Safe Routes to School Regional Action Plan

June 2025

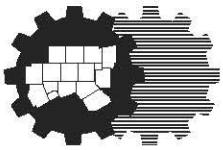
North Central Texas Council of Governments

What is NCTCOG?

The **North Central Texas Council of Governments** (NCTCOG) is a voluntary association of, by, and for **local governments** within the 16-county North Central Texas Region. The agency was established by state enabling legislation in 1966 to assist local governments in **planning** for common needs, **cooperating** for mutual benefit, and **coordinating** for sound regional development. Its purpose is to strengthen both the individual and collective power of local governments, and to help them recognize regional opportunities, resolve regional problems, eliminate unnecessary duplication, and make joint regional decisions – as well as to develop the means to implement those decisions.

North Central Texas is a 16-county **metropolitan region** centered around Dallas and Fort Worth. The region has a population of more than 8 million (which is larger than 38 states), and an area of approximately 12,800 square miles (which is larger than nine states). NCTCOG has 235 member governments, including all 16 counties, 170 cities, 20 independent school districts, and 29 special districts.

NCTCOG's **structure** is relatively simple. An elected or appointed public official from each member government makes up the **General Assembly** which annually elects NCTCOG's **Executive Board**. The Executive Board is composed of 17 locally elected officials and one ex-officio non-voting member of the legislature. The Executive Board is the policy-making body for all activities undertaken by NCTCOG, including program activities and decisions, regional plans, and fiscal and budgetary policies. The Board is supported by policy development, technical advisory and study **committees** – and a professional staff led by **Todd B. Little**, Executive Director.



NCTCOG's offices are located in Arlington in the Centerpoint Two Building at 616 Six Flags Drive (approximately one-half mile south of the main entrance to Six Flags Over Texas).

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NCTCOG's Department of Transportation

Since 1974 NCTCOG has served as the Metropolitan Planning Organization (MPO) for transportation for the Dallas-Fort Worth area. NCTCOG's Department of Transportation is responsible for the regional planning process for all modes of transportation. The department provides technical support and staff assistance to the Regional Transportation Council and its technical committees, which compose the MPO policy-making structure. In addition, the department provides technical assistance to the local governments of North Central Texas in planning, coordinating, and implementing transportation decisions.

Prepared in cooperation with the Texas Department of Transportation and the U.S. Department of Transportation, Federal Highway Administration, and Federal Transit Administration.

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The Safe Routes to School (SRTS) Regional Action Plan (RAP) is intended as a resource for local governments, independent school districts (ISDs), and the public to support existing and future SRTS planning and implementation activities. The RAP was conceived as a response to the challenges faced by local governments and ISDs with providing safe and accessible schools in the face of rapid growth and a complicated jurisdictional landscape. These challenges make early and intentional cooperation for schools planning vital to support school-aged children's ability to walk and bicycle safely to school. Key conclusions from each chapter in the SRTS RAP include:

Chapter I - Introduction:

- Rapid growth, the complexity of the Dallas-Fort Worth (DFW) jurisdictional boundaries, and the need for coordination among local governments, ISDs, and other agencies for schools planning result in a challenging landscape for enabling and encouraging school-aged children to walk and bicycle safely to school.
- Since 2011, the North Central Texas Council of Governments (NCTCOG) has encouraged SRTS interventions in the region through a wide variety of education, encouragement, technical assistance, guidance, and funding actions. This includes programming a total of $42.8 million for 47 SRTS projects in 21 DFW cities and 23 ISDs since 2014 through four NCTCOG Transportation Alternatives Calls for Projects.

Chapter II - State of the Schools in the Dallas-Fort Worth Region:

- In the 2021-2022 school year, the DFW region contained 2,187 traditional public schools and 236 charter schools spanning 233 cities and 143 ISDs across the 12-county Metropolitan Planning Area (MPA).
- Most students in the DFW region are driven to school, with 65 percent of students driven to school in a personal vehicle as of 2017.
- Modern school siting practices place schools in areas that are more difficult to walk and/or bicycle to, including wide, fast roads that are dangerous for young children to cross safely.
- There is a need for increased and formalized efforts for school campuses, ISDs, and local governments to collaborate and communicate early and continuously regarding student pedestrian safety and school siting.

Chapter III - Safe Routes to School Plans for Existing Schools:

- SRTS plans help local governments and schools identify and address SRTS issues and interventions needed to enable school-aged children to walk and bicycle safely to school. SRTS planning also makes SRTS funding applications more competitive.
- Recommendations for SRTS plans include comprehensively addressing: community engagement, agency coordination, existing conditions, the variety of land use and

roadway contexts, road user behavior, barriers to walking and bicycling to school, student pick up and drop off, and potential bicycle and pedestrian safety countermeasures to remedy identified safety issues.

Chapter IV - New School Siting:

- Rapid growth in the region underscores the need for comprehensive approaches and regular collaboration among schools, ISDs, local governments, and other stakeholders.
- Early collaboration is essential to ensure potential new sites can be served by infrastructure that will help create a safe environment for students to walk and bicycle to and from school.
- NCTCOG's *Planning for Community Schools: A Guide to School Siting in North Texas* includes a detailed roadmap for collaboration between ISDs and local planning stakeholders at the city and county level.

Chapter V - Identifying Areas of Potential Need for SRTS Improvements:

- Half of the top 20 urban schools that were identified as potentially having the highest need for SRTS interventions were located in Dallas or Fort Worth.
- Schools in urban areas scored higher than schools in rural areas for need of SRTS interventions.
- Half of the urban schools in the top 20 were charter schools.
- There is a need to further investigate charter schools and their implications for SRTS planning and interventions as well as school siting.

Chapter VI - Regional Strategy for Safe Routes to School

- The comprehensive regional strategy for SRTS includes an emphasis on joint coordination among local agencies, technical assistance to local governments, education and training, encouragement activities, and outreach and promotion.
- NCTCOG will continue to assist the region with SRTS data collection and evaluation, project facilitation, planning, funding, education and training opportunities, encouragement activities, and outreach and promotion.
- New initiatives from NCTCOG include developing a regional crossing guard implementation process and exploring the changing landscape of schools in the region with the rise of charter schools and acceleration of school closures.

The SRTS RAP was developed by the NCTCOG Community Schools and Transportation Program, which is part of the Land Use and Mobility Options team housed in the Transportation Department.

I. INTRODUCTION

The Safe Routes to School (SRTS) Regional Action Plan (RAP) is intended as a resource for local governments, independent school districts (ISDs), and the public to support existing and future safe routes to school and school siting planning and implementation activities. The RAP was conceived as a response to the challenges faced by local governments and ISDs with providing safe and accessible schools to students in the face of rapid growth and a complicated jurisdictional landscape. This jurisdictional complexity requires early and intentional cooperation to effectively plan school siting and travel. Coordination is also vital for ISDs and cities to plan effectively and compete for limited SRTS and other funding opportunities.

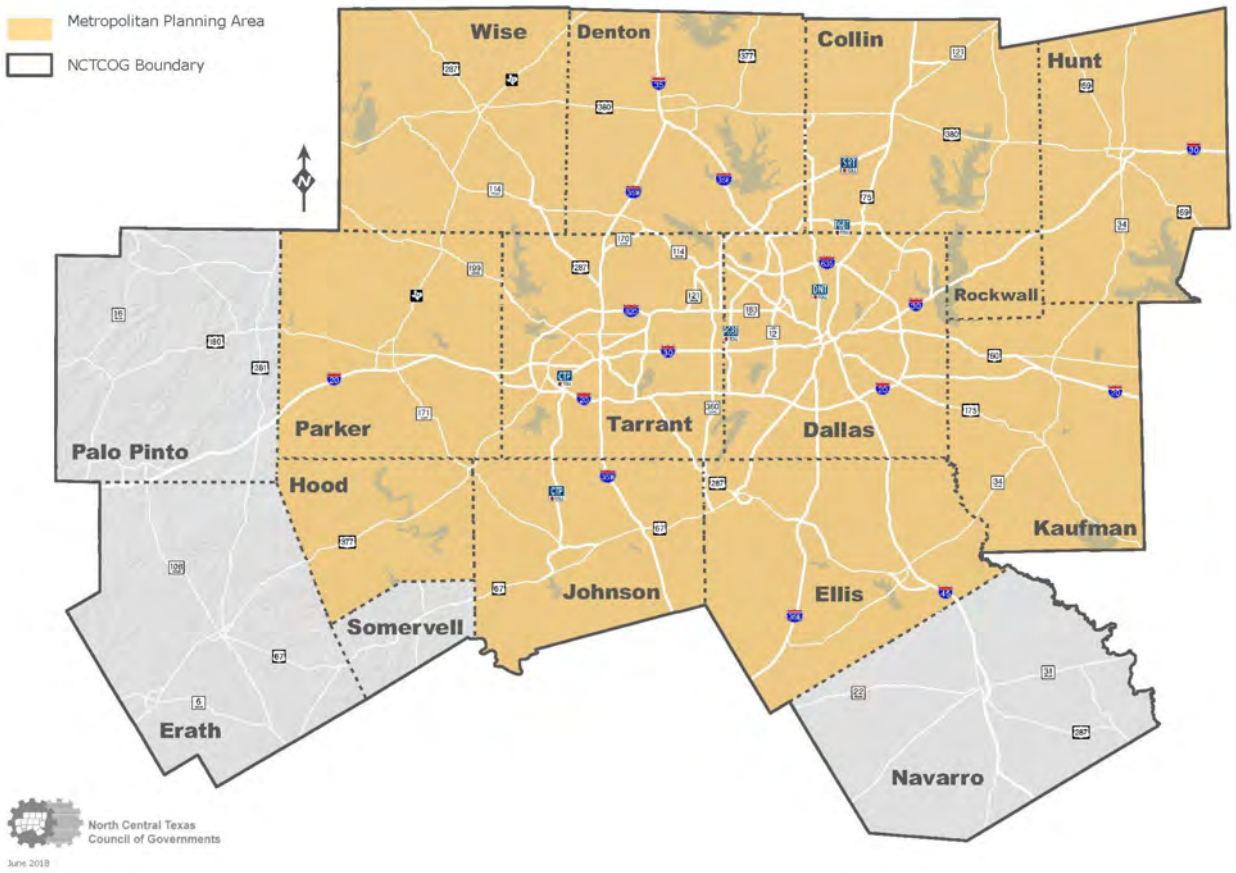
Rapid growth in the region has made the development of schools and their placement a crucial issue to achieve safe and accessible schools for students. The estimated population for the 12-county Metropolitan Planning Area (MPA) has grown from 7.5 million in 2019 to 8.2 million in 2023. The MPA is forecasted to grow to 11.4 million residents by 2050 – an estimated 63.7 percent growth increase between 2019 and 2050. School planning will continue to take prime importance as the region's school districts will need to absorb an estimated 500,000 additional students by 2045.[1]

School-related planning in the Dallas-Fort Worth (DFW) region, including school siting and SRTS, is very complex and involves many different entities and convoluted jurisdictional boundaries. The MPA includes 143 ISDs and 233 cities. Some cities in the MPA contain multiple ISDs, while some ISDs span multiple cities. This jurisdictional complexity requires early and intentional cooperation to effectively plan school siting and travel. Coordination is also required for ISDs and cities to plan effectively and compete for limited SRTS and other funding opportunities.

The SRTS RAP was developed by the Community Schools and Transportation Program, which is part of the Land Use and Mobility Options team at the North Central Texas Council of Governments (NCTCOG). The Land Use and Mobility Options team is housed within NCTCOG's Transportation Department. Since NCTCOG has jurisdictional authority over only the 12-county MPA (see Figure 1), the guidance provided in the SRTS RAP will be focused on this area. However, this report includes relevant information to jurisdictions both inside and outside the MPA.

[1] NCTCOG Draft 2050 Demographic Forecast

Figure 1: North Central Texas Council of Governments Region



Safe Routes to School and the "E's"

SRTS programs encourage school children to walk or bike to school and strive to make these alternative modes of travel both safer and more appealing for pedestrians. SRTS programs achieve their goal through planning and implementation of infrastructure and activities that improve traffic safety, reduce traffic, and reduce air pollution in school areas. NCTCOG SRTS programs and activities are guided by the "E's" of SRTS: Engineering, Education, Encouragement, Enforcement, Engagement, Equity, and Evaluation (Figure 2).

Figure 2: Es of Safe Routes to School

SRTS "E"	Definition
Engineering	Design, construction and maintenance of physical infrastructure that improves the safety and comfort of students walking and bicycling to school. Creating physical improvements to streets and neighborhoods that make walking and bicycling safer, more comfortable, and more convenient.
Education	Educational programs, events, and/or curricula that teach students bicycle, pedestrian, and traffic safety skills, and teach drivers how to drive safely in school zones and share the road.
Encouragement	Special events, clubs, contests, and ongoing activities that encourage more walking, bicycling or carpooling through fun activities and incentives to generate excitement and participation.
Enforcement	Strategies to deter the unsafe behavior of drivers, bicyclists and pedestrians, and encourage all road users to obey traffic laws and share the road. Deterrents to unsafe behavior may include education on the unsafe behavior, developing a community-based enforcement program, increasing police presence, or installing warning signage and striping.
Engagement	Engaging community members, students, families, school staff, and others to create plans and activities that reflect community needs and desires.
Equity	Ensuring consideration of all who may be impacted by the SRTS plans or activities, including individuals of all ages, abilities, genders, ethnicities, and incomes.
Evaluation	Activities to understand the effectiveness of the SRTS activity, identify improvements that are needed, and ensure the activities can continue in the long term.

