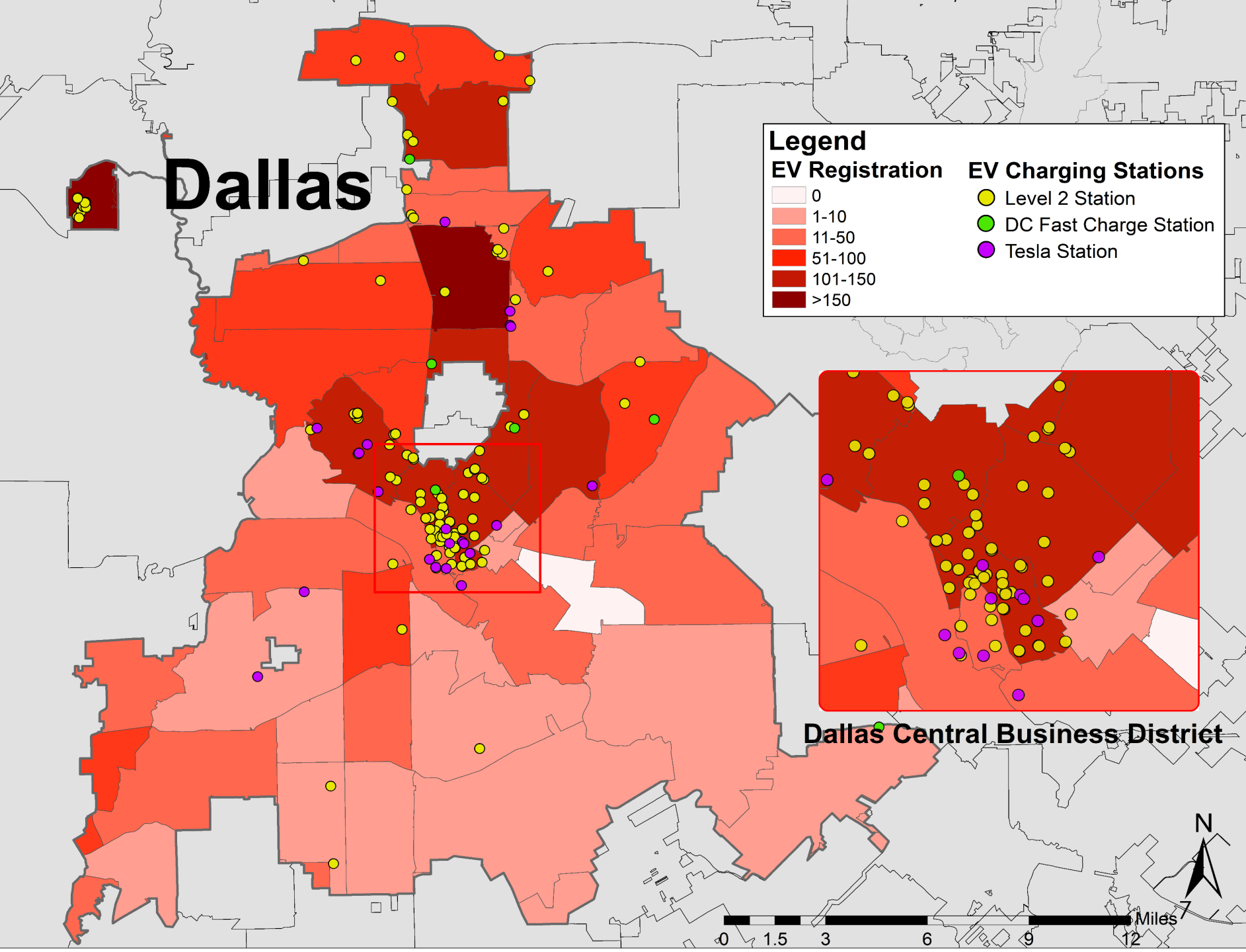
Based on Location Type and Average Time Spent, Different Charging Levels May be Better Suited by Site than Others

