NCTCOG Freight Planning Program

Freight Land Use Analysis

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Key Terms (cont.)

Good Neighbor Strategies –

Operational or physical characteristics that aim to integrate freight facilities into their surrounding land uses, with a focus on preventing or remediating land use conflicts.

Context-Sensitive Solutions –

an approach to the design of transportation infrastructure that attempts to conform roadway features to the scale, functionality, and community identity of the surrounding built environment.

Freight Land Use Typology

Describes 5 different freight land use types that exist in the NCTCOG region, and the compatibility concerns unique to each type:

- Warehousing & Distribution
- Manufacturing & Processing
- Air Cargo Transportation
- Intermodal Facilities
- Pipelines & Public Works

Analytical Methods

Land Use Conflict Analysis

Categorized and scored a sample size of freight land use areas into three categories:

- Good Neighbor Sites
- Areas of Concern
- Land Use Conflicts

Environmental Justice Analysis

Examined the potential for interactions between freight facilities and communities protected environmental justice laws and policies.

Analytical Methods (cont.)

Freight Facility Analysis

Analyzed specific qualities of freight facilities throughout the region, such as age, square footage, type, and potential for conflict with other land use types.

FOD Dispersion Analysis

Analyzed the tendency of freight facilities to disappear in the urban core and new freight development to occur farther from major central business districts

Freight Facility Analysis

Land Use Conflicts

- Present immediate threats to:
  - Safety
  - Quality of Life
  - The Environment
  - Freight Network Performance
- Remediation is required in the near term
- Degrades quality of the built environment

Areas of Concern

- Area-focused rather than facility-specific
- Immediate remediation not necessary
- Has the potential to become a Land Use Conflict over time

Freight Land Use Conflict Scoring Criteria	
Good Neighbor Strategies	**Railroad Infrastructure**
Sidewalks & Bicycle/Pedestrian Paths	Median Barriers
Raised Berms	Quad Gates
Supplemental Vegetation	Quiet Zone
Sound Walls	Offset from Sensitive Land Use
High-Quality Fencing	Rail-Related Connectivity Issues
Buffer Zones	Buffers Between Sensitive Land Use & Railroads
Site Design	**Roadway Infrastructure**
Loading Docks	Loading &Unloading Zones
Lighting	Truck-Related Roadway Damage
Vegetation & Fencing	Access Via Non-residential Road
Staging Areas	Adequate Truck Parking
Freight-Oriented Development	
FOD Encroachment	
Pipeline Setbacks	
Environmental Justice Concerns	