Historic SRTS Activities and Funding in the Dallas-Fort Worth Region

Early SRTS Efforts, Coordination, and Trends (2011-2014)

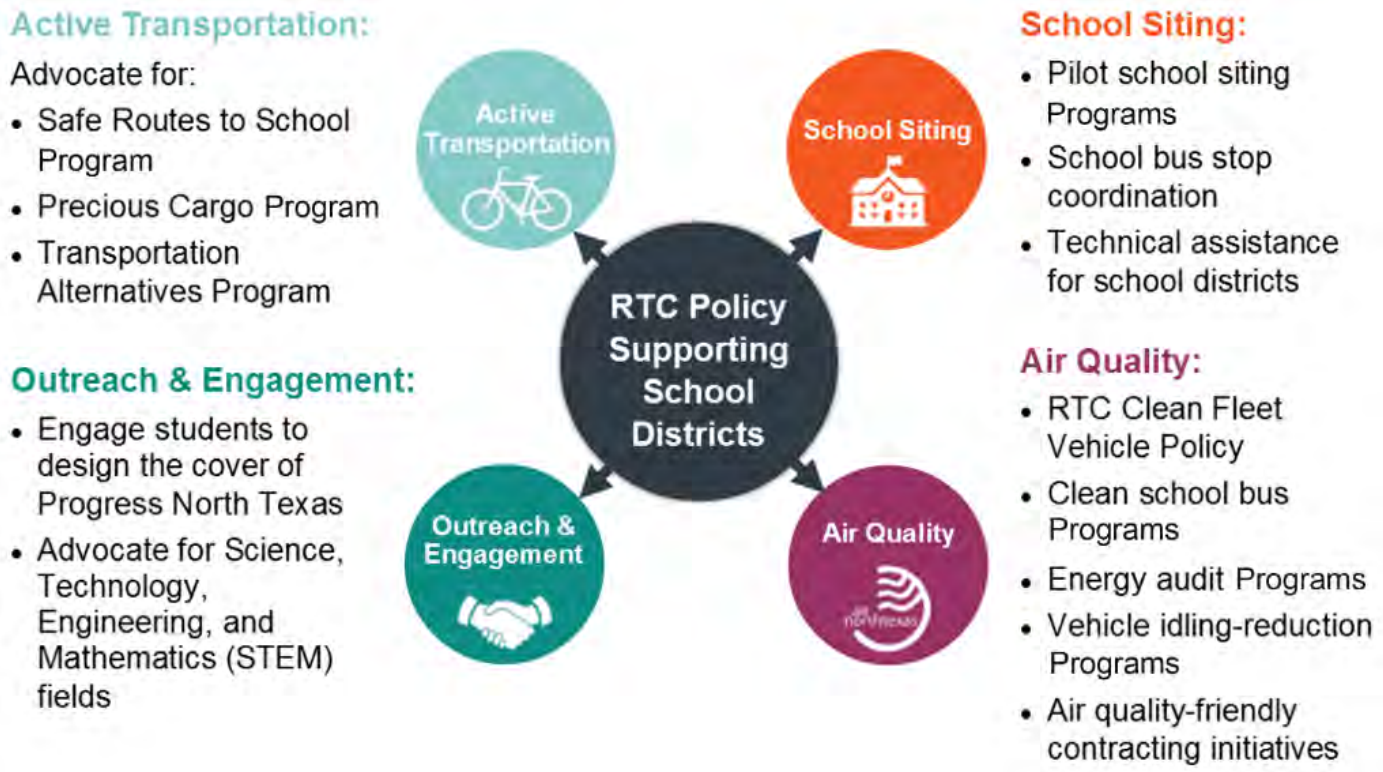
NCTCOG's early efforts in SRTS began with facilitating city-ISD coordination on SRTS and school siting topics, including a workshop on Effective School Siting and Facilities

Planning in 2011 for the City of McKinney and a subsequent report in 2012 titled "School Siting in North Central Texas: Strategies for Effective School Facilities Planning in McKinney, Texas."[2]

In 2012, NCTCOG staff additionally facilitated a Joint Meeting of the Board of Trustees of Denton Independent School District and the City of Denton City Council. NCTCOG staff delivered a presentation on school siting and transportation coordination. This effort resulted in the City of Denton and Denton ISD working with NCTCOG to identify engineering projects near school sites to improve safety and access between neighborhoods and schools, assemble bicycle and pedestrian safety and outreach materials for students, map upcoming roadway construction projects within the ISD's jurisdiction, and coordinate SRTS application materials. The City and Denton ISD subsequently submitted a request for funding to the RTC which resulted in sidewalks being constructed near two school sites.

In 2013, NCTCOG adopted a policy to promote coordination among municipalities and school districts located inside the MPA with a variety of initiatives (Figure 3).

Figure 3: RTC Policy Supporting School Districts



[2] https://www.nctcog.org/getmedia/d7bd00fe-dab7-41f7-b5cf-938a36f179c5/McKinneySchoolSiting_2012.pdf

Safe Routes to School Efforts 2014-2020

Transportation Investment Generating Economic Recovery Grant

NCTCOG received a Transportation Investment Generating Economic Recovery (TIGER) grant in 2014 for $300,000 to support SRTS and school siting programs with four goals: 1) encourage interagency cooperation; 2) address land use transportation problems and school siting; 3) plan for transportation safety in school locations, and; 4) plan for transportation options and safety. The tasks completed as part of this effort are discussed below. More information about each of these tasks and links to task deliverables can be found in Figure 4.

Task 1: Encourage Interagency Cooperation

NCTCOG formed a Regional School Coordination Task Force to promote collaboration between ISDs, local governments, and transportation agencies. The Task Force, which met in 2015 and 2016, covered topics including coordination of ISD facility planning, city comprehensive plans, and capital improvement programs. This enhanced coordination worked to encourage the removal of policy barriers to sustainable school siting. Information from these meetings, including presentations, can be found on the NCTCOG School Siting web page.[3]

Task 2: Address Land Use Transportation Problems and School Siting

Staff developed a review of State legislation and policies surrounding school siting and land banking to create a framework for planning, establishing, and maintaining acquisition funds and/or land banking for schools. Recommendations for a greater level of coordination for future housing and school demand projections were also developed.

[3] www.nctcog.org/saferoutestoschool

Task 3: Plan for Transportation Safety in School Locations

The transportation safety task consisted of a pilot SRTS planning program which developed SRTS plans for three schools – Ignacio Zaragoza Elementary School in Dallas, American Learning Academy/International Newcomer Academy in Fort Worth, and Delaney Elementary School/Arthur Intermediate School in Kennedale.

Task 4. Plan for Transportation Options and Safety

Staff investigated transportation connections between housing and schools in inner cities (with a focus on lower-income schools), suburban areas, and rural areas. Staff also completed an analysis of congestion, traffic flow, and safety around school areas, and researched school and public transportation busing partnerships to improve bus access to schools.

Figure 4: NCTCOG TIGER Grant Deliverables

Deliverable	Description	Website
Planning for Community-Oriented Schools: A Guide to School Siting in North Texas (2017)	Best practices for local governments to better align planning activities, build community-oriented schools, and achieve community goals.	https://www.nctcog.org/getmedia/65dfee6f-d689-4955-a614-193b49b2bc3a/SchoolSitingGuide_NCTCOG_2017.pdf
Coordinating Demographic Projections (2016)	Review of best practices for coordinating school district, local government, and regional demographic projections.	https://www.nctcog.org/nctcg/media/Transportation/DocsMaps/Plan/Landuse/Memo_DemogProjections_2016.pdf
Review of State Legislation and Policies Related to School Siting Requirements (2016)	Review of state legislation and policies related to school siting and noteworthy policies from other states.	https://www.nctcog.org/getmedia/c437e3c2-1e45-4c30-8080-0d2ff0300e68/Memo_ReviewStateLeg_2016.pdf
Land Banking Programs and Best Practices Research (2016)	Review of land banking programs for future school facilities, best practices, and case studies.	https://www.nctcog.org/getmedia/aeb88ef5-7845-444e-94d8-4ad29fda4a3a/Memo_LandbankingPrograms_2016.pdf
Ignacio Zaragoza Elementary Safe Routes to School Plan (2017)	Safe Routes to School plan: including existing conditions, evaluation issues, recommendations, and next steps.	https://www.nctcog.org/nctcg/media/Transportation/DocsMaps/Plan/Bike/SRTS_Zgoza_Dallas.pdf
Applied Learning Academy and International Newcomer Academy Safe Routes to School Plan (2017)		https://www.nctcog.org/getmedia/12659836-fdf3-42a4-82f8-82ee523c0710/SRTS_ALA_INA.pdf

Deliverable	Description	Website
Delaney Elementary School and Arthur Elementary School Safe Routes to School Plan (2018)		https://www.nctcog.org/getmedia/24e8c4d0-b0d9-4087-abcb-92da9bbf8b51/SRTS_Del_Kdale.pdf
School District-Transit Coordination in the Dallas-Fort Worth Region (2020)	Information and tools to facilitate coordination and build partnerships between school districts and public transit agencies.	https://www.nctcog.org/getmedia/701bbc0b-8915-4ada-9911-c6a419b1e46d/SchoolDistrict_PublicTransit_FINAL.pdf.aspx

Fort Worth Blue Zones Project Technical Assistance (2015-2016)

NCTCOG provided technical assistance to the City of Fort Worth and Fort Worth ISD in support of the Blue Zones Project Resolution that was adopted by Fort Worth ISD in 2014. Blue Zones is an initiative designed to help communities make healthy choices through changes to the built environment, policies, and social networks.[4] The intent of Fort Worth's Blue Zones resolution was to support the City's efforts to create a healthy school population and reach 25 percent of schools achieving Blue Zone School status by 2017. NCTCOG participated in the Blue Zones SRTS Master Plan Work Group, providing technical assistance on data and mapping, and assisting with developing the pilot project.

Look Out Texans School Educational Materials (2015-Present)

NCTCOG created school kits and launched a school-focused safety effort as a part of Look Out Texans, an educational campaign aimed at increasing safety for all road users in North Texas. To create the school materials, NCTCOG recruited schoolteachers and

[4] Texas Health Resources Blue Zones Project https://info.bluezonesproject.com/live-long-fort-worth

stakeholders to participate in a focus group to inform the creation of two separate school kits. One kit was created for children in third to fifth grades, and another for students in sixth to eighth grades. Both school kits include an introductory letter for school administrators to better understand the effort and the benefits to their students. The two kits contain varied age-appropriate materials including a Promise to Street Safety pledge, safety tips, quizzes, lesson plans, activities, and flashcards. Parent/caregiver communication materials provided in the school kits are offered in English and Spanish. For more information about Look Out Texans or to access the school kits, please visit the Look Out Texans website.[5]

State Farm Good Neighbor Grant (2018-2020)

In 2018, NCTCOG received a State Farm Good Neighbor Grant to develop three SRTS plans for elementary or middle schools in low-income areas in North Texas. Plans were completed for Speer Elementary and Webb Elementary schools in Arlington, as well as a joint plan for Arturo Salazar Elementary, Leila P. Cowart Elementary, and L.V. Stockard Middle schools in Dallas. Completed plans are available on the Safe Routes to School web page.[6]

Funding: Transportation Alternatives

Safe Routes to School programs in the DFW region are funded by several funding sources on local, State, and federal levels. One of the main sources of funds for SRTS available to NCTCOG is the federal Transportation Alternatives (TA) funds, which are distributed through a competitive call for projects. Eligible projects include on and off-road bicycle and pedestrian facilities and safety countermeasures. TA calls for projects may also fund SRTS-specific projects, including bicycle and pedestrian infrastructure and/or planning, which are anticipated to significantly improve safety and the ability of students to walk and bike to school. SRTS projects must be located in the MPA within two miles of a K-8 school, and within the school's attendance zone. SRTS TA project applications are scored on a variety of categories, including the potential to increase walking and biking; whether SRTS planning work has been completed; equity; and community support.

[5] https://www.lookouttexans.org/
[6] www.nctcog.org/saferoutestoschool

The TA program changed to its current form during 2012 with the passing of *Moving Ahead for Progress in the 21st Century Act* (MAP-21),[7] which sub-allocated federal funding to each MPO from their state's department of transportation. This suballocation allowed MPOs to create their own application processes and priorities in coordination with their state's department of transportation. With the passing of MAP-21 in Fiscal Year 2013, NCTCOG limited the allowable application categories to bicycle- and pedestrian-focused projects and SRTS-focused projects, developed a guide and applications, and issued one of the first MPO-led call for projects in the country. A total of $5.7 million was awarded for SRTS projects in the 2014 call.

Calls for projects now occur approximately every two to three years, depending on federal funding levels and allocations to MPOs. A breakdown of TA SRTS funding and projects funded by call year is summarized in Figure 5. A total of $42.8 million for 47 SRTS projects has been programmed through NCTCOG's TA SRTS funding. These improvements will provide better access to elementary and middle schools across the region.

Figure 5: NCTCOG Awarded TA SRTS Funding by Year

Year	Funding Amount in Millions	SRTS Project Total
2014	$5.7M	13
2017	$16.4M	22
2020	$7M	6
2022	$3.9M	3
2024	$9.8M	3
TOTAL	**$42.8M**	**47**

The most recent TA call for projects opened in late 2024, and the RTC approved the recommended funding awards in June 2025. For the first time, this call for projects included a category for funding SRTS planning projects, in addition to SRTS infrastructure projects.

Application Trends

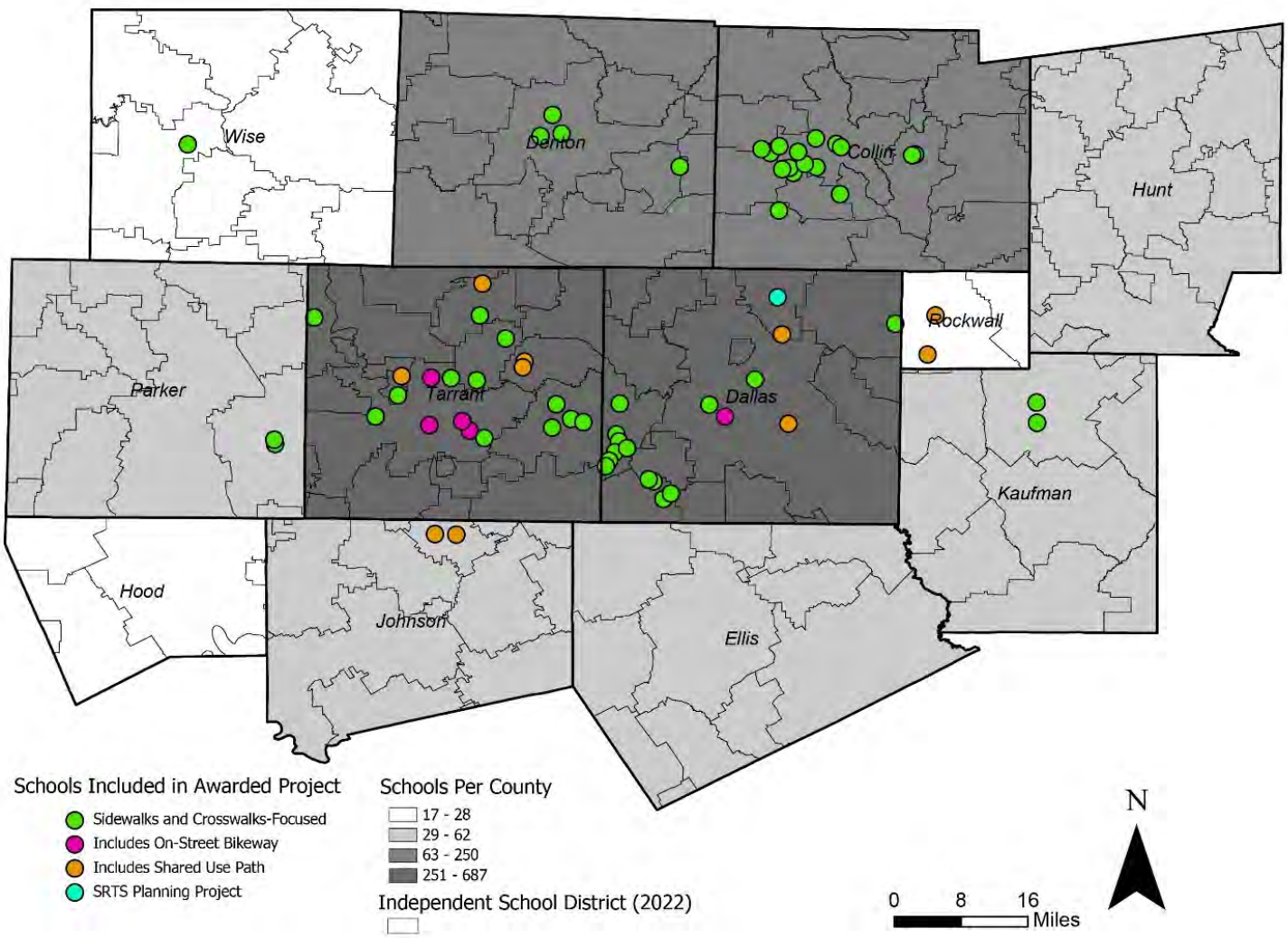
NCTCOG's TA calls for projects have programmed $42.8 million in funding for 47 SRTS projects in 21 cities and 23 ISDs in the MPA over five calls for projects since 2014. TA projects must be principally for transportation rather than purely recreational, have logical termini, and benefit the general public. Eligible projects for the SRTS category must be located within the Dallas-Fort Worth-Arlington, Denton-Lewisville, and/or McKinney

[7] For more information on MAP-21, please visit https://www.fhwa.dot.gov/map21/.