EXISTING EV REGISTRATION BY ZIP CODE & PUBLIC EV CHARGING STATIONS

176

Existing Publicly
Accessible EV
Charging Stations in
the City of Dallas

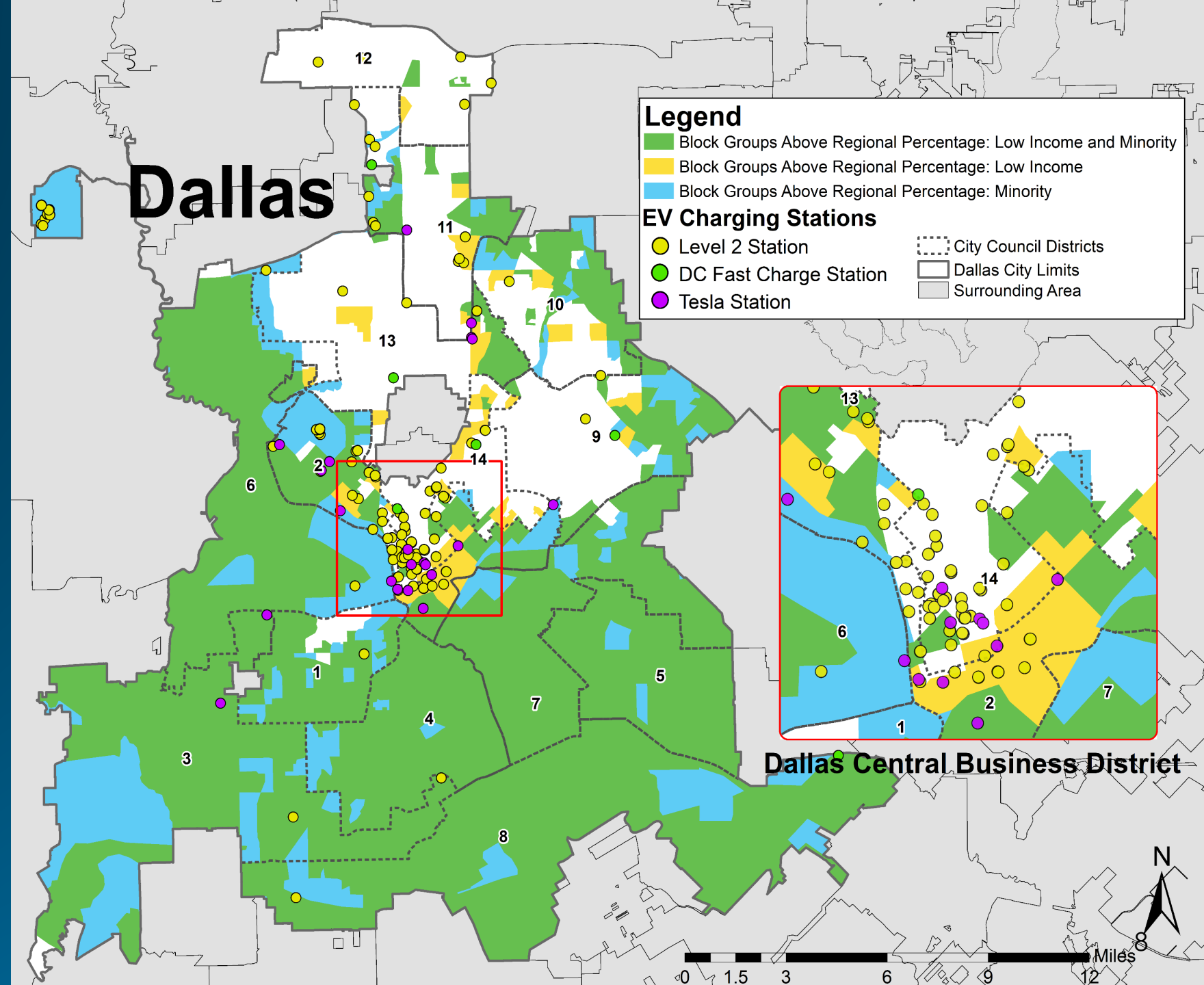
Data indicates a
correlation between
proximity to EV
charging stations and
EV registration.