Importance of Freight Land Use

Increasing Urbanization & Globalization

New Urbanism & Smart Growth

Consumer Trends

Sustainability

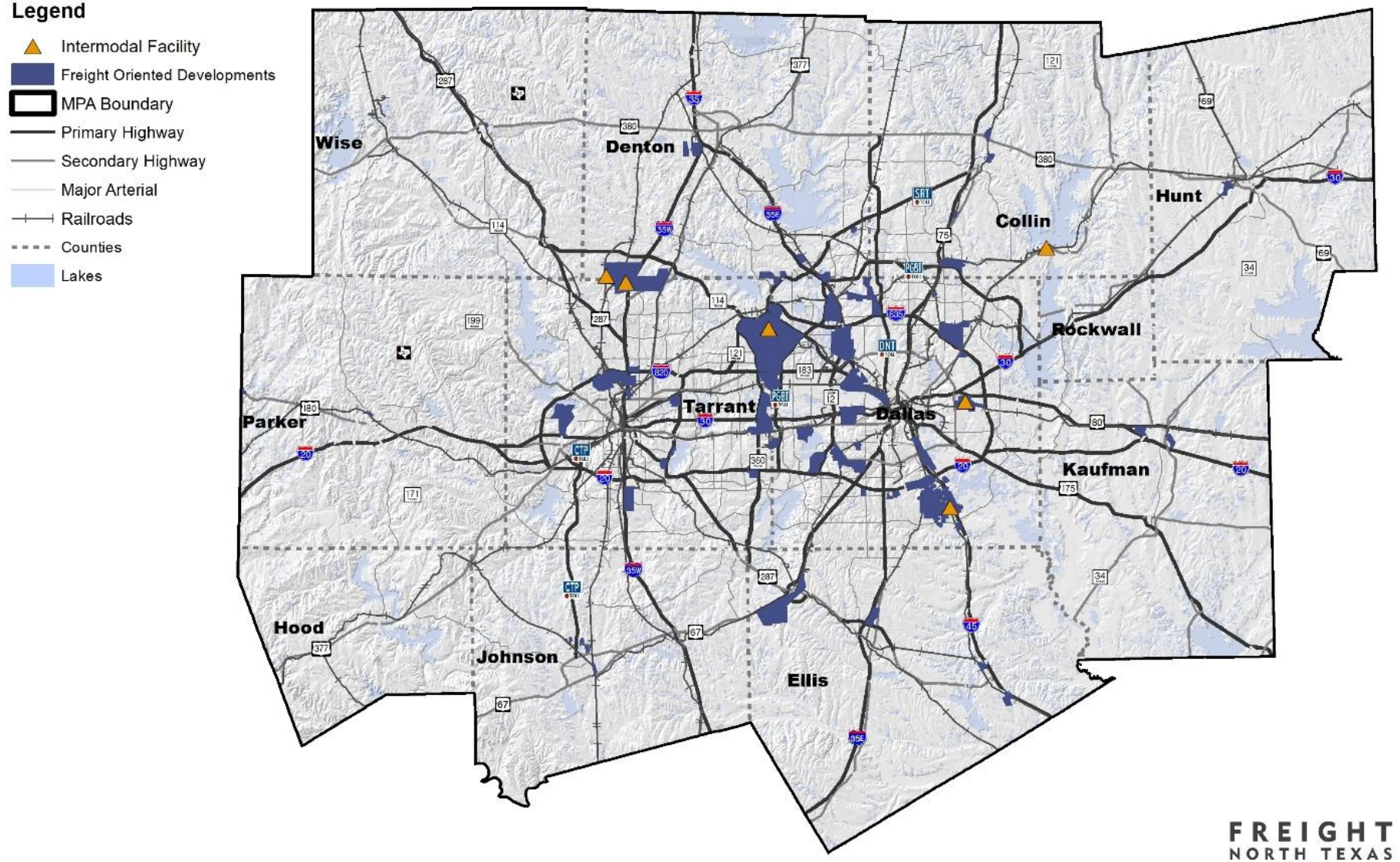
Figure 3. 2030 and 2045 County Control Totals – Household Population

County	2020 Census	2030	2045	2020 – 2045 Change
Collin	1,057,649	1,294,904	1,788,851	731,202
Dallas	2,581,853	3,010,733	3,533,305	951,452
Denton	897,070	1,099,640	1,516,874	619,804
Ellis	190,652	230,103	318,214	127,562
Hood	60,702	73,050	95,154	34,452
Hunt	96,972	113,190	143,594	46,622
Johnson	176,561	203,793	258,100	81,539
Kaufman	143,800	157,257	209,395	65,595
Parker	146,840	173,427	234,655	87,815
Rockwall	107,130	123,161	61,686	54,556
Tarrant	2,083,512	2,468,156	3,047,774	964,262
Wise	67,826	81,225	103,976	36,150
MPA	***7,610,567***	***9,028,639***	***11,411,579***	***3,801,012***

Elements of Freight Facility Dispersion

- Distance from geographic center of both core cities – Dallas and Fort Worth
- Average distance from mean geographic center of all freight developments
- Change in average distance from CBD/geographic center
- Average amount of freight facility square footage added per year