Urbanized Area (see Figure 8, page II-2) and be within two miles of a K-8 grade school inside the school's attendance zone.

A breakout of projects awarded by type for all years in the region is shown in Figure 6.

Figure 6: Awarded TA SRTS Projects by Type (2014-2025)



Submitting a Successful Application

Projects with previous planning work and/or coordination with other local plans score higher and are more likely to be funded.

Projects that scored well in the Safe Routes to School category demonstrated the following characteristics:

1. Proposed infrastructure improvements were identified as high priority in an existing SRTS plan or other local planning effort
2. Addressed a significant and documented problem
3. Likely to increase the number of students walking or bicycling to school
4. Likely to improve school access and safety for disadvantaged populations and underserved communities
5. Public engagement and community support
6. Other factors demonstrating project readiness

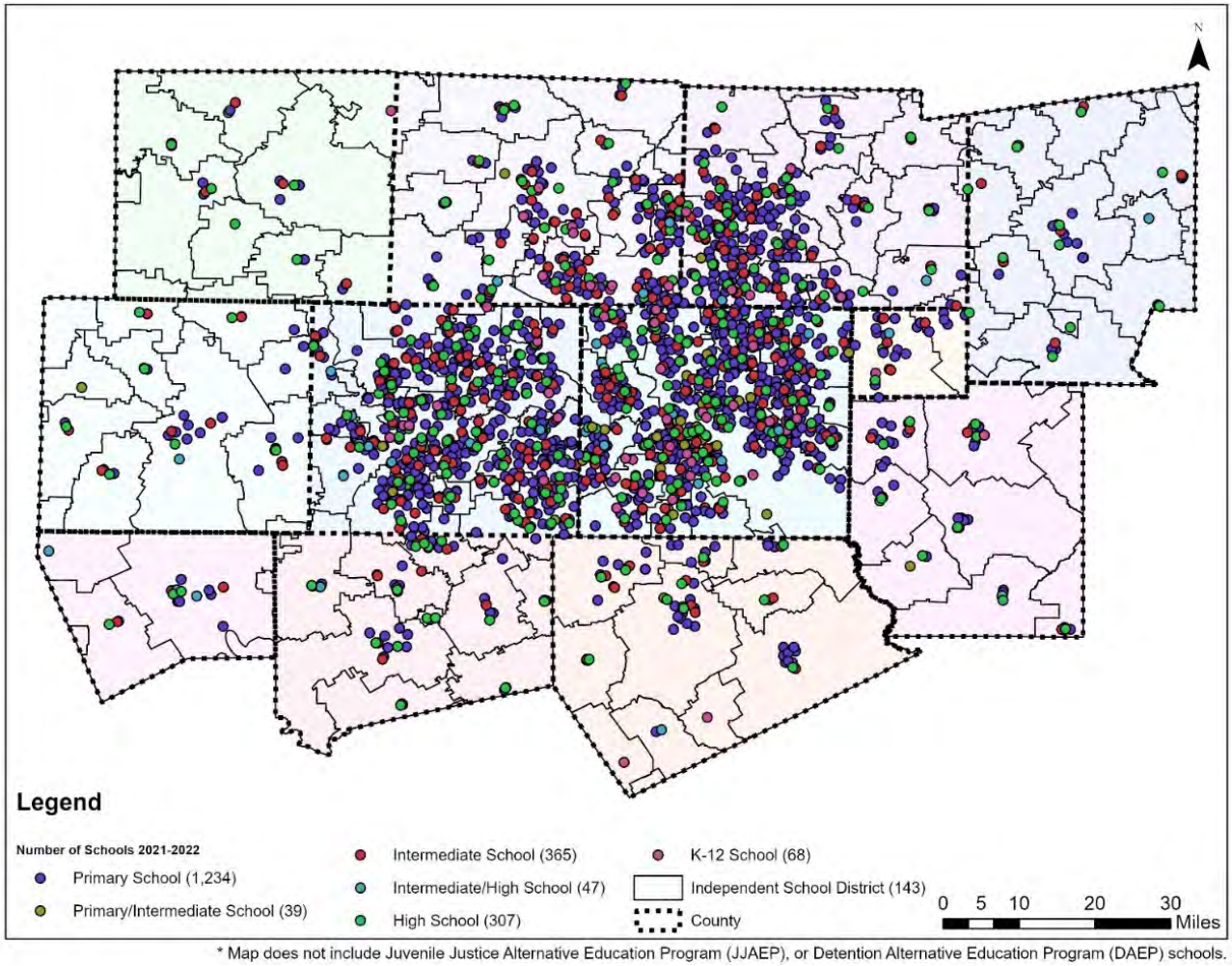
Municipalities and ISDs that are looking to benefit from TA funding should consider completing planning activities for their proposed projects prior to applying for TA funding. One method to do this is to create SRTS plans on a city level or to develop a prioritization process to identify schools in the greatest need of infrastructure improvements. Plans can also be developed to address the SRTS needs at specific schools known to have high need. TA applications with planning efforts that include existing conditions analyses and recommendations tend to score higher than applications submitted without any previous planning support. Creating a SRTS plan is a great opportunity for collaboration among local municipalities, ISDs, and staff at individual school campuses. Section III, Safe Routes to School Plans for Existing Schools, further explores creating SRTS plans for existing schools.

II. STATE OF THE SCHOOLS IN THE DALLAS-FORT WORTH REGION

The Numbers

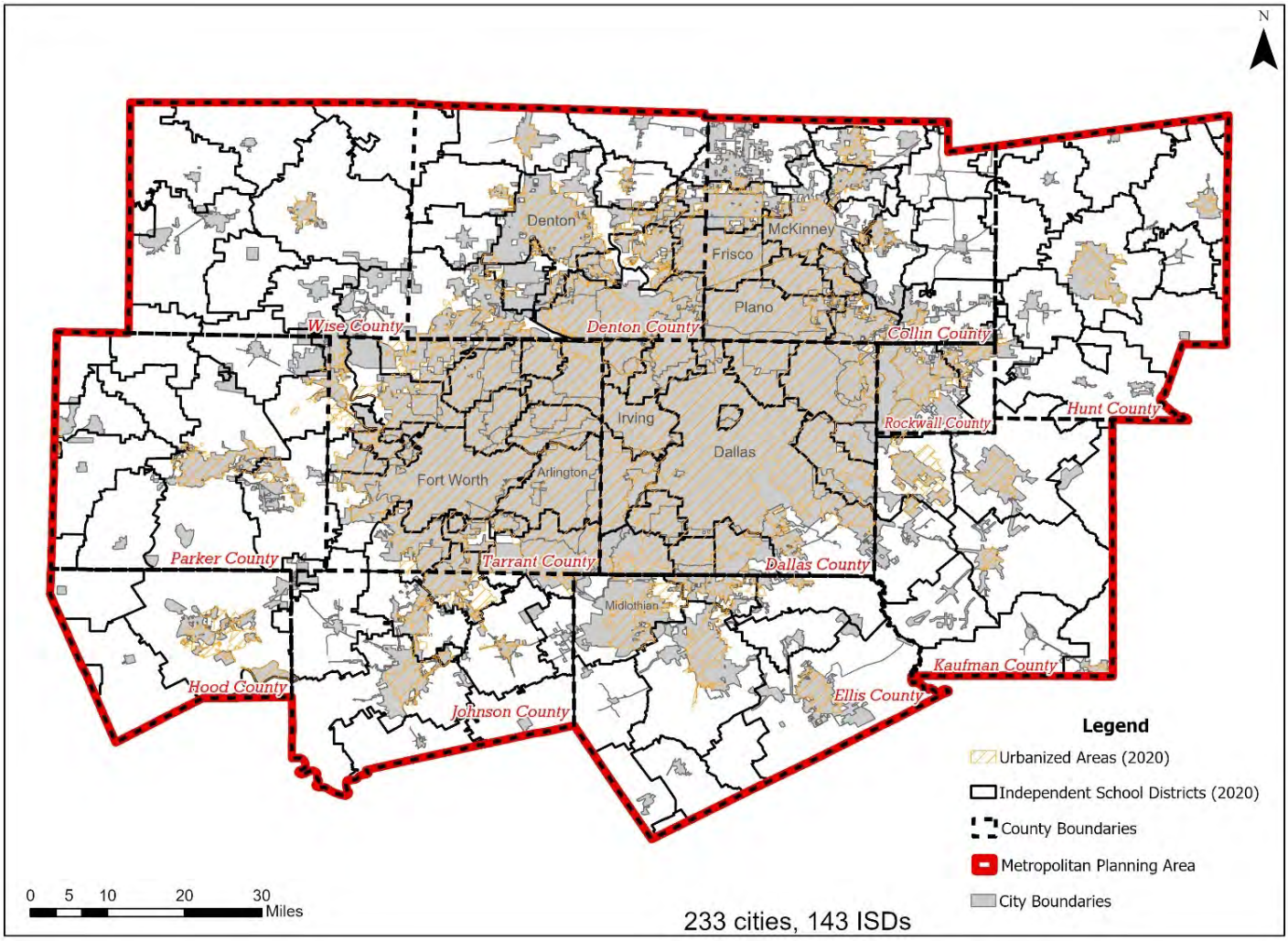
In the 2021-2022 school year, the Dallas-Fort Worth Metropolitan Planning Area contained 2,187 active public schools and 236 charter schools (Figure 7). These schools span 233 cities and 143 ISDs across the 12-county MPA (Figure 8). This jurisdictional complexity creates a unique and challenging situation in the planning and development of new school sites to support the region's growing population, with a multitude of local stakeholders at any school site. These numbers do not include Juvenile Justice Alternative Education Program or Disciplinary Alternative Education Program schools. Strategic site planning is essential for all levels of schooling. However, special considerations apply for elementary schools because they serve the youngest, and therefore most at-risk students for traffic incidents.

Figure 7: 2021-2022 TEA Public Schools in NCTCOG Region by Grade Level*



* Map does not include Juvenile Justice Alternative Education Program (JJAEP), or Detention Alternative Education Program (DAEP) schools.

Figure 8: NCTCOG MPA, Urbanized Areas, ISDs, and Cities, 2020



Travel Habits

The 2017 National Household Travel Survey is the most recent source of data student travel that is specific to the DFW region. The survey showed that for all ages in the DFW region, about 65 percent of students are driven to school in a personal vehicle, about 25 percent take school transportation, and only about eight percent and two percent of students walk or bike, respectively.[8] In the State of Texas, ISDs cannot receive State funding to bus students living within two miles of the school unless hazardous traffic conditions are identified in accordance with State requirements (Texas Education Code §48.151). Examples of "hazardous traffic conditions" include a freeway crossing, an overpass, an uncontrolled major traffic arterial, or and industrial area (Texas Education Code §61.1016). Therefore, due to parental concerns about real or perceived traffic safety or personal security issues, many potential walkers or bicyclists are driven to school in a personal vehicle, especially where walking or bicycling is not safe or comfortable.

Common School Pedestrian Safety Issues in the Dallas-Fort Worth Region

Though every school in the DFW region has its own unique roadway context surrounding its campus, a few common themes have been identified.

Schools Near Major Arterials/Freeways vs. Interior Schools

Surrounding transportation infrastructure can change the level of access bicyclists and pedestrians have to a school site. Major barriers can include highways or wide roadways with no pedestrian crossing access. Barriers like these wide roadways act like a wall to prevent and/or severely limit bicycle and pedestrian activity when located near schools. Large distances between safe crossings across wide roads are dangerous for all pedestrians, especially young students. The wider the roadway, the

Image courtesy of Google Earth

[8] FHWA NHTS Brief: Children's Travel to School – 2017 National Household Travel Survey https://nhts.ornl.gov/assets/FHWA_NHTS_%20Brief_Traveltoschool_032519.pdf

longer a pedestrian is exposed to traffic hazards and required to make decisions about safety.

Schools sited in more internal areas away from major roadways generally have safer, calmer traffic conditions with narrower roads that can be more easily crossed. As previously mentioned, in the State of Texas, busing is not required for students who live within two miles of their school except in extraordinary safety situations where walking may not be possible due to traffic or other safety hazards, such as a railroad crossing or highway. The Texas Education Agency School Transportation Funding web page[9] has additional guidance regarding hazardous traffic and areas with a high risk of violence. With a shift in siting trends to these less accessible areas where busing is not provided to students, many families are forced to either send their students on dangerous roadways without proper infrastructure to safely walk or bicycle or drive their students to school.

Safe Speeds

When students must travel along or across roadways with high speeds, they are put at an increased risk of injury or death if struck by a motor vehicle. There are many strategies to help manage and maintain safe speeds on roadways which students must travel along and across. These include a safe place for students to travel away from the roadway on a sidewalk or shared-use path, proper school zone signage, increasing the visibility of crossings with reflective signage and lighting, and retrofitting roads with appropriate infrastructure interventions that naturally cause drivers to slow down, such as narrower lanes, speed bumps, etc., and different enforcement strategies. For more information about enforcement, including law enforcement strategies, such as progressive enforcement, and community enforcement strategies, please visit the Safe Routes Guide Enforcement web page.[10]

The American Automobile Association (AAA) conducted a study titled "Impact Speed and a Pedestrian's Risk of Severe Injury or Death"[11] which investigated how vehicle speed influences the probability that a pedestrian struck by a motor vehicle will sustain severe

[9] https://tea.texas.gov/finance-and-grants/state-funding/state-funding-reports-and-data/school-transportation-funding
[10] http://guide.saferoutesinfo.org/enforcement/
[11] Tefft, B.C. (2011). Impact Speed and a Pedestrian's Risk of Severe Injury or Death https://aaafoundation.org/impact-speed-pedestrians-risk-severe-injury-death/

injuries or die. These findings highlight the importance of maintaining and enforcing reduced speed limits in the vicinity of schools (Figure 9).

Figure 9: Impact Speed and a Pedestrian's Risk of Severe Injury or Death

Vehicle Travel Speed at Time of Pedestrian Collision	% Chance of Severe Injury
16 mph	10%
23 mph	25%
31 mph	50%
39 mph	75%
46 mph	90%

Vehicle Travel Speed at Time of Pedestrian Collision	% Chance of Fatality
23 mph	10%
32 mph	25%
42 mph	50%
50 mph	75%
58 mph	90%

Safe Routes to School Activities Occurring in the DFW Region

Survey of Current Efforts

In summer 2022, NCTCOG conducted surveys at local schools and municipalities in the DFW region to assess the state of Safe Routes to School activities and school children's ability to safely walk and bicycle to school. The survey for local schools was sent to NCTCOG's internal school stakeholder list. The survey for municipalities was sent to the NCTCOG Bicycle and Pedestrian Advisory Committee (BPAC) and Surface Transportation Technical Committee (STTC) email lists. The surveys were also promoted through presentations at BPAC and STTC. This survey is only the first step of further school campus and ISD communication. This sampling of ISDs, schools, and municipalities is not comprehensive for the region, and was intended to provide a preliminary understanding

of trends and to hear about the experiences of school leaders in the region. Note that survey totals shown in the text and figures below may not add up because some individual survey questions did not receive a 100 percent response rate.