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

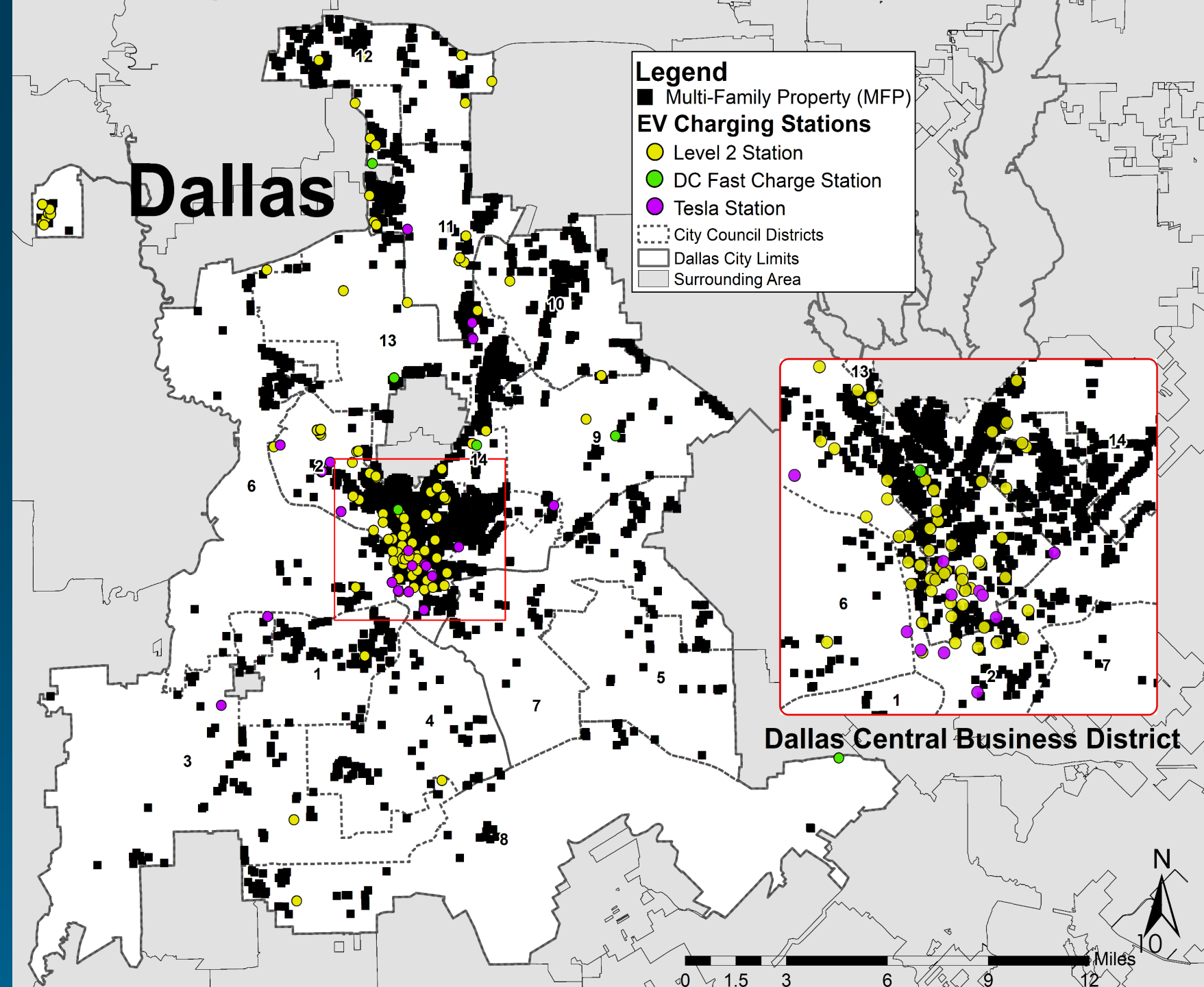
↳ Most multi-family residents do not have the ability to charge their car at home