North Central Texas Regional Freight Facilities



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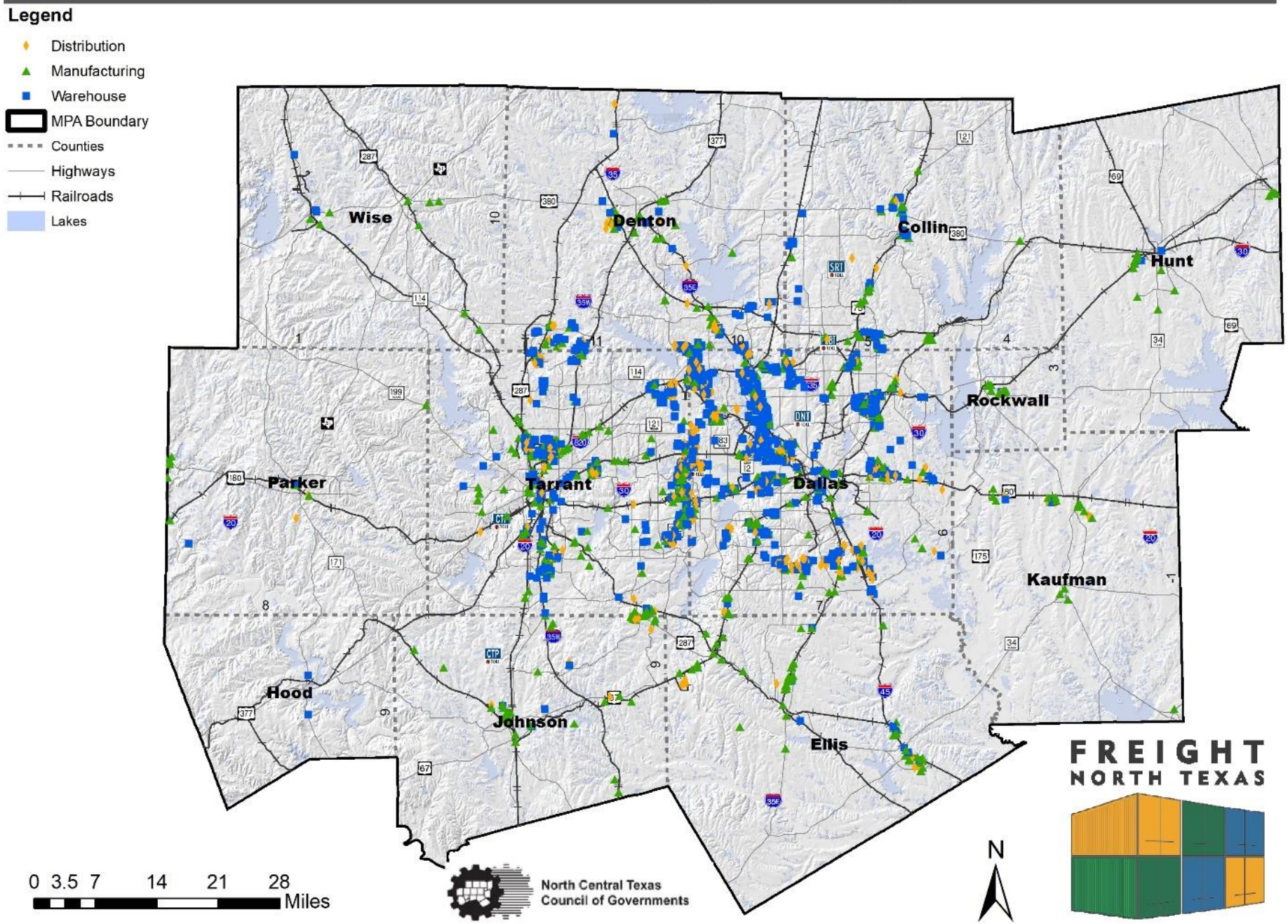