Schools Survey

The school survey was open for responses from June 2022 to September 2022 with responses received from public schools, private schools, charter schools, and ISD representatives. The survey included 11 questions pertaining to current SRTS educational activities, funding mechanisms, partnerships with local municipalities, current infrastructure improvements, and general need for SRTS education and infrastructure improvements to increase walking and biking. The survey received 43 individual responses, including 23 ISD responses (Figure 10) and 19 individual campus responses.

Of the 19 respondents from individual campuses, 14 were from public charter schools, which may have affected the results from individual school campuses due to the greater attendance range of charter schools versus a traditional public school with a set attendance boundary (Figure 11). Three of the four responses from individual public-school campuses were located in an ISD that additionally submitted a response representing the entire ISD. The full survey is included in Appendix 1.

Figure 10: ISD Respondents to Schools Survey, 2022

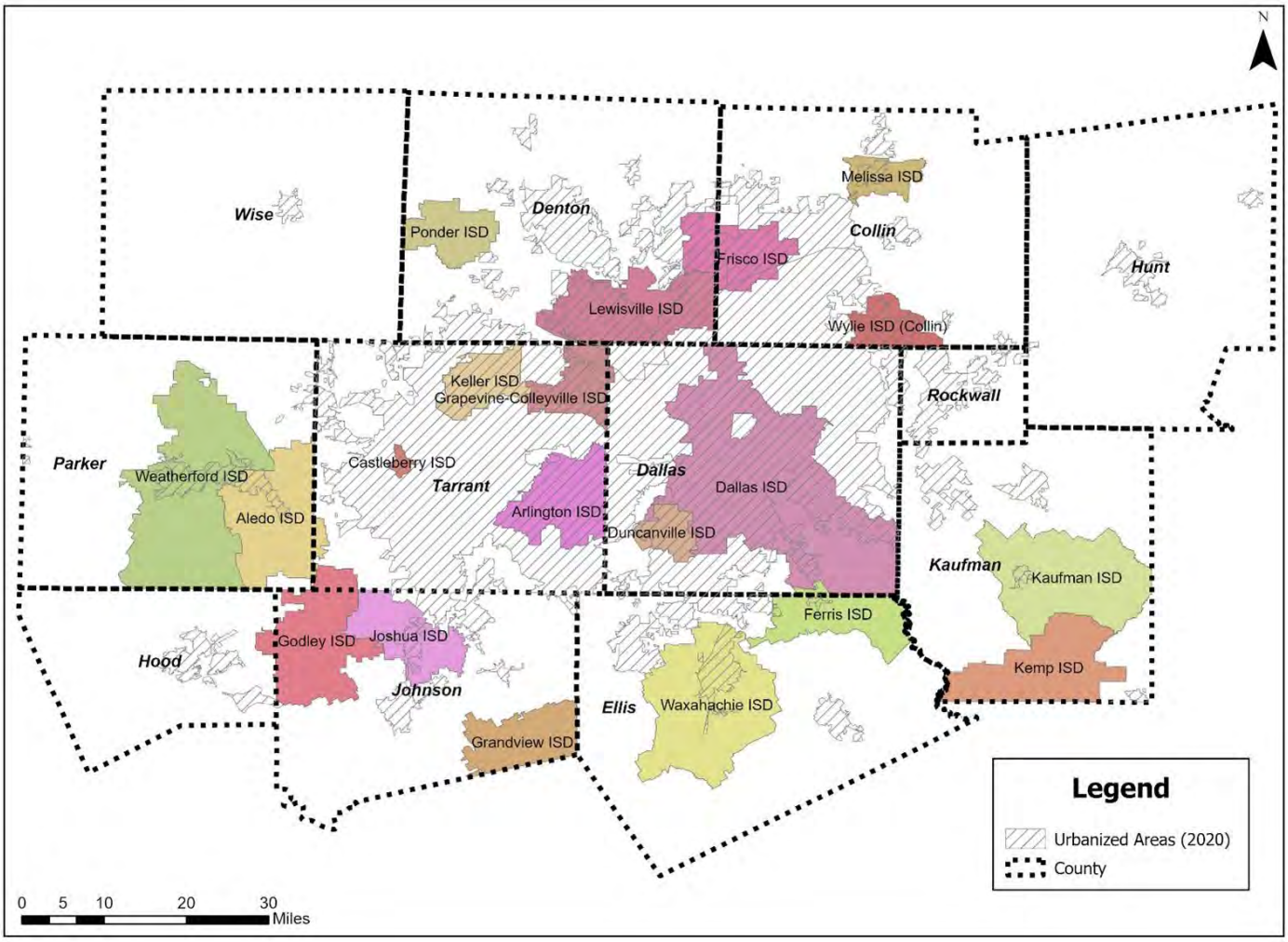
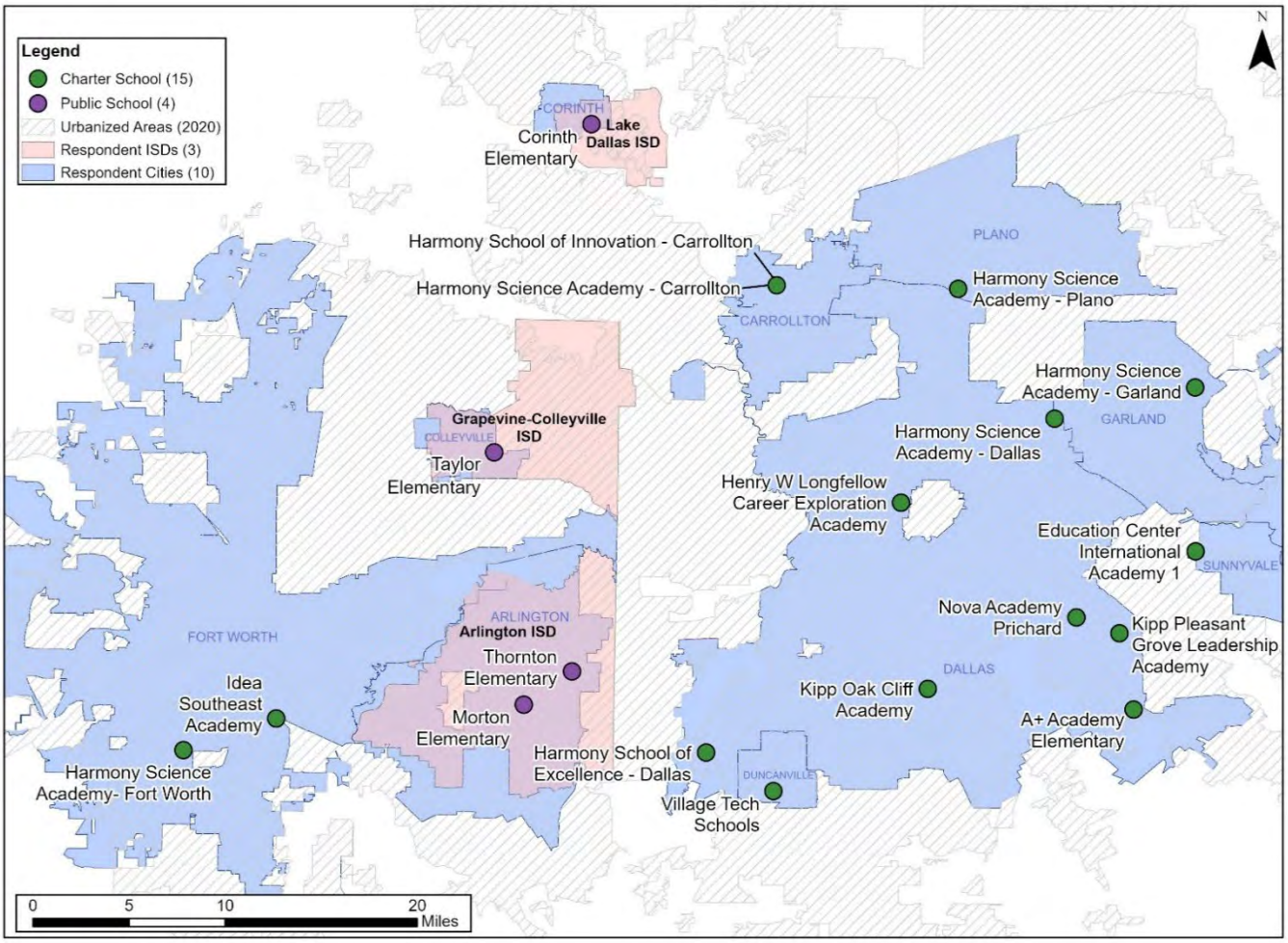


Figure 11: Individual Campus Respondents to the Schools Survey, 2022



Participation in Safe Routes to School Programs

The survey revealed a varying level of participation and engagement for SRTS education programs. Two-thirds of ISDs that responded to the survey did not have any educational programs in place. Of the one-third of respondents that did have a district-wide program in place, programs varied, including education in the classroom; written materials such as posters, websites, and educational materials given to parents and guardians; and education from outside groups such as bus drivers and local police. For individual school respondents, just under half of respondents engaged in walking and biking instruction. Methods for disseminating the information included emails, pamphlets to families, parent newsletters, classroom posters, and presentations. There were some instances of classroom instruction and crossing guard instruction. Funding for these educational activities was provided by the ISD, local schools, or Parent Teacher Associations/Parent Teacher Organizations (PTA/PTO).

Safe Routes to School Encouragement Programs

The survey also indicated that most ISDs and individual schools that responded did not have any programs or activities to encourage students and their families to walk to school. A few respondents cited unsafe areas around the school, such as a railroad crossing, as a reason for not promoting such activities. A few ISDs cited individual schools with encouragement efforts, such as a bike giveaway to all fourth graders; individual PTAs/PTOs including bike giveaways in their fundraisers; and one ISD that participated in Walk to School Day and used internal district communications to promote the event. Though most schools that responded did not have any encouragement programs, a few schools participated in Walk to School Day, included bike safety and promotional materials in classes, or covered safe walking and biking practices at open houses. One school gave bikes and helmets to students who achieved perfect attendance.

Safe Routes to School Partnerships

About half of the ISDs surveyed had an active partnership with another government entity, such as the city, county, or TxDOT, though only about one-quarter of individual schools had a partnership with another entity. The lower number of partnerships at the individual school level may be attributed to more collaboration with other entities at the ISD level. This may be due to the role of the ISD in bigger picture tasks such as capital plans, while individual schools have a greater level of focus on education tasks.

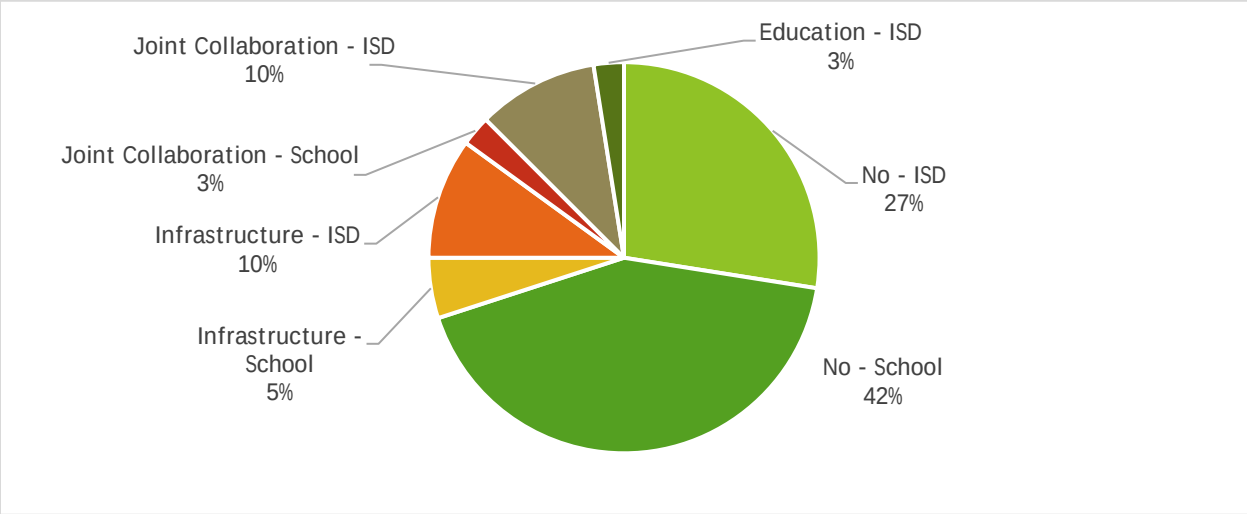
Partnerships among individual school campuses with other government entities included one partnership with police for traffic control, another informal partnership with the local city for campus sidewalk installation, and a partnership with TxDOT.

The reported partnerships ISDs have with local municipalities can be categorized three ways – infrastructure assistance, traffic control assistance, and transportation safety collaboration (Figure 12).

Independent school districts with partnerships that involve infrastructure assistance usually are focused on identifying bicycle and pedestrian safety needs and expansion of

current active transportation infrastructure. Traffic control assistance is characterized as local municipalities either providing or cost-sharing crossing guards at critical student crossing points or working with local police to assist with traffic control around the school campus. Transportation safety collaboration included a more comprehensive effort, including safety education partnerships, or regular joint coordination between multiple government entities regarding school travel safety.

Figure 12: Schools Survey – School/ISD Collaboration with Other Government Entities



Bicycle/Pedestrian Infrastructure Improvements

The survey also inquired about current or recent on-campus infrastructure improvements to bicycle and pedestrian safety. About one-third of ISD representatives surveyed were aware of such projects. Respondents reported projects that were completed or in progress included multiple new school campuses that will have bicycle and sidewalk paths, traffic circulation plan collaboration with the local city for a new school campus, and an existing middle school that is receiving bicycle and pedestrian safety improvements.

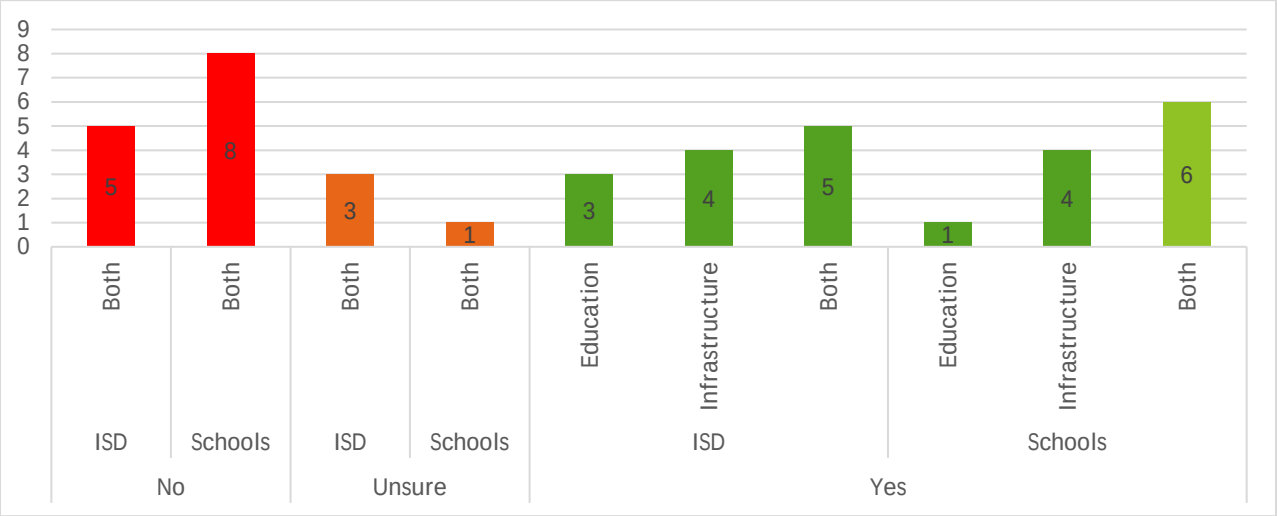
Of the individual school campuses surveyed, only one-quarter were aware of recent or in-progress improvements. Such improvements included a driveway reconfiguration to create a one-way road for pick ups near the bus route on campus, installing walkways for students to safely exit campus, and median fences to control pedestrian flow.