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



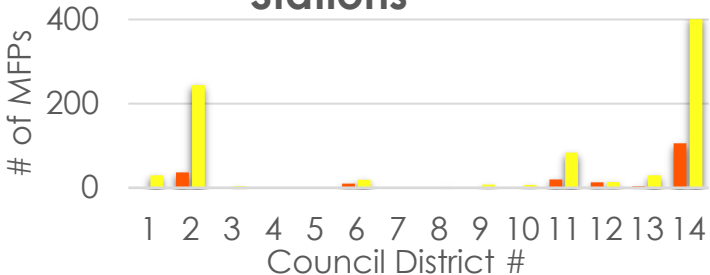
EV OWNERSHIP AT MULTI-FAMILY PROPERTIES NEAR EV CHARGING STATIONS

CITYWIDE

MFPs with Access to Charging within 1/2 Mile

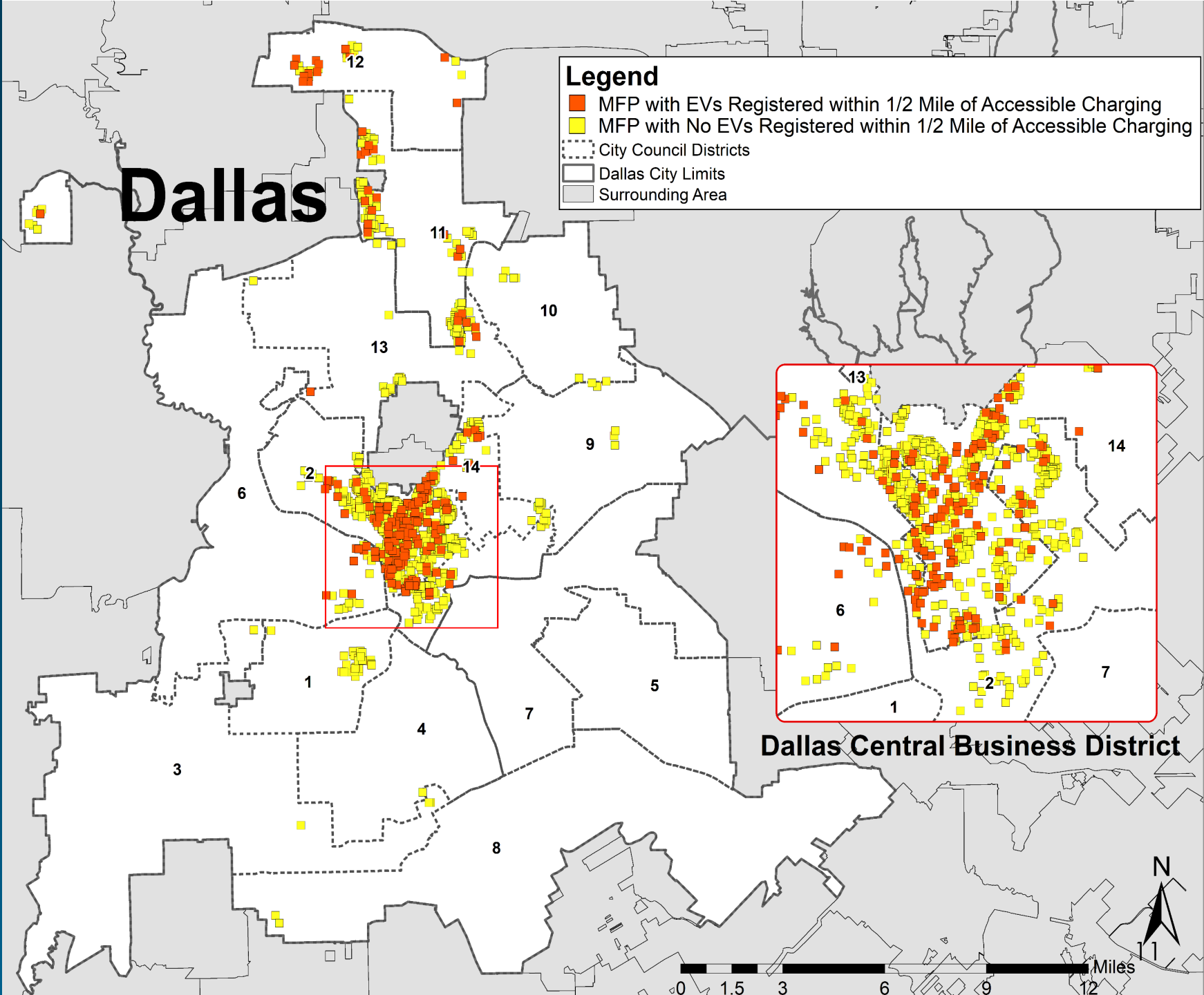
46%

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](#)