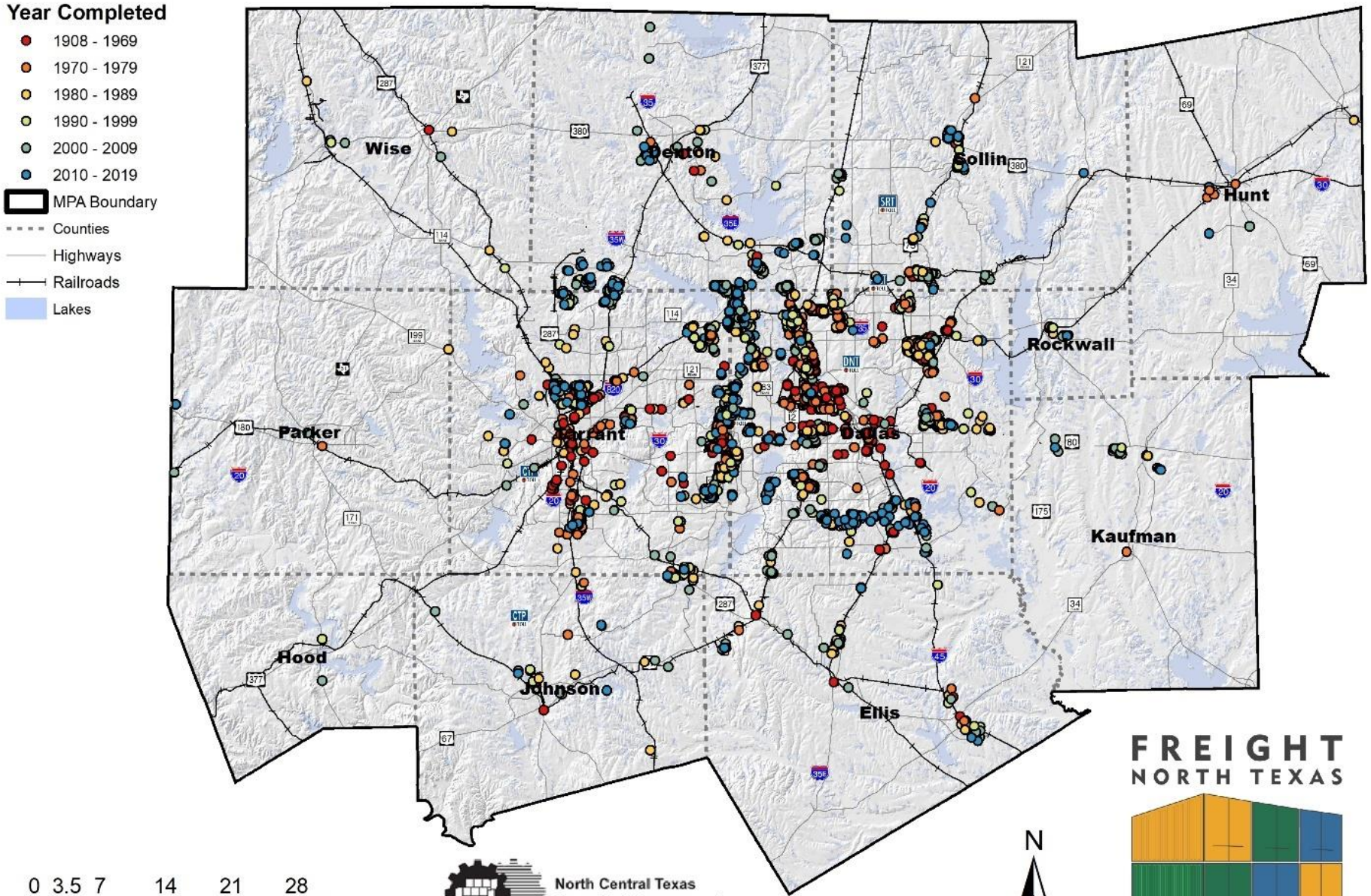
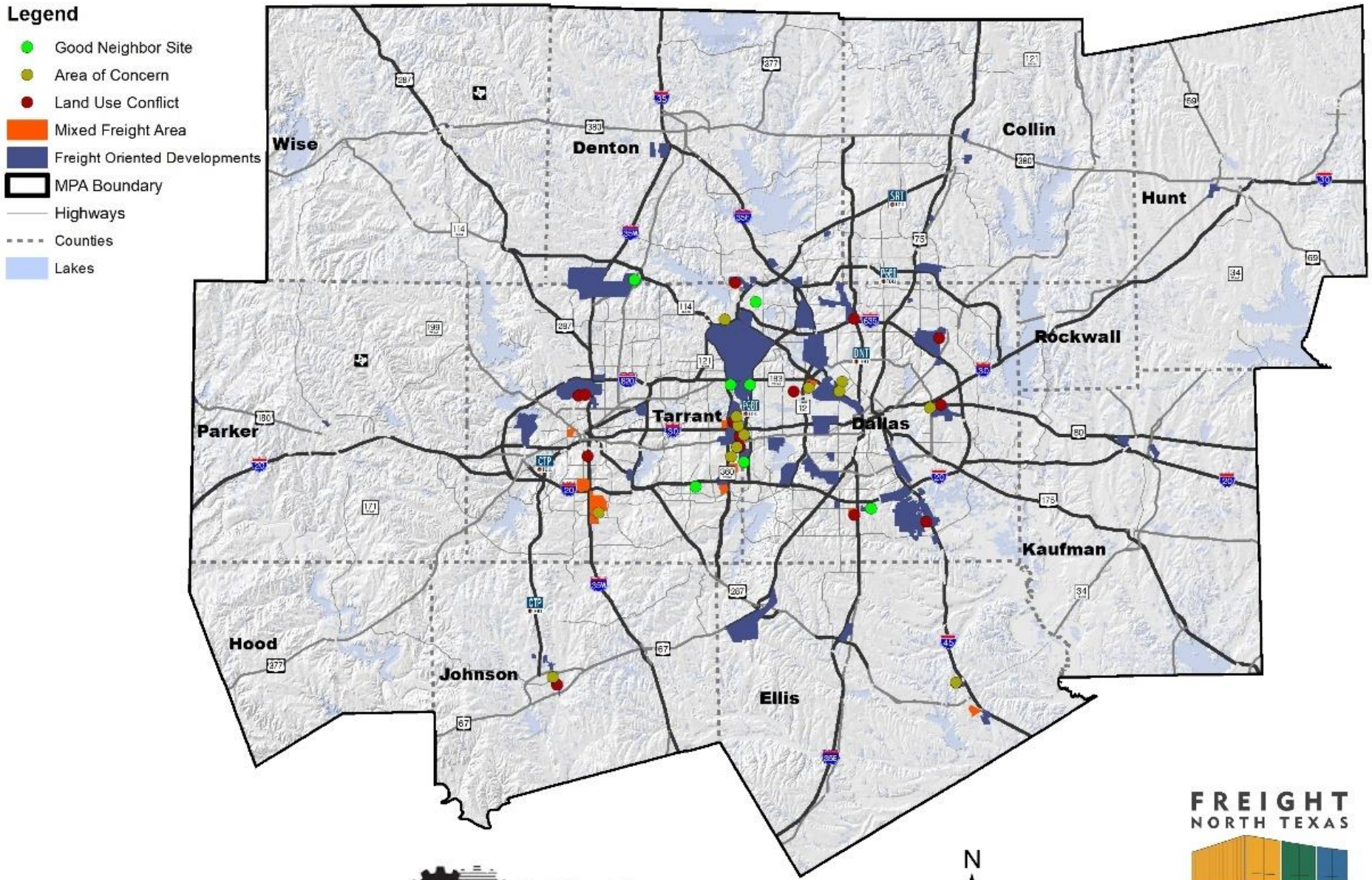
North Central Texas - Freight Facility Locations