Only four school representatives had any awareness of ongoing roadway projects outside the school campus, with responses ranging from a general knowledge of activity to one school representative reported working with their city on a roadway reconfiguration. Only one ISD representative was able to provide responses about awareness of roadway projects near their schools resulting from collaboration with various government partners to address current congestion issues and prepare for projected growth in their community.

Need for Infrastructure Improvements/Education

The survey gauged the need and/or interest for bicycle/pedestrian infrastructure improvements and/or SRTS education (Figure 13). Of the ISDs surveyed, over half said that their communities would benefit from both education activities and infrastructure improvements. These ISDs responded that bicycle and pedestrian safety education and increased funding for sidewalk and active transportation infrastructure were needs for the schools' communities. Of the individual schools surveyed, just under half of the schools expressed a need for such efforts. Bicycle and pedestrian infrastructure, specifically sidewalks, were also called out as a need for individual schools.

Figure 13: Schools Survey – SRTS Education and/or Infrastructure Needs

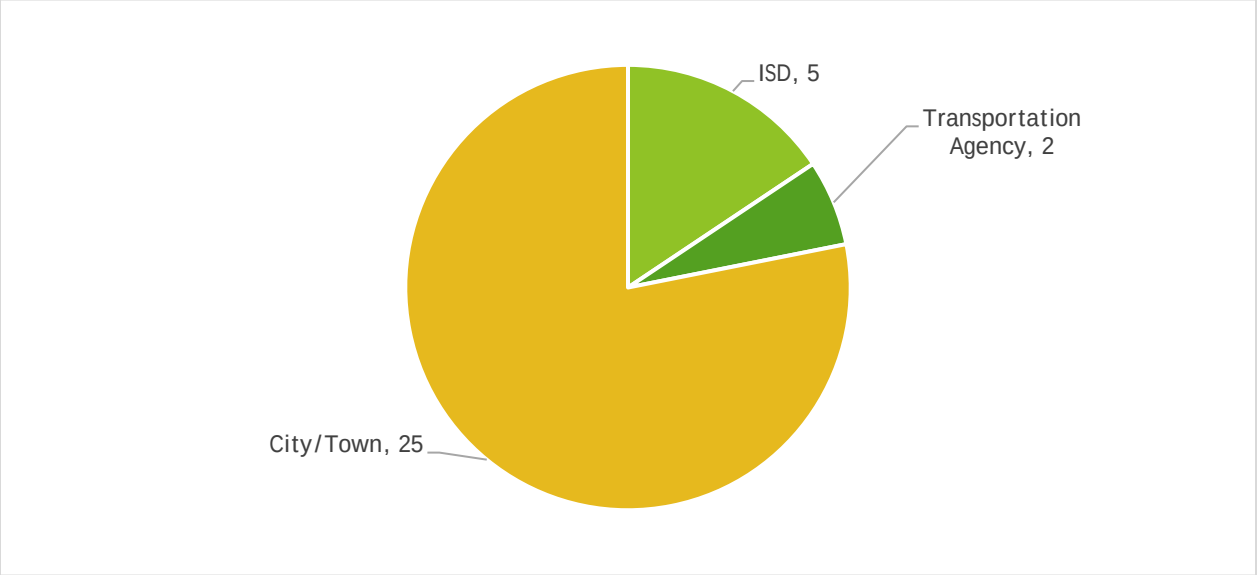


Municipal (Non-School) Survey

The municipal survey was open for responses from August 2022 to November 2022. The survey received responses from cities, towns, a Dallas Area Rapid Transit (DART) representative, a TxDOT representative, and representatives from local ISDs (Figure 14).

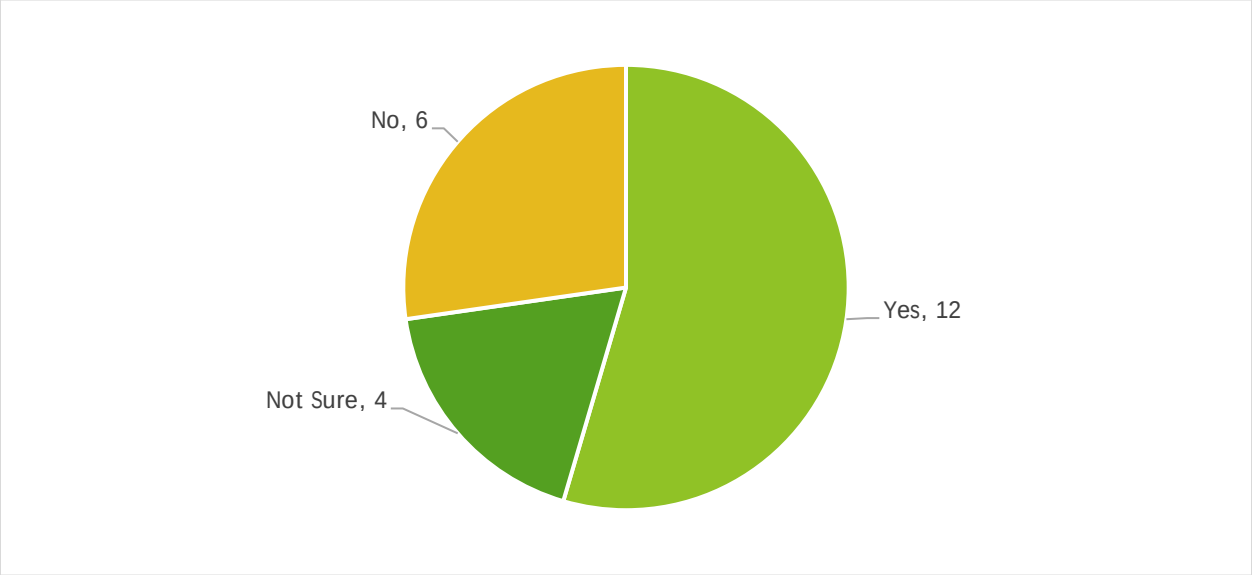
Though this survey was not directly sent to ISD representatives, language in the introduction encouraging initial recipients to share the survey with colleagues who may be able to better answer the survey questions may have steered some local government representatives to share it with ISD groups. The survey received 33 individual responses. The survey included six questions regarding partnerships with local ISDs and schools, current infrastructure improvements, crash data near school campuses, and general need for SRTS education and infrastructure improvements to induce an increase in walking and biking. The full survey is included in Appendix 1.

Figure 14: Municipality Survey – Respondent Organization Type



Most municipalities surveyed had a partnership with a local ISD or school (Figure 15). Many of these partnerships were longer-term collaborative efforts with their local ISD for bicycle and pedestrian safety, though they did not all have a formal program established. These partnerships were called upon for interlocal agreements for infrastructure improvements, encouragement programs for walking and biking at local schools, safety education, and crossing guards. One municipality reported a monthly meeting of city engineering staff, city police, and the local ISD to administer a safety program. Other municipalities partner on SRTS maps, including a formal partnership to communicate bicycle and pedestrian safety concerns and infrastructure requests. Some cities collaborate on Transportation Alternatives applications and/or other funding opportunities and collaborate on planning studies and implementing SRTS plans. One city has a formalized local BPAC with representation from two ISDs located in the city who served as stakeholders on the committee to develop the city's active transportation plan. DART cited their safety education program that they have run since 1996, as well as their involvement in back-to-school events.

Figure 15: Municipality Survey – Collaboration with Local Schools and/or ISDs



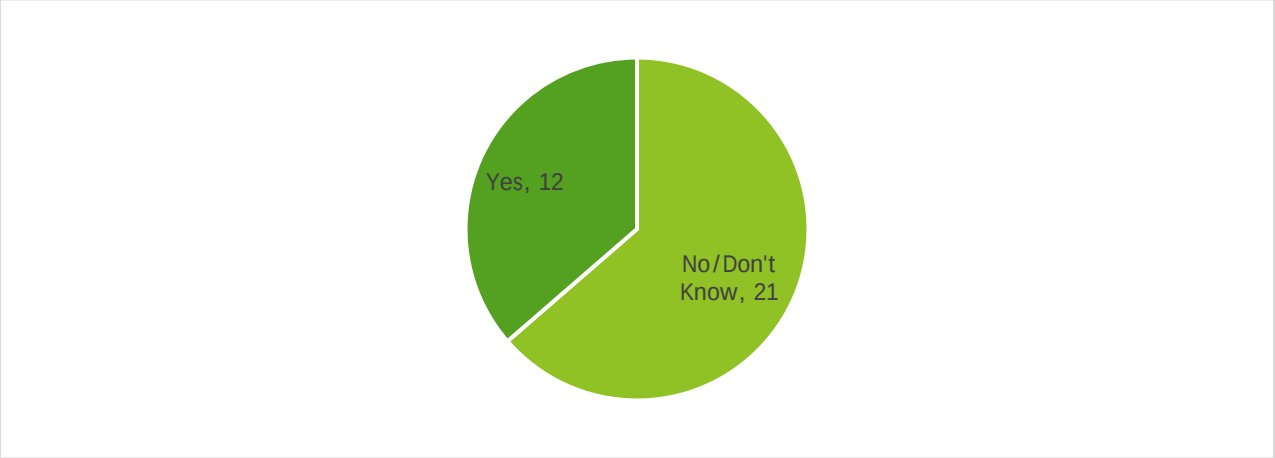
Infrastructure Projects Near Schools

Over two-thirds of responding municipalities reported local roadway projects in progress near local schools. These projects included bicycle tracks, traffic calming measures, sidewalk improvement projects, TA-funded projects, and trail projects. Three ISDs reported nearby projects, which included a sidewalk and two roadway improvement projects.

Bicycle/Pedestrian Injuries and Fatalities

The survey also asked about known pedestrian or bicyclist injuries or fatalities from automobile collisions on or near campus (Figure 16). Over one-half of the respondents were aware of such incidents. Many of these incidents occurred on campus or just outside of campus, often within crosswalks while the student was crossing and a driver was turning but not paying attention to pedestrian activity. In one city, multiple crashes were attributed to faded striping and road curves, both of which reduced visibility. Another city had two incidents that occurred just outside school grounds that the city was not aware of until they spoke to school principals. Two ISD respondents reported that students were struck by cars in nearby intersections while crossing the street.

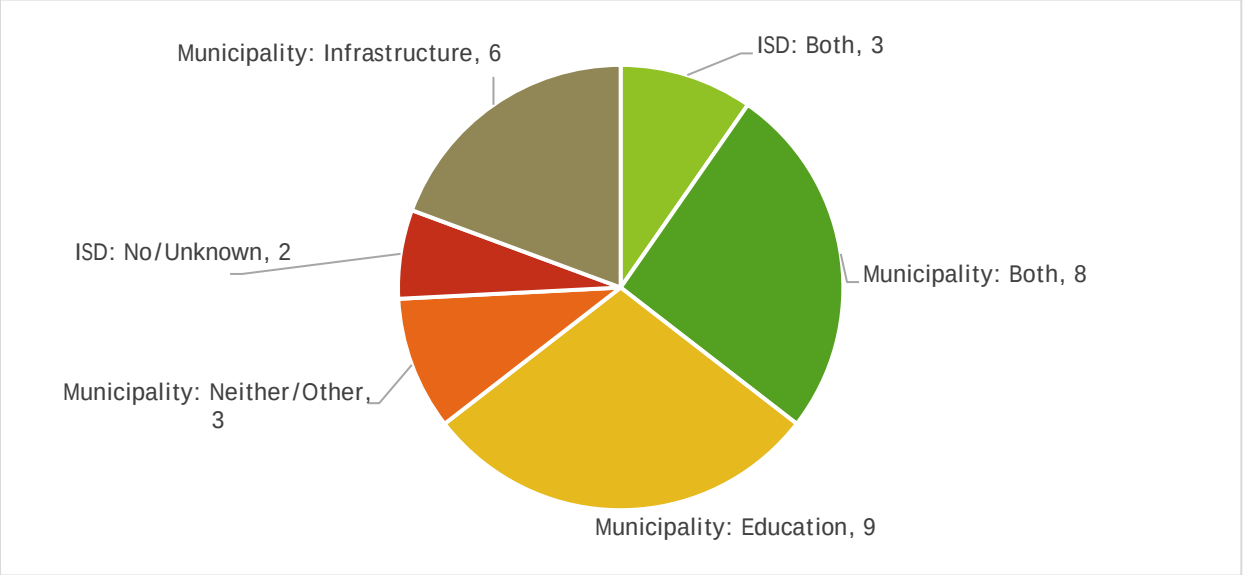
Figure 16: Municipality Survey – Knowledge of Crash On or Near School Grounds



Need for Safety Improvements or Education

About one-third of municipal respondents indicated that there is a need for bicycle and pedestrian safety improvements or SRTS education (Figure 17). Many cities indicated that education would be beneficial to their schools and students; one city responded that their last communication to ISDs on SRTS education was over 20 years ago. Other cities indicated that comprehensive education was needed for safe walking and biking or programs to complement newly installed bicycle and pedestrian infrastructure. Some cities mentioned a need for guidance on how to establish an education program with their local schools. Other cities cited infrastructure as a need in their cities, with labor shortages preventing all crossing guard locations having a guard present, or funding for sidewalk improvements not able to keep up with the demand for the infrastructure. Three ISD respondents pointed to a need for education and infrastructure improvements, citing a lack of safe speeds and wide roadways that students must cross to reach the school.

Figure 17: Municipality Survey – Need for Safety Improvements and/or Education



Survey Conclusions

The school-focused survey revealed a few insights into the current state of walking and biking as well as coordination between schools and local governments. Only eight, or roughly one-third, of individual schools surveyed had any type of education about safe walking and biking habits while an additional six schools were interested in adding SRTS education to their curriculum. Bicycle- and pedestrian-focused infrastructure interventions were identified as a need to help increase the number of students who could safely walk or bike to school. Only one-quarter of surveyed schools had partnerships with local governments, which leaves a large potential to increase collaboration for walking and biking education and encouragement activities such as Walk to School Day. Education and infrastructure improvements are mutually beneficial to local governments and schools within their jurisdiction and can be more effectively tackled by a joint effort between local governments and schools.

The municipality-focused survey similarly revealed potential for greater collaboration between local government organizations and schools within their jurisdictions. Though there was a greater level of collaboration reported between government groups and their local ISDs/schools, most of those partnerships were not formalized. It was also reported that there was some disconnect between school staff and city staff in crash reporting – some cities were unaware of traffic incidents involving students that happened at or next to school campuses. Further collaboration and communication could lead to countermeasures to increase the safety of school students walking to and from their campuses. Formalization of these partnerships would be beneficial to both groups.

NCTCOG's Policy Bundle initiative[12] incentivizes local governments, including cities and ISDs to engage other school stakeholders on SRTS and/or school siting topics by offering Transportation Development Credits (TDCs). In exchange for local governments' adoption of policies that enhance coordination with schools, cities can receive TDCs to offset their local match requirements for federal funding awards. The TA program discussed in Funding: Transportation Alternatives on page I-10 is an example of a funding opportunity where municipalities and ISDs can leverage earned TDCs.