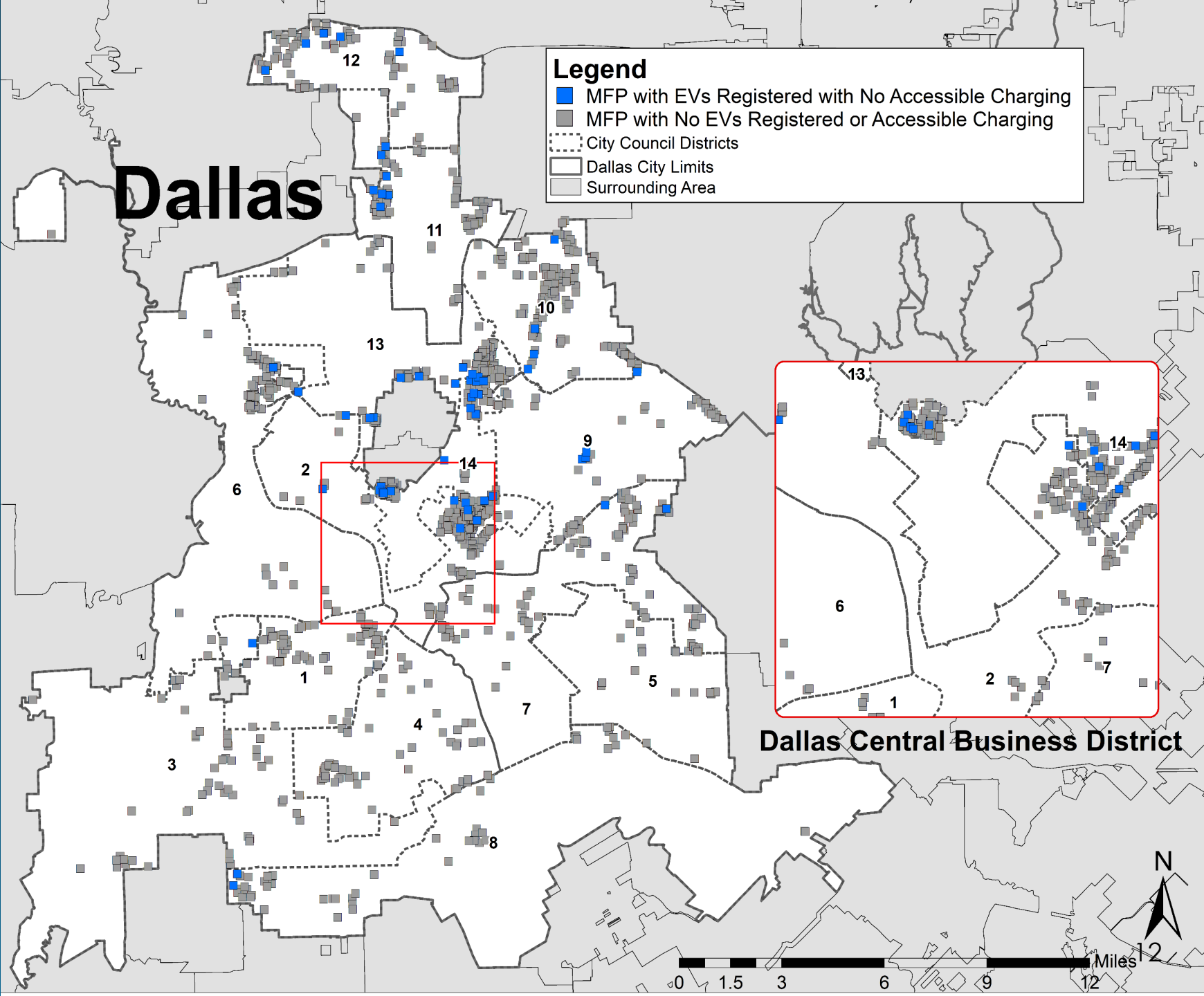
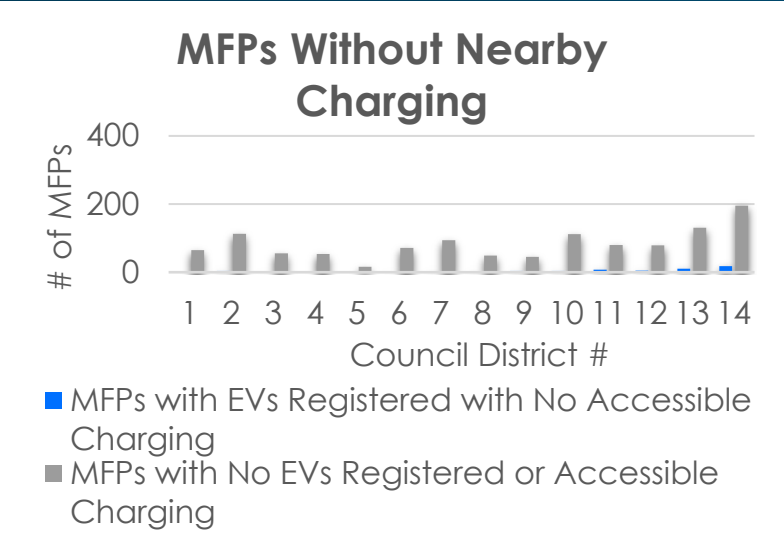