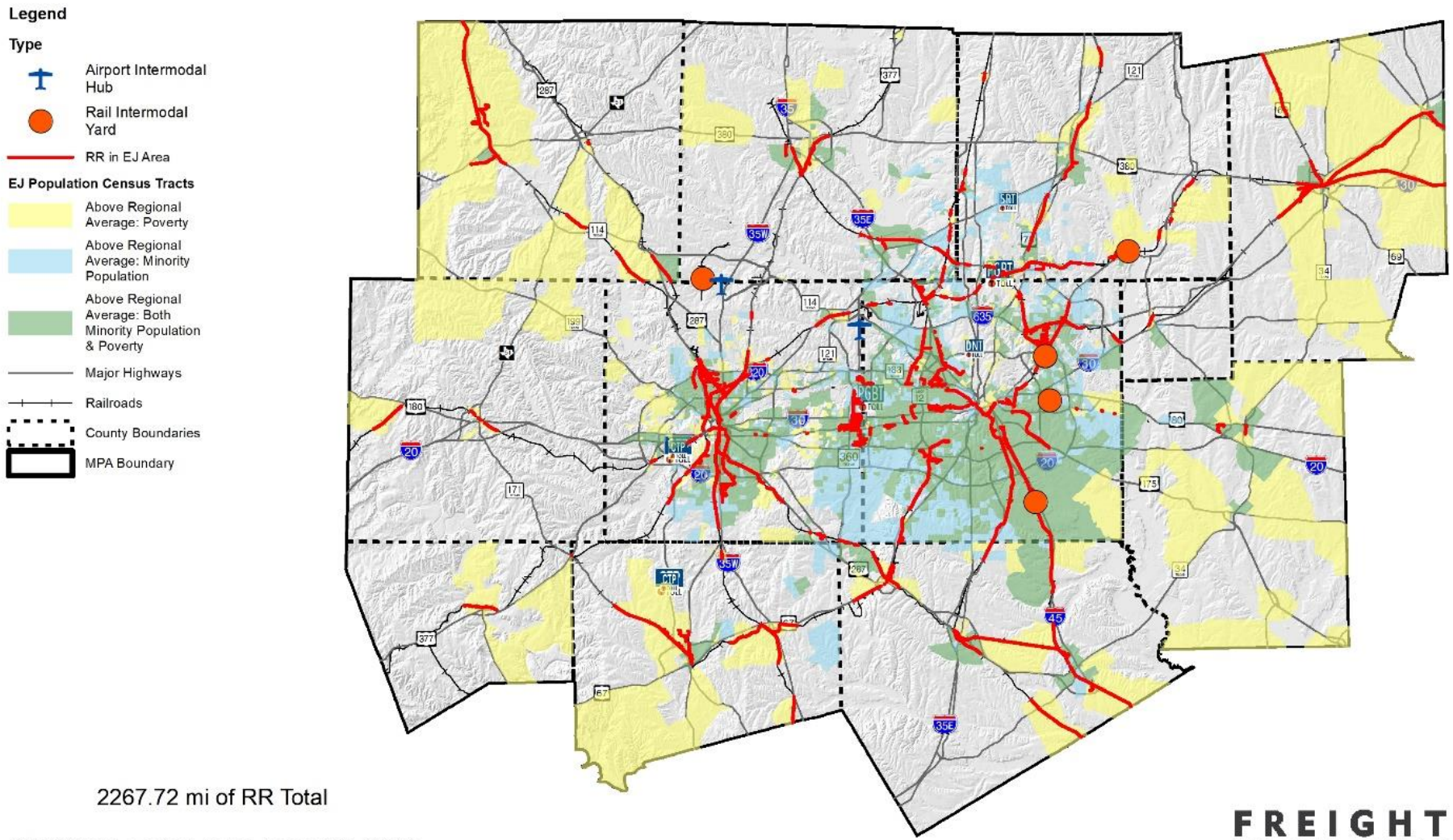
North Central Texas - Freight Facility Age