Key conclusion of the two surveys include:

1. *There is a continuous need for increased and formalized efforts for school campuses and ISDs to collaborate and communicate with their local municipalities*. In an era of unprecedented growth in the region, education and local government will need to work efficiently and effectively to best meet the demand of new residents. Figure 8 on page II-2 illustrates the complexities of the relationships between cities, counties, ISDs, and funding eligibility with boundaries such as the Metropolitan Planning Area and Census-Designated Urbanized Areas. The school survey's respondents were mostly from charter school respondents, which may indicate that NCTCOG needs to better engage local public schools and ISDs to assist them in SRTS activities and understand any possible disconnects.

2. *Modern school siting practices have placed schools in areas that are difficult to walk and/or bike to, including siting schools on wide, fast roads that are dangerous for children to cross*. Speeding and increased speeds have a direct relationship with the potential for a fatality or severe injury for a pedestrian in the event of being struck by a motor vehicle. Understanding current risks for students and their families walking

[12] For more information about NCTCOG's MTP Policy Bundle Program, please visit https://www.nctcog.org/trans/plan/mtp/policy-bundle.

and biking to school will help planners better site and design roadways with these travel needs in mind.

Next Steps

1. NCTCOG will continue to engage local ISDs, cities, counties, and other relevant school stakeholder groups to understand current conditions of school travel and safety needs and share funding opportunities.
2. NCTCOG will increase efforts to create introductions between ISDs and local municipalities by hosting meetings between different stakeholder groups with shared areas of jurisdiction and interest.
3. NCTCOG will increase efforts to share relevant safety information and data with its member organizations as it relates to bicycle and pedestrian safety.

III. SAFE ROUTES TO SCHOOL PLANS FOR EXISTING SCHOOLS

To improve children's ability to walk and bicycle to school, it is important to take into consideration the current roadway conditions at and around existing school campuses to arrive at possible strategies for creating safe opportunities for students to walk and bike to school. There are also considerations beyond roads and sidewalks, such as coordination with other jurisdictions, perceptions of parents and students of the school's immediate area, and funding availability. Safe Routes to School plans are developed to engage the local community, identify safety issues, propose solutions, identify implementation strategies, and plan for funding improvements. Completed SRTS plans additionally can make funding or grant applications more competitive compared to applications without a completed SRTS plan.

SRTS plan development includes community engagement; coordination with school and city staff; data collection, including an existing conditions review; walk audit/observations; plan development; recommendations and steps to implement the plan. SRTS plans benefit schools and their communities by identifying safety issues, listening to local experts in the community, and creating actionable steps and recommendations to improve the school area. SRTS plans can build momentum to create change and safer roadway conditions that are more difficult to achieve without a plan in place.

Developing a Safe Routes to School Plan

Community Engagement

The first step in developing a SRTS plan is to gather information from the most knowledgeable sources of the local traffic conditions, neighborhood, and travel habits: the community. School staff, crossing guards, parents, students, and other local community members observe and participate in the drop off and pick up process almost daily and will have a greater scope of knowledge than a city staff planner who is coming to the site. Engagement

can be done formally through surveys or events or can be done less formally through conversations with people during observation. A one-day site observation may not reveal the full scope of the problems that the SRTS plan should attempt to address, and the gaps in knowledge filled by the community will result in the most comprehensive recommendations possible.

Neighborhood Collaboration

Planners can tap into the community surrounding the school to explore establishing SRTS paths directly to schools to remediate circuitous routes created by the built environment around the school. Creating pedestrian- and bike-only paths to connect to schools can dramatically increase safety by eliminating dangerous roadway crossings and reducing travel time. Where a pedestrian path could be created though a residential area, easements may be explored. Neighborhood collaboration may also be needed regarding motorist behavior, pick up and drop off procedures, and landscape maintenance considerations.

Joint Coordination

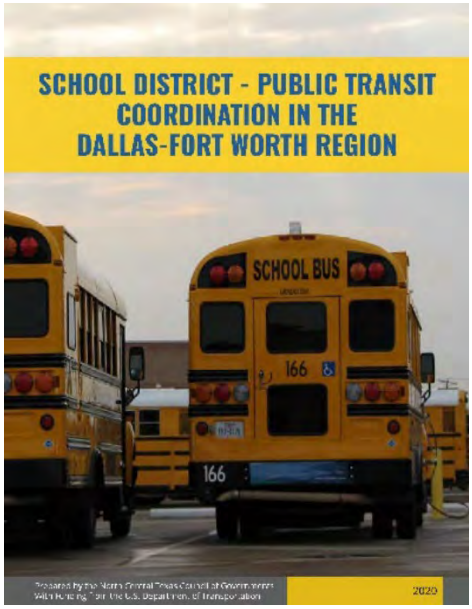
Schools/ISDs, cities, and other relevant parties should collaborate and share knowledge when creating SRTS plans to save time, effort, and money. These groups have different information that is both useful and relevant for a synergetic relationship and the most effective development and service to the groups they serve. Schools and ISDs hold knowledge about where students are traveling from to reach their respective schools, as well as growth of the student body and potential new campus expansions. Cities must approve site plans, master developments, and zoning changes, which are essential to new school construction and roadway improvements. If cities and their school/ISD counterparts do not communicate far enough in advance, there can be problems for transportation and development. For example, if an ISD were planning a new school campus but did not inform the city, there may not be enough time to retrofit the road or build new roads by the time the school needs them.

There are many types of data that are relevant to both ISDs and cities as they both look to best serve their individual populations and ensure the safest conditions possible. This discussion is targeted to SRTS efforts, but NCTCOG's *Planning for Community-Oriented*

Schools: A Guide to School Siting in North Texas[13] report provides a comprehensive list of topics for joint coordination.

Topics for joint coordination related to SRTS plans include joint planning for bicycle and pedestrian safety surrounding school campuses and along popular routes for walking and biking to school, sharing traffic counts on roadways, and communicating about new residential construction and/or demographic projections that may affect demand for schools. This is not a comprehensive list but can serve as a jumping-off point for further relevant discussions.

Public Transportation Coordination



Independent school districts and schools may also be able to coordinate with their local public transportation agencies to find mutually beneficial ways to reduce costs and resource overlap related to transporting students to and from school. This coordination may allow schools to use transportation resources to provide more options for students where school and public bus routes align. NCTCOG completed a study in 2020 titled *School District - Public Transit Coordination in the Dallas-Fort Worth Region*[14] that investigated opportunities for collaboration in the Dallas-Fort Worth region, including interviews with ISDs and transit agencies about current partnerships and future opportunities for resource sharing. Dallas Area Rapid Transit (DART) staff reviewed the report and have since implemented a program providing reduced fair bus passes to students aged 14 years or older with a valid school ID.

Built Environment Existing Conditions

SRTS plans first analyze the existing conditions of the public right-of-way surrounding the school and on routes used by students to travel from their homes to the school. Understanding the context of the school area is necessary to understand students' travel patterns. To understand the school context, planners can use a walk audit. Walk audit participants can assess the current condition of bicycle and pedestrian infrastructure,

[13] The Planning for Community-Oriented Schools: A Guide to School Siting in North Texas report is available online at https://nctcog.org/getmedia/65dfee6f-d689-4955-a614-193b49b2bc3a/SchoolSitingGuide_NCTCOG_2017.pdf

[14] https://www.nctcog.org/getmedia/701bbc0b-8915-4ada-9911-c6a419b1e46d/SchoolDistrict_PublicTransit_FINAL.pdf.aspx

including sidewalks, bike lanes, the conditions or existence of appropriate signage, signalization, and paint conditions; and can also identify unsafe behaviors. Planners can also observe student drop off and pick up procedures to understand how peak arrival and dismissal can affect the surrounding roadway conditions, and how drivers, pedestrians, and cyclists interact in the driveway and on the roadway.

Land Use Contexts

How land is used and development density are key factors in the feasibility of different travel modes. Urban areas with high density allow more students to live closer to school, making walking or biking more feasible. Older urban areas tend to have a more condensed street network, which allows for more direct routes to schools. These areas may already have some bicycle and pedestrian infrastructure such as sidewalks, crosswalks, and signage, so walk audits may be more focused on the condition of such infrastructure or filling network gaps.

Suburban schools may be more challenging to walk or bike to, depending on where the school is sited in relation to where students live. A school sited within a subdivision with short blocks and a high degree of street and sidewalk connectivity better enables students to walk and bike safely, comfortably, and efficiently (Figure 18). School placement and street connectivity in subdivisions are extremely important for walkability. In the DFW region, schools frequently are sited outside of the neighborhoods they serve, often along a higher traffic road with many lanes. In these cases, students may have unnecessarily long travel distances and routes to school that are uncomfortable and unsafe. A school that is sited inside a subdivision but on a street network characterized by long blocks and cul-de-sacs also may not be conducive to efficient, direct routes to schools (Figure 19). Walk audits and existing conditions analyses in suburban areas may be focused on identifying gaps in pedestrian infrastructure and any opportunities to more directly connect school grounds to the surrounding neighborhoods by walking or biking, as well as school driveway observations.

Figure 18: School Sited in Residential Area with High Connectivity

Image courtesy of Google Earth

Figure 19: School Sited in Residential Area with Low Connectivity

Image courtesy of Google Earth

Rural areas often have the lowest ability for students to walk or bike to school from their homes, as school attendance boundaries tend to be larger, and schools often are sited on roads with more traffic and higher speeds. Walk audits and existing conditions analyses may be more focused on driveway conditions and connecting residential areas within walking distance. The considerations for SRTS plans for schools in different land use contexts will be discussed further in this section.

Roadway Types

SRTS plans should assess the type of roadway along which a school is sited. Roads that have higher speeds and volumes may need more significant countermeasures to ensure the safety of students who must walk along it to reach the school. Roads with fewer lanes and lower traffic volumes will be more comfortable for students to walk along and may require different countermeasures.

Road User Behavior

Understanding the behavior of students and their families walking to school, as well as the behavior of drivers both traveling to the school and through the school zone will be important to recommend appropriate countermeasures to create a safe and comfortable environment for SRTS activities.

Targeting SRTS improvements along popular routes helps to ensure that students and their families can walk to their destinations as safely and comfortably as possible. Identifying these routes may indicate places where additional infrastructure is needed, such as a mid-block crossing or sidewalk.

Students, parents, staff at the schools, and the local community can be consulted to include local knowledge of traffic patterns, driver behaviors, student behaviors, and areas they identify where additional countermeasures could curb dangerous behavior. This firsthand information can be used to refine and identify SRTS plan recommendations. Behaviors such as speeding, failure to yield, and lane weaving can be addressed by physical countermeasure recommendations in the SRTS plan.

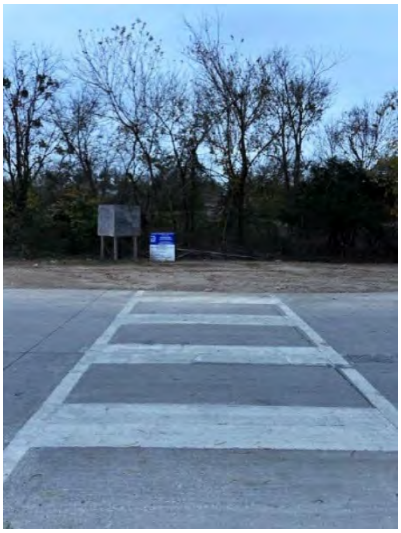
High schools may have additional considerations for bicycle and pedestrian safety, namely on and around their campuses because of the large number of teen drivers. Teen drivers, who have less experience, may not be as aware of bicyclists and pedestrians and may tend to speed. Increasing visibility for pedestrians and bicyclists, as well as ensuring that bike lanes and crosswalks remain well-marked and visible will increase awareness of those spaces and uses to all drivers. Employing vertical deflections such as speed bumps can help to maintain safe speeds in parking lots and driveway areas where possible conflict points may exist. SRTS plans for high schools may have additional considerations for pedestrian and/or cyclist activity if there is a nearby business such as a restaurant, convenience store, and/or retail store that is frequented by students before,

during, and/or after school. Popular routes and crossing locations from the school to these locations should be considered for additional infrastructure protection.

Current School Zone Support/Supervision

Crossing guards and other support staff near and within the school zone are important for traffic management and assisting students to safely walk and bike to school. It is important to strategically identify popular routes and intersections that students must cross to reach the school. If school crossing guards are not present at high-trafficked intersections, students may be at greater risk of harm. Crossing guards can additionally assist in managing high-traffic times during school arrival and dismissal to move vehicles from the school driveway as efficiently and safely as possible.

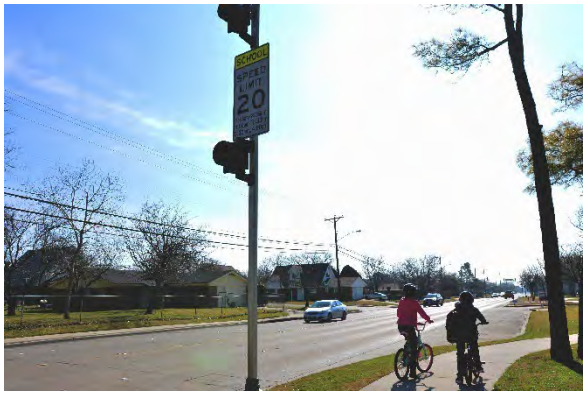
Understanding Barriers to Walking/Bicycling to School



Schools may have barriers that prevent or make it difficult and/or unsafe for students to walk or bike to school. These barriers could be physical, such as disconnected street networks or unsafe crossings; or they could be a grade-separated highway, roadway, or railroad tracks without any pedestrian access to cross. Barriers could also be mental, related to fears about safety. This could include traffic safety, which can be improved with physical infrastructure; or personal safety, related to real or perceived levels of crime. Discussing these issues with the community will help planners understand their concerns and how to address them.

The National Center for Safe Routes to School's 2010 report *Personal Safety and Safe Routes to School* is a resource available for SRTS teams to understand concerns related to students' journey to school. The Safe Routes Partnership additionally published a report in 2015 titled *Taking back the Streets and Sidewalks: How Safe Routes to School and Community Initiatives Can Overcome Violence and Crime*[15] as well as a companion fact sheet[16] that covers personal safety concerns of crime in neighborhoods and offers different strategies and solutions that planners may consider when addressing concerns from local residents.

Identifying Routes to School



Routes to school from neighborhoods should be as direct as safely possible to minimize travel time. Making walking or biking easy is the best way to convince students and their families to consider changing their school commuting habits from personal vehicles. When examining and planning for school trips, it is important to remember that the people who will be traveling along these routes are school-aged children, not adults. Children have lower levels of traffic safety awareness compared to adults, and routes must be planned to allow for a greater level of error.

[15] https://saferoutespartnership.org/resources/report/taking-back-streets-and-sidewalks
[16] https://saferoutespartnership.org/sites/default/files/resource_files/personal-safety-in-safe-routes-to-school_0.pdf

In many areas, the existing street layout may make direct, efficient access to schools a challenge for pedestrians and bicyclists. While existing street networks are not easily changed, SRTS plans can explore if there are other ways to increase connectivity for walking and biking, including off-street pedestrian pathways.

ISDs and local municipalities can analyze the best routes to school by examining current attendance zones overlayed over the local roadway network. It may also be useful to take into account the two-mile radius where students are not bused when considering where students may be walking or bicycling from.