EV OWNERSHIP AT MULTI-FAMILY PROPERTIES WITHOUT CHARGING NEARBY

CITYWIDE

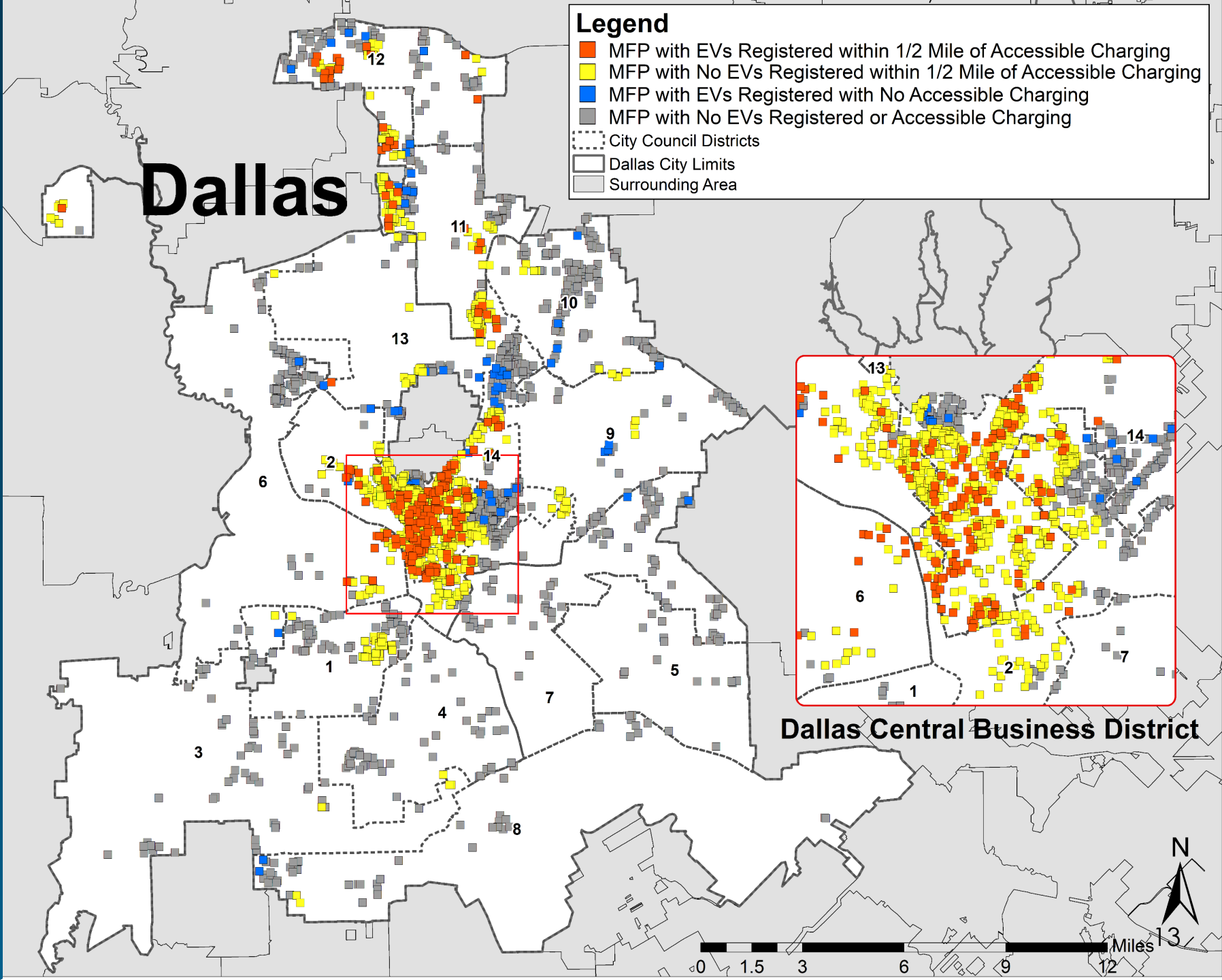
MFPs with No Charging Stations Within ½ Mile

54%





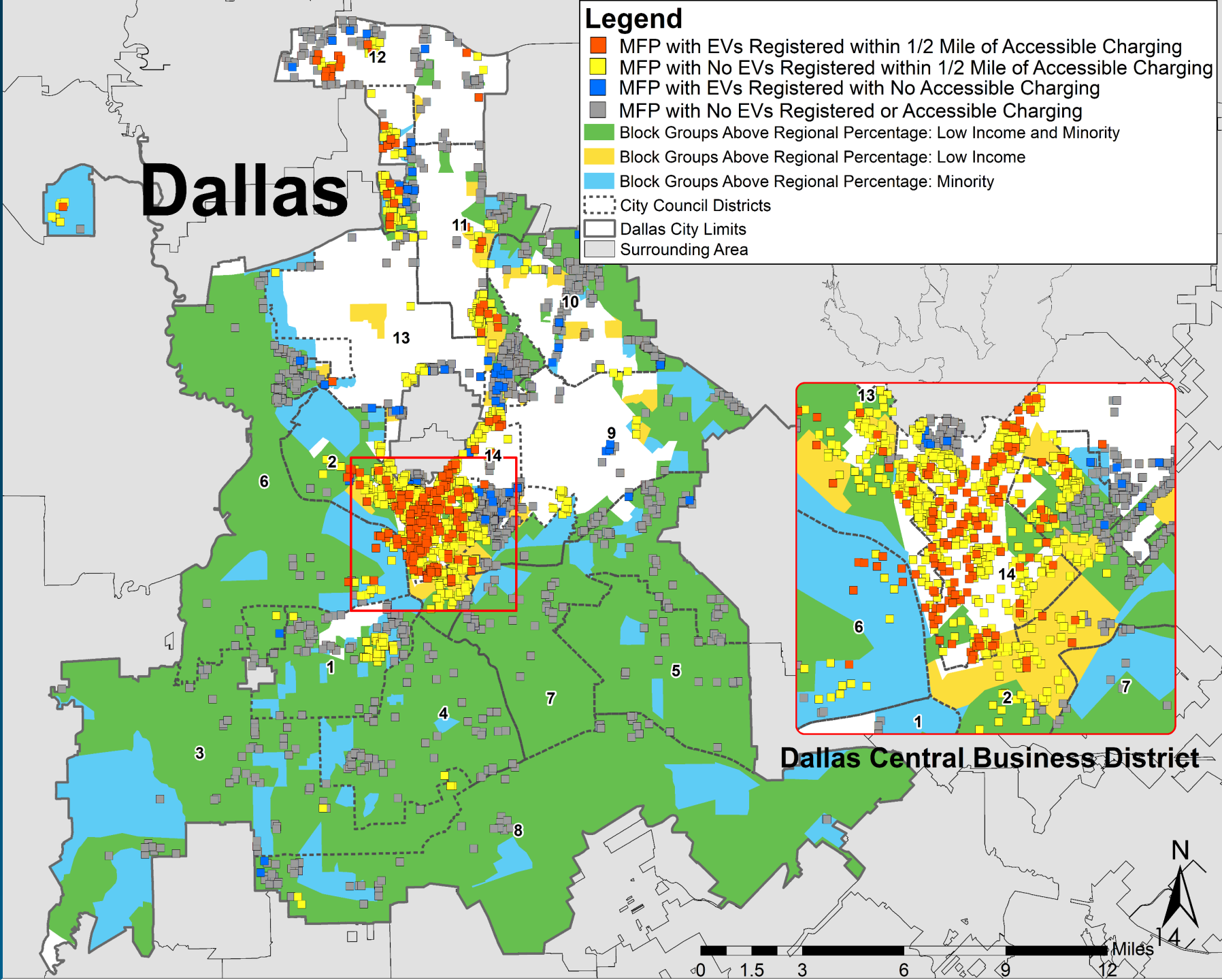
MULTI-FAMILY PROPERTIES WITH AND WITHOUT CHARGING STATIONS NEARBY, OR WITH REGISTERED EVs