Freight Land Use Conflict Analysis



Freight Rail In EJ Areas



2267.72 mi of RR Total

997.67 mi Located in EJ Areas (43.99%)

0 5 10 20 30 40 Miles

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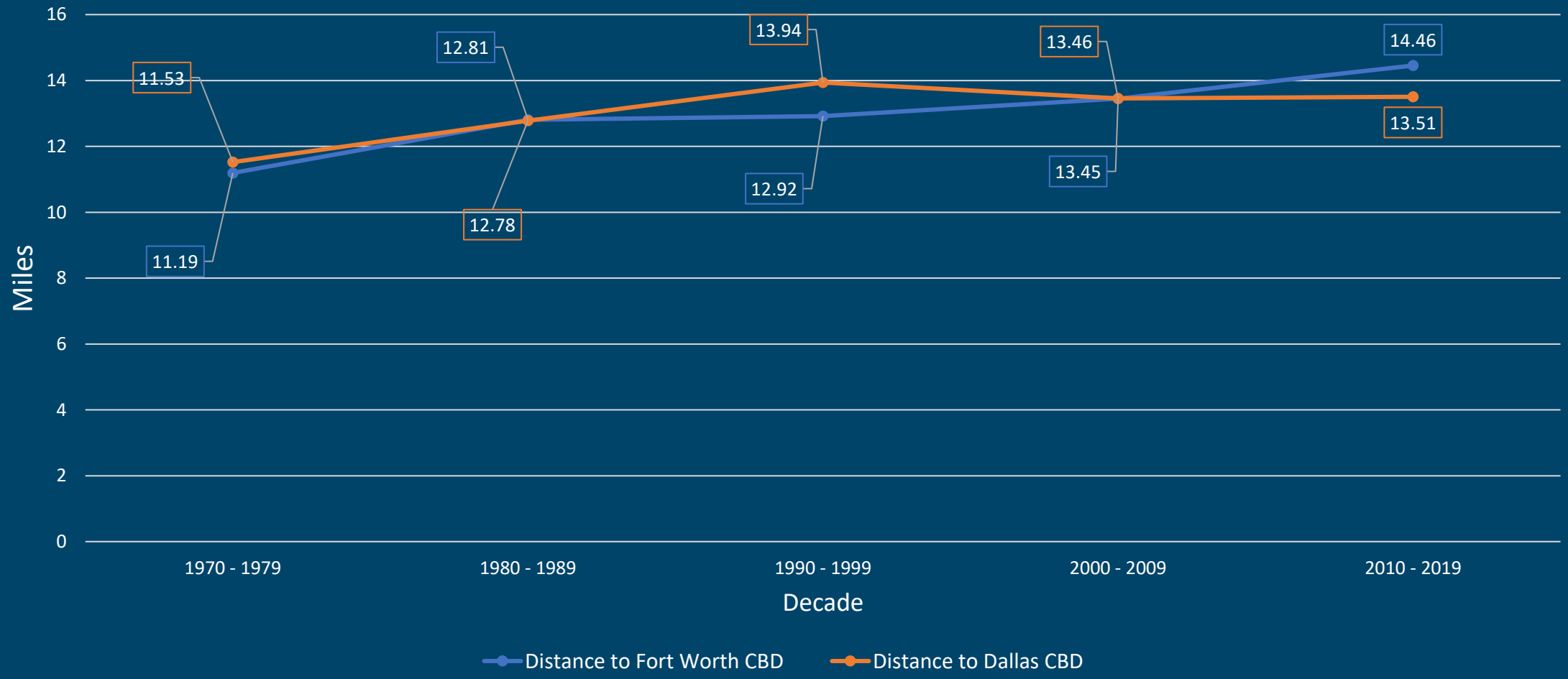
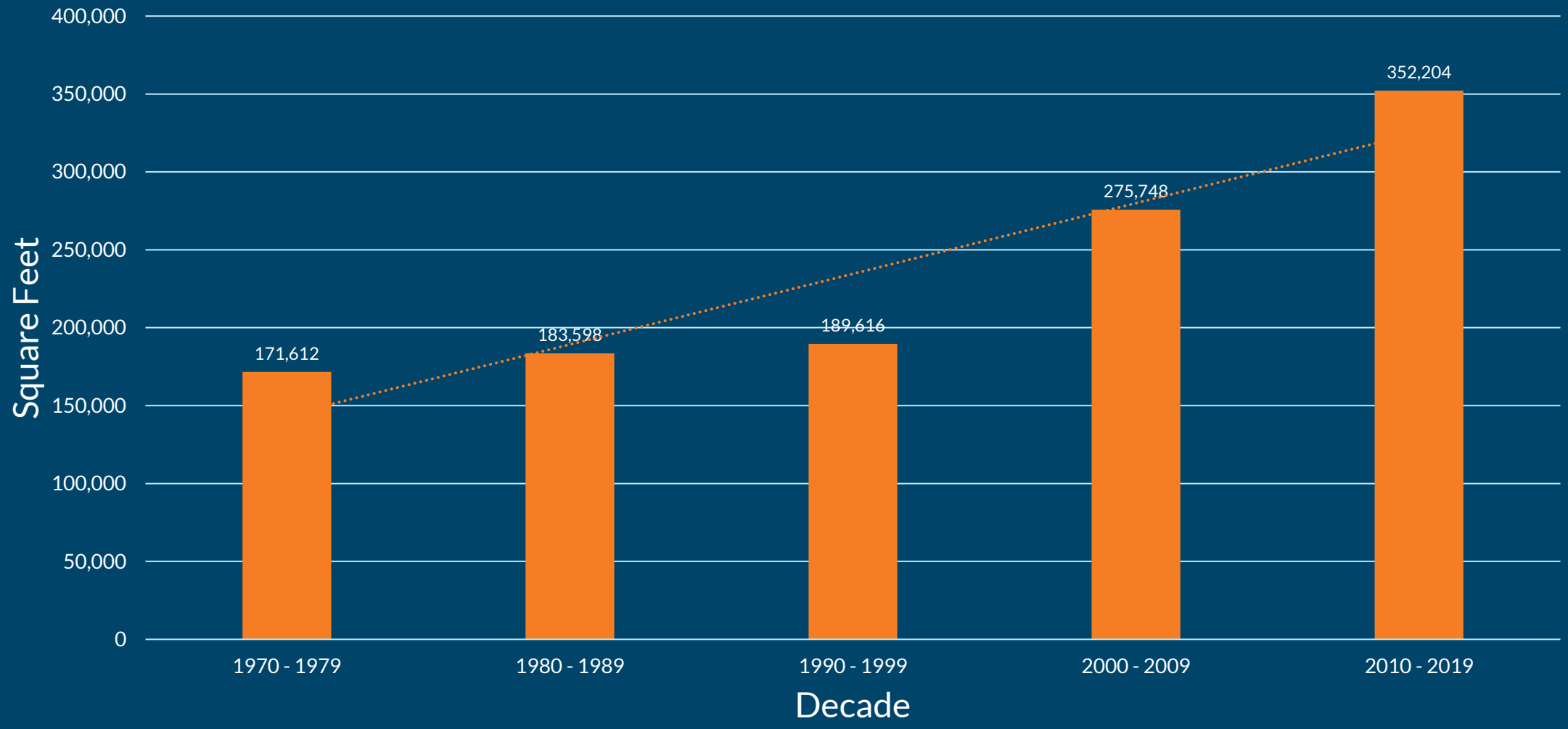
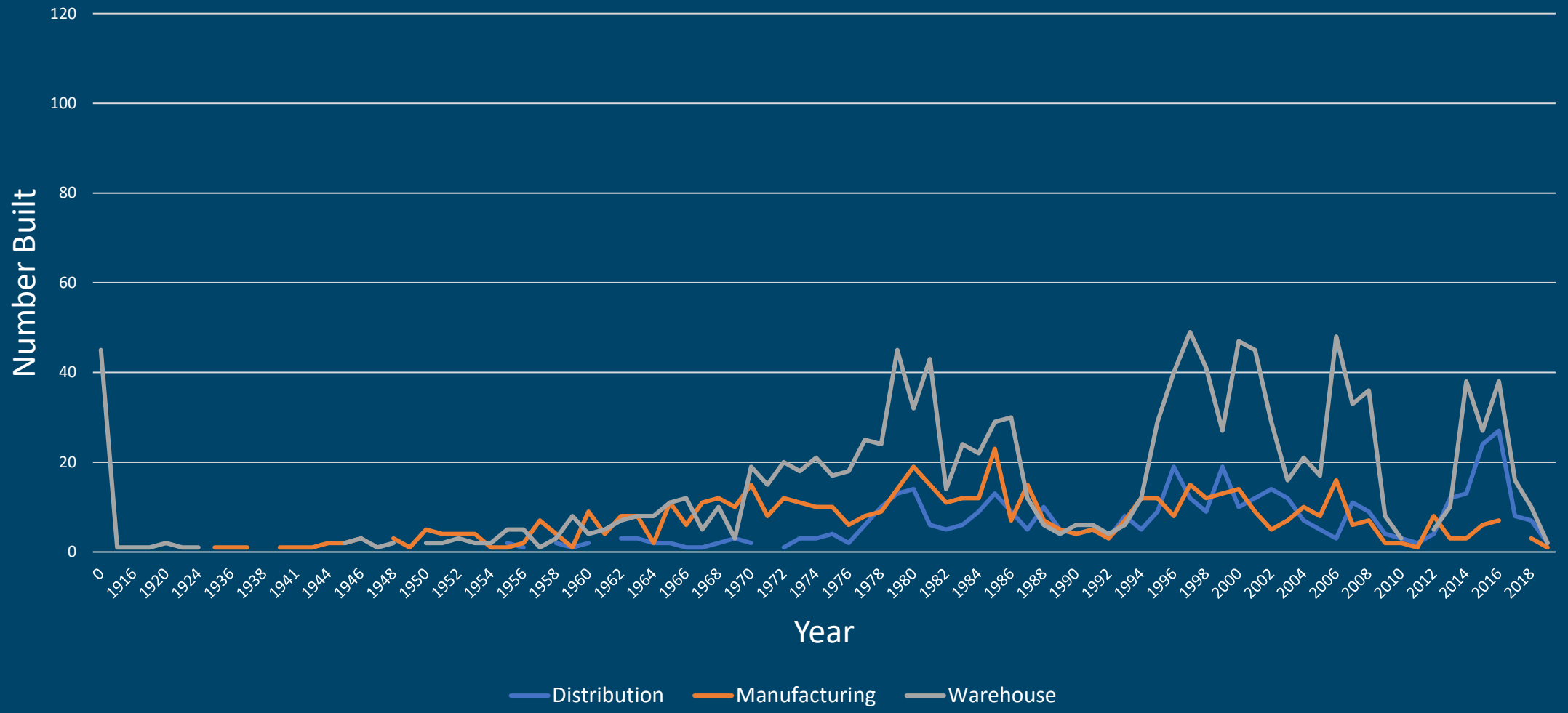
Average Distance of Freight Facilities to Urban Core Areas in Miles