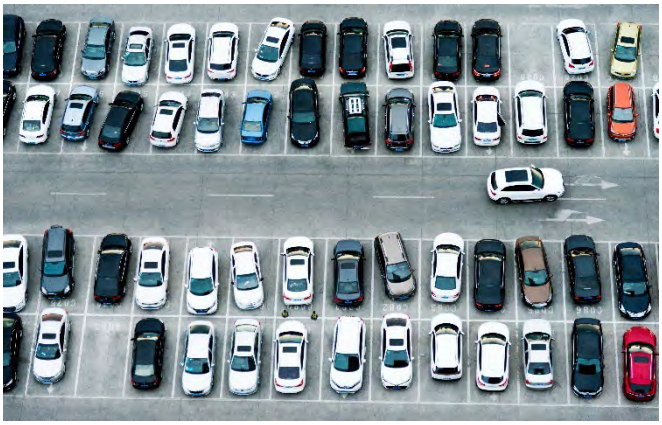
When looking at the roadway network, walking routes running along or crossing roads with higher speeds and/or traffic volumes should be avoided wherever possible. Routes should focus on interior residential roads, which typically have lower travel speeds and traffic volumes. In addition, routes should take advantage of existing sidewalk and crosswalk infrastructure to offer the most protection to pedestrians and bicyclists as possible.

Personal Vehicle Drop off and Pick up Considerations

Students' routes to school do not end at the edge of the school campus; students must also travel safely to the front door of the school. This may include interacting with concurrent personal vehicle drop offs at the start of the day and pick ups at the end of the day. SRTS recommendations can include considerations for safe entry and exit of school grounds by pedestrians and bicyclists. Routes for students should be safe and direct, intersecting the line of car traffic as little as possible. Driveways, drop off circulation patterns, and signage should be configured in a way that emphasizes these direct routes.

Drivers entering and exiting the school driveway can be a high conflict point with bicyclists and pedestrians. If the school driveway is part of a route students use while walking or biking to reach the school, crossing safety can be emphasized by staff members and high-visibility infrastructure to warn drivers of potential pedestrians. Maintaining a high level of visibility allows drivers to identify oncoming sidewalk and roadway traffic, then safely complete entering or exiting the driveway. Driveway considerations can include efforts to maintain the flow of traffic for the road the driveway connects to as much as possible.

Through-traffic on adjacent roadways during the arrival and dismissal period of school is also a consideration for congestion management and traffic safety purposes if students must cross the street to reach or leave school grounds.



High schools may need to consider parking needs and traffic patterns for any students who drive to school, which will increase traffic congestion during arrival and dismissal periods. Multiple points of access for school driveways and parking lots, if well-defined and controlled, are a tool to alleviate congestion that can be compounded with drop offs and pick ups during peak periods.

School drop offs and pick ups can cause traffic congestion during those short peak periods of the day. This large spike in traffic volumes may encourage planners and engineers to consider widening the roadways schools are sited alongside. This is one possible solution, but the utmost care needs to be taken to make sure that this solution is the best and only appropriate solution. Roadway widening increases crossing distances for pedestrians, and can increase speeds, both of which are unsafe for students walking or bicycling to school.

Identifying Bicycle and Pedestrian Safety Countermeasures

There are many kinds of countermeasures that can be implemented for existing schools, including crosswalk additions, roadway reconfiguration through restriping, signage, and other visibility improvements such as parking reconfiguration and tree pruning. Designating space for bicyclists and pedestrians through crosswalks and restriping will prioritize those road users around schools. Signage and visibility improvements will help ensure that drivers will be able to see pedestrians and bicyclists in school zones. The Federal Highway Administration (FHWA)'s Proven Safety Countermeasures[17] include tools for safer bicycle and pedestrian movement. Some of these countermeasures are identified in Figure 20.

[17] https://highways.dot.gov/safety/proven-safety-countermeasures

Figure 20: Selected FHWA Proven Safety Countermeasures to Consider for SRTS

Countermeasure Name	Countermeasure Benefit (FHWA)	Link to Countermeasure Page
Appropriate Speed Limits for All Road Users	"Traffic fatalities in the City of Seattle decreased 26 percent after the city implemented comprehensive, city-wide speed management strategies and countermeasures."	https://highways.dot.gov/safety/proven-safety-countermeasures/appropriate-speed-limits-all-road-users
Crosswalk Visibility Enhancements	"High-visibility crosswalks can reduce pedestrian injury crashes up to 40% Intersection lighting can reduce pedestrian crashes up to 42% Advance yield or stop markings and signs can reduce pedestrian crashes up to 25%"	https://highways.dot.gov/safety/proven-safety-countermeasures/crosswalk-visibility-enhancements
Medians and Pedestrian Refuge Islands in Urban and Suburban Areas	"Median with Marked Crosswalk: 46% reduction in pedestrian crashes. Pedestrian Refuge Island: 56% reduction in pedestrian crashes."	https://highways.dot.gov/safety/proven-safety-countermeasures/medians-and-pedestrian-refuge-islands-urban-and-suburban-areas
Walkways	"Sidewalks: 65-89% reduction in crashes involving pedestrians walking along roadways. Paved Shoulders: 71% reduction in crashes involving pedestrians walking along roadways."	https://highways.dot.gov/safety/proven-safety-countermeasures/walkways
Bicycle Lanes	"Bicycle Lane Additions can reduce crashes up to: 49% for total crashes on urban 4-lane undivided collectors and local roads. 30% for total crashes on urban 2-lane undivided collectors and local roads."	https://highways.dot.gov/safety/proven-safety-countermeasures/bicycle-lanes
Lighting	"Lighting can reduce crashes up to: 42% for nighttime injury pedestrian crashes at intersections. 33-38% for nighttime crashes at rural and urban intersections. 28% for nighttime injury crashes on rural and urban highways."	https://highways.dot.gov/safety/proven-safety-countermeasures/lighting

Low-Cost Countermeasures vs. Reconstruction

SRTS projects do not always need to include multi-million-dollar roadway reconfigurations to be considered successful and make a difference in traffic conditions for pedestrians and bicyclists. Countermeasures such as restriping, signage, or cones are cheap and effective tools that can also serve as a pilot program to test before a more expensive permanent change is made. In addition, cheaper countermeasures can win the support of the community before the city and/or ISD commits to a larger investment in the roadway reconfiguration. Roadway improvements can signal that the city has bought into the neighborhood and is invested in the safety of its road users. “Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections” (Figure 21) is an FHWA Proven Safety Countermeasure and has found that the approach of deploying multiple low-cost countermeasures including enhanced signage and pavement markings improved driver awareness and recognition of intersections and potential conflicts.

Figure 21: FHWA Proven Safety Countermeasure for Stop-Controlled Intersections

Countermeasure Name	Countermeasure Benefit (FHWA)	Link to Countermeasure Page
Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections	"10% reduction of fatal and injury crashes at all locations/types/areas. 15% reduction of nighttime crashes at all locations/types/areas. 27% reduction of fatal and injury crashes at rural intersections. 19% reduction of fatal and injury crashes at 2-lane by 2-lane intersections. Average Cost-Benefit Ratio: 12:1"	https://highways.dot.gov/safety/proven-safety-countermeasures/systemic-application-multiple-low-cost-countermeasures-stop

SRTS Planning Recommendations for Different Land Use Contexts

As previously discussed, different land contexts will require different considerations for SRTS plans. Space availability, students within walking distance, and other factors will require different strategies. Planners creating SRTS plans may need to think differently about their recommendations, depending on the location of the school, student dispersal in the attendance boundary, street network connectivity, and other relevant local factors.

Urban SRTS Plan Considerations

Walking and Biking Access

Urban schools are characterized by a denser population and a more well-connected street grid, increasing the students' ability to walk or bike to school. SRTS plans should invest heavily in the walking and biking infrastructure around the schools and along popular travel routes. Plans can identify infrastructure such as sidewalks, crosswalks, and bike lanes that are missing, not up to standard or damaged. They can also focus on the ways students access the school via pedestrian infrastructure from the surrounding neighborhoods.

Space Constraints

Urban schools are typically characterized by smaller lot sizes compared to more suburban or rural schools. This means that school parking lots and driveways will be smaller, and traffic control during the pick up and drop off periods will be more important. Curb

management will be important to ensure students can safely enter and exit vehicles without entering oncoming traffic lanes. Schools should encourage families to forgo driving to the school to minimize traffic congestion and cars that need to use those limited spaces.

Rural SRTS Plan Considerations

Rural schools often have larger attendance boundaries and larger school lots than urban schools. Often schools are located on the fringe of communities on high-volume roads, which may mean that the school is either too far away for students to walk or bicycle to school, or the roadway is too dangerous to walk or bicycle along. In either case, a rural SRTS plan's focus should be primarily on managing pick ups and drop offs. This includes managing driveway movements, and congestion management on surrounding roads. Pedestrian considerations should focus on moving students as safely as possible from drop off points to the school doors.

Countermeasures that work best at rural schools include visibility improvements such as high-visibility crossings, building complete sidewalks along driveways, and limiting the number of crossings students must complete for the most direct route possible to school entrances.

Suburban SRTS Plan Considerations

Suburban schools may have characteristics of both rural and urban schools, depending on the development pattern of the areas surrounding the school as well as the geography of its attendance boundary. Every school is different, and planners will need to strongly consider the existing land use surrounding the school site when considering the best solutions. For schools sited within a subdivision, there may be opportunities to identify gaps in pedestrian infrastructure, especially if the subdivision does not have a well-connected roadway network, to create pedestrian-only connections to destinations such as schools. Suburban schools that are sited outside of the neighborhoods they primarily serve and that have a low population of students who are able to walk or bicycle to school may need to consider more rural strategies.

Conclusions

SRTS plans are a great first step when evaluating school safety for pedestrians and cyclists to understand the existing conditions of the school and create specific recommendations for infrastructure countermeasures and other school strategies. SRTS plans require collaboration from local stakeholders for opportunities such as joint coordination and taking advantage of public transportation. SRTS plans especially require collaboration with the local community, including school staff, school students, local residents, business owners, and any other local group with local wisdom on the problems and possible solutions to make the focus area safer for all road users.

Planners will need to examine the existing conditions in the built environment, such as land use context, the roadway types on which the school is sited, and roads that students travel on to reach the school. Road user behavior for pedestrians, cyclists, and drivers of all ages will also require consideration. Planners will also need to understand any local barriers to walking or bicycling to school, including safety hazards between the home and school campus, and separately, traveling safely from the edge of campus to the school door. Planners can consider low-cost countermeasures as a possible solution or pilot program when testing SRTS recommendations.

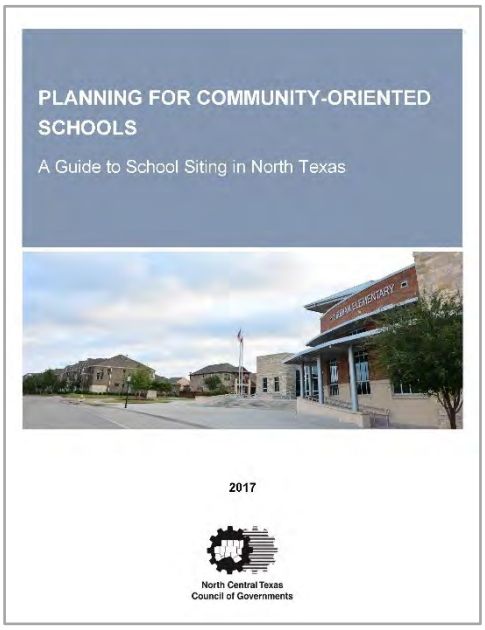
Next Steps

1. Parties interested in completing a SRTS plan:
    a. Read and use the SRTS Toolkit for Planning and Conducting a Walk Audit[18] and other resources related to walk audits in Appendix 2 when planning your own existing conditions analysis.
    b. Review existing SRTS plans on the NCTCOG website and elsewhere for ideas that are transferable locally.
2. NCTCOG will continue to offer technical assistance to cities and ISDs who wish to create SRTS plans.

[18] https://www.saferoutespartnership.org/sites/default/files/walk_audit_toolkit_2018.pdf

IV. NEW SCHOOL SITING

Issues and Trends



As cities and towns of all sizes continue to grow across the region as new roads and homes are built, new schools will be needed to support the student population. These schools must be built with the future in mind to be a community asset for years to come. The focus of this section is SRTS considerations, but for a more comprehensive approach on school siting in the region, please see NCTCOG's 2017 publication titled*: Planning for Community-Oriented Schools: A Guide to School Siting in North Texas*.[12] Regular communication and collaboration between schools, independent school districts, local governments, and other relevant stakeholders is especially important as new developments are being built and ISDs will need to meet the needs of the new student populations in their districts. Future planning helps to ensure that the best possible location for students and the ISD is chosen, and not a lot picked strictly out of necessity and a lack of time to prepare.

Regional Growth Trends and Planning Considerations

NCTCOG releases annual population estimate reports and identifies the fastest growing cities by percentage as well as the cities with the most overall growth per year. The 2022 Population Estimates Publication was released on May 25, 2022[19] and reported the statistics shown in Figure 22 and Figure 23.

[19] This report contained the most up to date data at the time the analysis was conducted, but to access the most recent data and reports, please visit https://popestimates.nctcog.org/.

Figure 22: Cities in NCTCOG Region with Most Growth (2021-2022)

City Name	County Name	Population Added (2021-2022)
Fort Worth	Tarrant	22,170
Lewisville	Denton	19,000
Dallas	Dallas	16,870
McKinney	Collin	6,820
Frisco	Collin	6,530
Celina	Collin/Denton	6,090
Denton	Denton	4,870
Plano	Collin	3,450
Little Elm	Denton	3,440
Princeton	Collin	3,350

Figure 23: Fastest Growing Cities in NCTCOG Region by Percent (2021-2022)

City Name	County Name	Percent Change (2021-2022)
Caddo Mills	Hunt	64.7%
Aubrey	Denton	34.6%
Haslet	Tarrant	34.5%
Celina	Collin/Denton	31.8%
New Fairview	Wise	31.2%
Northlake	Denton	25.2%
Godley	Johnson	23%
Lavon	Collin	22.5%
Royse City	Rockwall	19.7%
Princeton	Collin	18.2%

A map of these cities is available in Appendix 3. For the most recent report, as well as charts of growth estimates for all cities with a population of 1,000 or more, county population estimates, and detailed city estimates for multi-county cities, and population estimates by planning area, see the NCTCOG Population Estimates Website.[20]

Smaller, growing areas in the region may have funding limitations due to funds tied to geographic locations such as the Census-designated Urbanized Area and/or the MPA. Thoroughfare plans in growing cities and counties should consider school travel as well as approvals granted through the platting process for new subdivisions that will affect travel conditions. Municipalities should conduct frequent review of city and county Thoroughfare

[20] https://popestimates.nctcog.org/

Plans and Capital Improvement Plans/Bond Programs for roadway expansion and funding opportunities.

School Siting Constraints

Independent school districts and schools have many priorities and competing interests to balance and only a limited amount of funding to do so. Schools and ISDs must balance their spending on new school construction and land acquisition along with other district priorities. Planning well in advance of new school construction will help ISDs to properly vet locations and find the most suitable ones for new schools. Many of the concepts and ideas explained here are discussed in greater detail in Planning for Community-Oriented Schools: A Guide to School Siting in North Texas.[12]

Land availability and cost are two of the most important factors for schools and ISDs to consider when buying for expansion. ISDs should also consider the available infrastructure of a potential school site, including existing transportation infrastructure, with consideration given to roadway connectivity, bicycle and pedestrian safety, and roadway capacity. Appropriate transportation infrastructure at a potential site will avoid costly retrofitting and safety countermeasures in the future. Another important factor for schools to consider is the available water and sewer infrastructure, as improper or non-existent infrastructure would be extremely costly to remedy during the construction of the school.