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

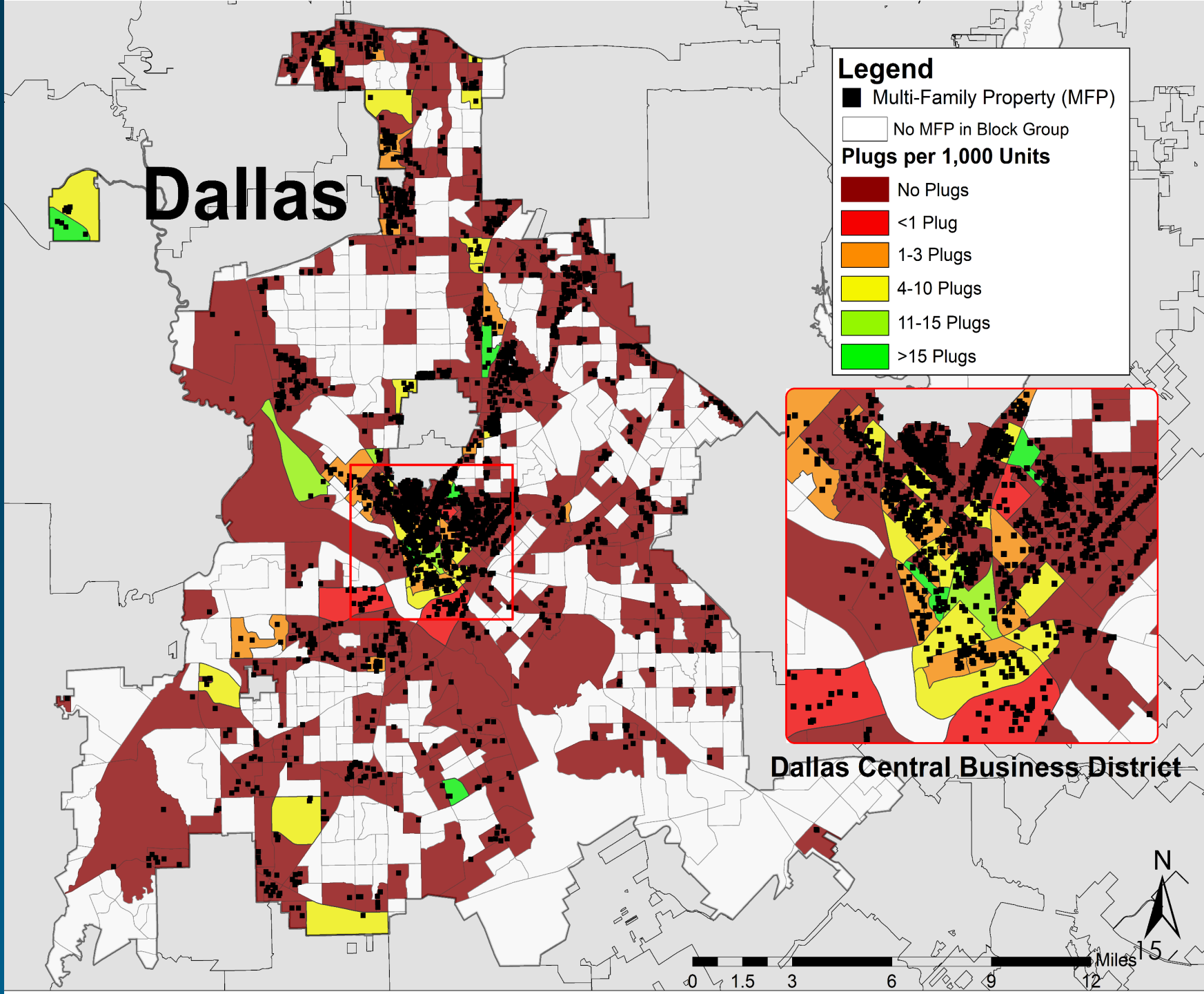


MULTI-FAMILY PROPERTIES WITH AND WITHOUT CHARGING STATION ACCESS OR REGISTERED EVs

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

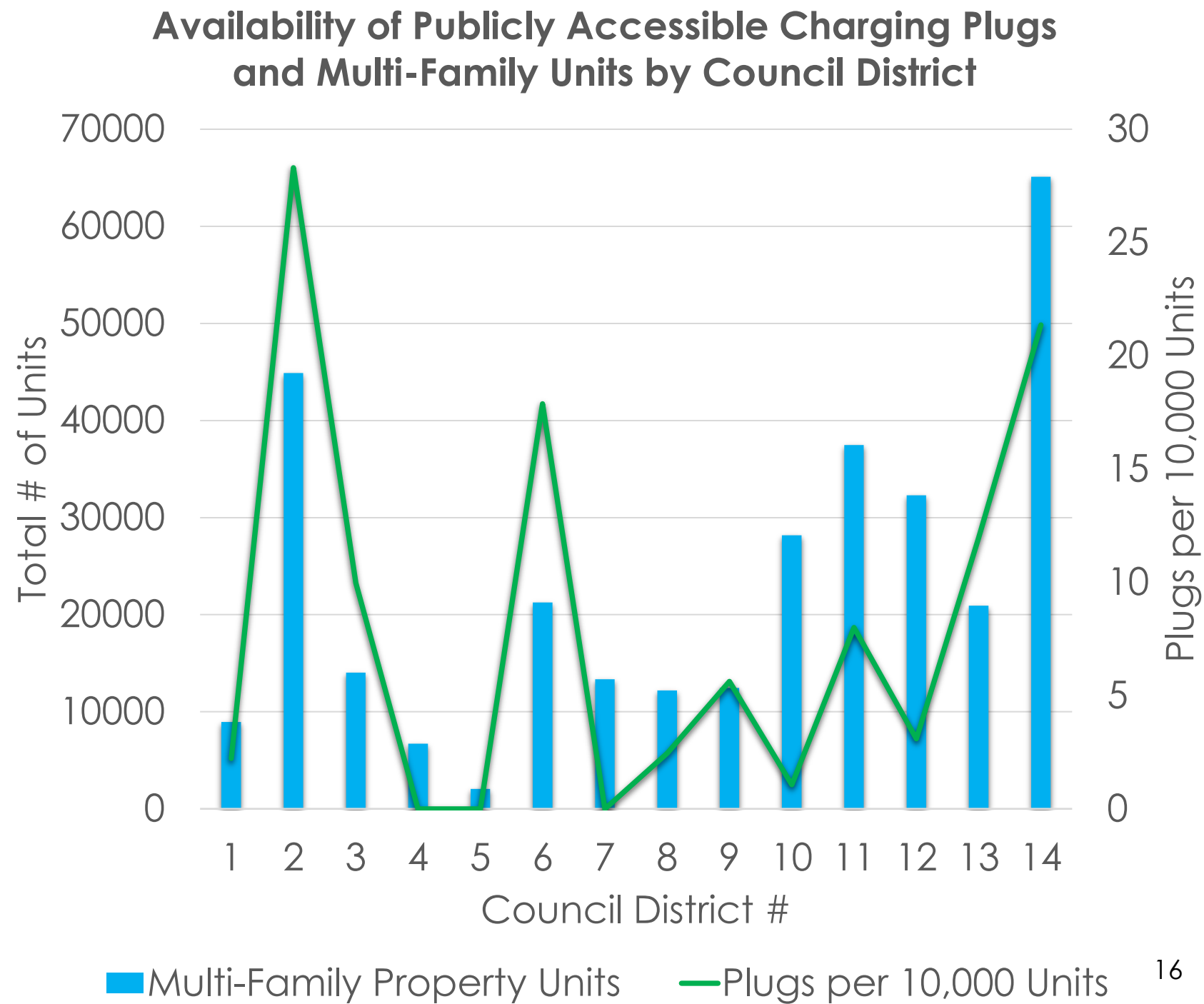


MULTI-FAMILY PROPERTIES AND AVAILABILITY OF PUBLIC ACCESS EV CHARGING BY BLOCK GROUP






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	<u>Department of Energy Alternative Fuel Station Locator</u>	September 2021
EV Registration Data	<u>NCTCOG Analysis from NCTCOG EV Registration Dataset</u>	August 2020
Multi-Family Properties	<u>NCTCOG Development Monitoring Program Dataset</u>	August 2021
Environmental Justice Index	<u>NCTCOG Environmental Justice Data</u>	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.

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