

NCTCOG FACT SHEET

July 2023

QUICK TAKE

What:

The North Central Texas Council of Governments Freight Planning Program conducted an analysis of the potential impacts of freight-related land uses (warehouses, distribution centers, railroads and manufacturing facilities) on communities under the protection of environmental justice (EJ) laws and policies throughout the region.

Significance:

Under certain conditions, freight land uses have the potential to cause disproportionate impacts to minority and low-income populations.

By the Numbers:

73.1% – Percentage of regional freight facilities that are located within EJ-protected areas of any type.

1.38 miles – Average distance between a school and freight facility in EJ areas in North Texas.

44% – Percentage of regional freight rail lines that run through EJ areas. Schools in EJ areas are 41.3% closer to freight rail lines than schools in non-EJ areas.

50% – Percentage of regional rail crossings in EJ areas. These are nearly twice as likely to be the target of a grade separation project.

Environmental Justice and Freight Facilities

North Texas is home to a variety of freight facilities, such as distribution centers, manufacturing plants and warehouses. Although these assets are crucial for economic vitality, they also can present challenges when located adjacent to more sensitive land uses, such as schools and houses. Environmental Justice (EJ) in the context of freight infrastructure refers to the proportional, equitable distribution of the benefits and burdens produced by these facilities among low-income and minority populations.

Conflicts can occur when incompatible land uses, such as industrial and residential, are developed near one another. Issues such as light and noise pollution and safety hazards can affect quality of life near freight facilities. NCTCOG seeks to promote development that prevents land use conflicts by using high-quality site design and “good neighbor strategies” to reduce or eliminate negative externalities associated with freight developments. Since most regional freight facilities are located within EJ districts, these policy and design tools are more important.

Proximity to Freight Facilities

Dallas-Fort Worth area freight facilities are approximately 1.5 miles closer to schools in EJ areas compared to schools in non-EJ areas. This may indicate that the potential for impacts to surrounding communities is higher in EJ areas.



Freight rail is important to the North Texas economy. But land use decisions around rail lines can improve quality of life. NCTCOG encourages "good neighbor strategies" to help.

Proximity to Freight Rail Lines

Freight rail transportation is another critical aspect of the regional goods movement network. However, rail lines can generate large amounts of noise and vibration, and present safety hazards which can temporarily impede roadway mobility near rail crossings. Just under half of all freight rail mileage in the region is in an EJ area. Schools in EJ areas tend to be almost twice as close to rail lines than their non-EJ counterparts.

Nearly 50% of railroad crossings (at-grade and grade separated) are located in EJ areas. Crossings in EJ areas are almost twice as likely to be chosen for grade separation projects to improve mobility.

Land Use and the Environment

Air Quality

NCTCOG air quality models indicate most vehicle emissions in the region are generated by medium- and heavy-duty vehicles. As a result, air quality impacts could occur near freight facilities that service large numbers of trucks. Other potential impacts include:

- Higher-than-average nitrogen oxide and particulate matter emissions near freight facilities

- Potential of runoff generated by maintenance, fueling and cleaning of heavy equipment resulting in pollution of surface water
- Increased flooding and erosion near freight facilities because of their typically impermeable surfaces (parking lots, roads, yards, etc.)

These and other environmental effects can be managed by proper design standards for freight-oriented developments, as well as other transportation-related programs, such as off-peak deliveries and freight-land use preservation initiatives. Efforts such as these reduce the amount of emissions generated by freight vehicles while minimizing their impact on roadway congestion. Local governments are encouraged to consider these when making decisions.

Additional Studies

Much of the information gathered on the impact of freight requires further empirical verification. Several follow-up studies on EJ-related phenomena have been proposed, including the relationship between land values and freight facility development, new policies and freight impacts on housing in EJ communities.



North Texas is home to many freight facilities to serve its growing population. NCTCOG has analyzed freight land uses and developed recommendations to help communities as they consider how to promote connectivity to ensure the efficient delivery of goods.