Net Change in Regional Freight Facility Square Footage



Year Constructed: North Central Texas Freight Facilities



Freight Land Use Policy Toolkit

Freight Land Use Policy Toolkit Example

Policy 2-1: Truck Routing Ordinance Establishment & Review

Cost: Low | Time Required: Low-Medium | Impact: High

The designation and maintenance of truck routes are critical for quality of life and efficient freight movement through local roadways. Although most cities in the North Central Texas region have truck routes designated by ordinance, they must be regularly reviewed and updated on the basis of changing transportation network conditions, changes in land use, and regional freight network connectivity concerns.

Truck Routing Designation Criteria	
Physical Criteria	**Connectivity Criteria**
• Favorable Intersection Geometry • Sufficient Bridge Height • Absence of Low-weight bridges • Overhead clearance • Road weight capacity limits • Minimal At-grade rail crossing interaction • Separation from Bicycle/Pedestrian infrastructure	• Commercial development/district access • FOD & Industrial area access • Arterial or highway connections • Intermodal facility access • Truck parking facility access

Analysis Key Findings

- The southern portion of the SH-360 Corridor contains numerous Freight Land Use Conflicts
- The DFW Region at large has experienced a small amount of the *freight sprawl* phenomenon
- Communities should contemplate the characteristics of specific sites, facilities, and plots of land, rather than broad geographical subdivisions.
- Recommendations and strategies resulting from the analysis were used to generate the Policy Toolkit portion of the report

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