School Planning Challenges and Opportunities

Planning processes for new schools present unique challenges for ISDs and municipalities alike. These different entities operate almost entirely independent of one another and often with different boundaries, yet the decisions of one often impact the other. Examples of these planning decisions include school placement decisions for ISDs, and housing developments and zoning changes for municipalities. Government and ISD planning processes differ, as they exist to serve different purposes.

To ensure that a potential new school site can be properly served by the transportation infrastructure around it and create a safe environment for students to walk and bike to and from school, early collaboration with local planning stakeholders is essential. A successful new school site will depend on regular communication between ISDs and local planning stakeholders. An ongoing institutionalized process for communication could include information sharing about new

development projects, population projections, and data sharing for potential school sites. The *Planning for Community-Oriented Schools: A Guide to School Siting in North Texas*[12] guidebook includes a detailed roadmap for collaboration between ISDs and local planning stakeholders at the city and county level. The City of Frisco has a long history of collaborating with ISDs to site schools using a small campus model that emphasizes smaller, neighborhood-oriented schools. Information about Frisco's program can be found in Appendix 4.

Independent school districts and planning stakeholders should learn from previous school siting errors that have created challenges for existing schools to foster safe walking and biking environments for their students. As outlined in the New School Siting section (page IV-1), poor school siting decisions may lead to costly countermeasures to create safer, more community-oriented schools in the future.

School Travel Considerations for New Construction

Due to the high cost of land, and limited availability of suitable sized lots, it is tempting and more common over recent years for ISDs to place new schools in "fringe locations" along the edges of communities or along established major roadways. Schools in these locations are difficult and dangerous for students to walk and bike to. This is due to the potential of far travel distances combined with the possibility of students needing to navigate across higher-volume roadways than a centrally located neighborhood school. There are many examples of growing cities that have found success in prioritizing a central school location in new neighborhood developments, such as Walsh Elementary in Tarrant County's Walsh Ranch neighborhood, which is discussed along with other examples of strategic school planning in *Planning for Community-Oriented Schools: A Guide to School Siting in North Texas*[12] in the Strategies for Siting Community-Oriented Schools section.

Setting Up for Success

When designing school sites, it is important to work with the city and transportation stakeholders at the city and county, and within TxDOT, to create the safest environment possible for students and their families to walk and bike to the school. Planners should proactively plan their safety countermeasures and identify potential issues that may arise before an incident occurs. Instead of reactively fixing problems as they arise, school zones

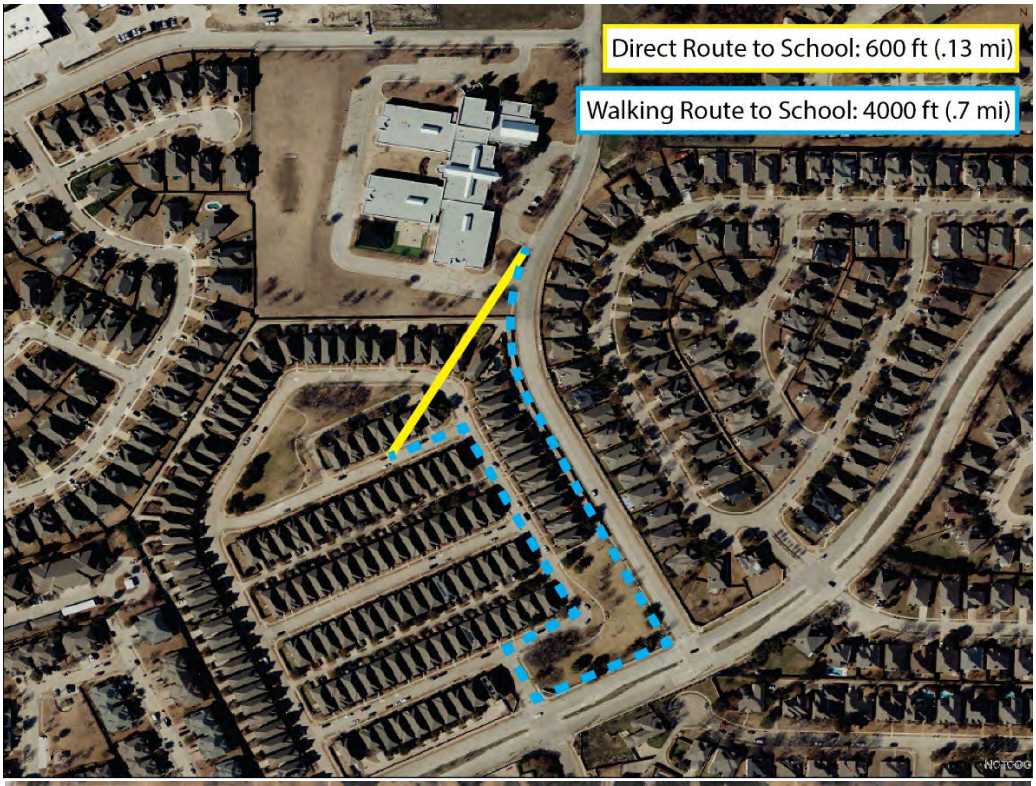
should be planned for maximum safety for pedestrians and bicyclists. ISDs and planners may find it useful to find the anticipated student routes from nearby neighborhoods and residential areas to the school building, as well as student routes from the edge of the school property to the front door of the school building.

Schools should be built with arrival and dismissal traffic in mind, planning the driveway orientation, plans to handle expected traffic volumes, and siting driveways on lower-stress streets whenever possible. Lower-stress streets are generally neighborhood streets with lower speed limits and are more friendly for pedestrian and bicyclist traffic. They also have lower traffic volumes to reduce overall delays in the vehicle network caused by an increase in traffic during arrival and dismissal periods. Vehicular traffic can further be managed and potentially diluted if a school plans multiple points of access. Additional entry points for students traveling by foot or on a bicycle can potentially decrease the overall travel distance for students. Further information on creating safer school sites for walking and biking can be found in *Planning for Community-Oriented Schools: A Guide to School Siting in North Texas.*[12]

Neighborhood Connectivity to School

Maximizing connectivity to schools from residential neighborhoods is a key factor to encouraging more students to walk and bike to school, minimizing car congestion at school sites, and increasing roadway safety around school sites (Figure 24). Roadway connectivity is defined as the density of links in a roadway system, which creates more direct routes and options between an origin point and a destination.

Figure 24: Connected Street Grids vs. Disconnected Street Grids



Connectivity makes routes shorter, and destinations become more available to pedestrians and cyclists. In many cases, students live within a short distance to school "as the crow flies," but the actual distance to walk is longer and not feasible, forcing the child to be driven to school.

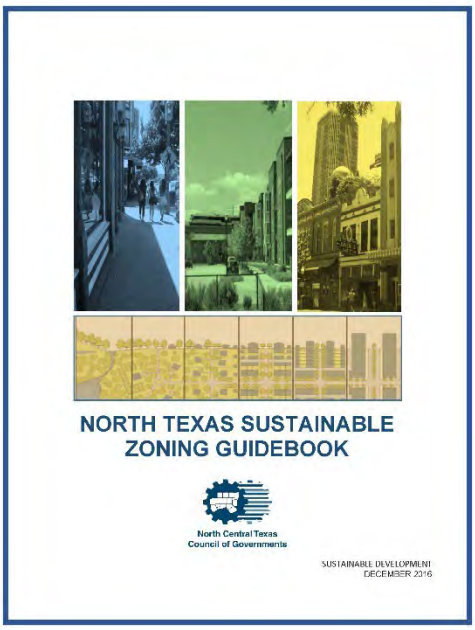
If a family does elect to have their children attempt to walk or bike to school, a circuitous route may require travel along or across a higher-volume roadway to reach the school entrance. This transition to a higher-stress roadway environment may create traffic safety issues related to vehicle speed and safe crossing opportunities. If a new school is sited near existing residential areas but there is not a direct roadway route available to the school, ISDs should consider engaging with local municipalities or county governments to create pedestrian paths and routes to circumvent the long roadway routes.

If students and their families have a safe, direct route option, parents are more likely to allow their children to walk to school. If more families and students walk to school, the roadway environment near the school is often safer and less congested because there are fewer drivers in the same space.

Subdivision Planning for Safe Routes to School

Many modern subdivisions are designed with long, winding roads, low intersection density, and many dead-end roads or cul-de-sacs. New subdivision street networks should be built with considerations for active transportation included. There are many tools and policies that local governments can adopt to further regulate and encourage roadway and neighborhood construction that is conducive to greater connectivity. Such tools may include connectivity indexes, which measure how well connected internally a proposed road network is using a ratio of roadway "segments" and "nodes" (intersections). In the region, the City of Fort Worth has established subdivision design standards

that require new networks to have a connectivity index of 1.4 or higher.[21] Local governments may also consider eliminating or reducing circumstances where cul-de-sacs are allowable and create bicycle and pedestrian connectivity at existing cul-de-sacs to reduce circuitous routes for active transportation modes. More information and strategies are available on the NCTCOG Sustainable Zoning and Development Code[22] web page under "Sustainable Street Design."



Relevant Statistics to Consider

When evaluating a potential site to construct a new school, ISDs should consider many relevant statistics to mitigate traffic congestion and make walking and biking as easy as possible for the school's future students. ISDs should take great care and make the greatest effort possible to site schools centrally inside neighborhoods and anticipated attendance zones. The more centrally a school is located, the greater potential there is for students to live close enough to use active transportation. A centrally located school has a better chance of maintaining accessibility of walking and bicycling to school, even if an attendance boundary were to shift.

Data points that ISDs should consider while evaluating a potential school site include:

- **Percentage of projected students located within:**
  - Quarter mile,
  - Half mile,
  - Three quarter mile, and
  - A mile from the school.
- **Main walking routes from nearby residential areas.**
  - Estimate the travel time of students by walking the nearby roads themselves.
- **The presence of any nearby highways and/or major arterials that may be safety hazards to students and their families walking or biking to school.**
  - Long crossing distances can be hazardous to all pedestrians but especially to small children and senior citizens who may need additional time to cross.

[21] City of Fort Worth Subdivision Ordinance, Page 26: https://www.fortworthtexas.gov/files/assets/public/development-services/documents/subdivision-ordinance.pdf
[22] NCTCOG Sustainable Zoning and Development Code Web page: https://www.nctcog.org/trans/plan/land-use/sustainable-zoning-and-development-code

- **Crash records on the streets surrounding the potential school site to identify any existing issues.**
    - If the school site were to be chosen, roadway safety issues identified by the crash analysis should be remedied before the school is open for students.

The *Global Designing Cities Initiative's Designing Streets for Kids Guide*[23] is an excellent resource for municipalities and ISDs to reference when identifying potential school sites and for the planning and construction of active transportation infrastructure for school students and their caretakers.

Land Use-Specific School Siting and Challenges

School sites located within different land use contexts have unique circumstances and may have different challenges and opportunities for maximizing the available land and connecting the school with the greater community. There are many different factors at play when ISDs consider where to place a new school site, including but not limited to: available lots and their potential costs up front and during construction, existing roadway and environmental infrastructure, where school students live currently, and where new homes may be built in the future.

There are many great tools that ISDs and local municipalities can take advantage of to evaluate potential school lots, including *Planning for Community-Oriented Schools: A Guide to School Siting in North Texas*,[12] which includes a review of Texas State laws, best practices from across the country, and interviews with ISDs, cities, and consultants in North Texas. The Guidebook provides steps for improving city — school district coordination, and strategies for building community-oriented schools. The EPA *Smart School Siting Tool*[24] is another valuable resource, which includes the Assessment and Planning Workbook to help communities understand how well the school siting process is coordinated with land use and other community planning processes, as well as the Site Comparison Workbook, which helps a community evaluate and compare between candidate sites for a proposed school (new or renovated).

[23] https://globaldesigningcities.org/publication/designing-streets-for-kids/
[24] https://www.epa.gov/smartgrowth/smart-school-siting-tool

Urban School-Specific Siting Challenges and Strategies

Urban areas are often characterized by a lack of open space for ISDs to consider when siting a new school. Many times, lot sizes that are available may not be as large as a more suburban or rural area which may change the way that ISDs must consider construction and building planning. If existing, ISDs may want to consider eliminating school acreage minimums to respond to a potential lack of available sites within the acreage minimum that would best serve the new school's future community.

There are many strategies to consider when siting a new school on a smaller lot. One such strategy is to build multi-level schools to shrink the overall building footprint and maximize lot space for other school needs. Well-sited urban schools within the community they serve can additionally benefit from a stronger connectivity to dense neighborhoods. Better connections could allow schools to reduce parent pick up queueing spaces if more students are able to walk to and from school independently or be picked up and dropped off by a parent or guardian on foot. Another strategy ISDs could consider is shared-use facilities through joint-use agreements. This reduces the number of amenities required to fit within a potential lot by sharing parking lots, gymnasiums, libraries, recreational fields, or other school needs with the local municipality or similar group. Though this strategy may not be feasible for all potential schools, shared-use facilities and joint-use agreements can strengthen community relationships and maximize limited resources for the ISD and local municipality. For more information about joint-use agreements, including examples of agreements in the region and information on creating a new agreements, visit the Joint Use Web page[25] on the NCTCOG website.

Rural and Growing Area-Specific School Siting Challenges and Strategies

ISDs in rural or growing areas have the unique challenge of having to anticipate growth and respond appropriately to fit the needs of their populations. The Dallas-Fort Worth metroplex has experienced rapid growth, and projections have shown that this trend will continue as more people move to North Texas. Similar to urban school siting, rural ISDs should consider placing schools where they will be the most connected to the communities they serve. However, these communities may be in the planning stages when ISDs are looking to add a new school. ISDs should communicate with local municipalities

[25] https://www.nctcog.org/trans/plan/bikeped/saferoutestoschool/joint-use-agreements

as early as possible in the planning process to collaborate on the best possible placement for a new school. One possible strategy would be to site a new school within a new developing neighborhood. ISDs, local municipalities, and developers should work together to place the school in a location that will be safe and accessible for students to walk and bike. Local municipalities and ISDs can also consider working together to create a master plan of school facilities to anchor new walkable neighborhoods. Making the school the centerpiece of a new community ensures that new residents will be well-connected to the school community and minimizes the need for families to drive students to school.

Image courtesy of Google Streetview

Conclusions

North Texas has many rapidly developing cities that will need to plan strategically and for the future as new residents move to the region and their cities. ISDs will need to be able to support the new students with appropriate school construction to best meet the needs of students while juggling other priorities. New school expansions should be planned well in advance of their need and done in collaboration with the local municipalities who will understand the current interest and planned development of the area. NCTCOG's *Planning for Community-Oriented Schools: A Guide to School Siting in North Texas*[12] guidebook is a great first step for future planning well-sited schools that will anchor and support new communities.

Though there may be fiscal benefits to choosing a less expensive parcel of land for a new school in a less ideal location for walking and bicycling, ISDs must strongly weigh the ability for students to safely travel to the school as well as the ability to minimize traffic congestion for vehicle drop offs and pick-ups, or the ability to eliminate vehicle trips with walking or cycling to school. Well-connected neighborhoods result in more direct routes for walking and biking.

Planners and developers must also consider the specific land use contexts surrounding a school's new site and design accordingly.

Next Steps

1. Developers and planners: review the *Planning for Community-Oriented Schools: A Guide to School Siting in North Texas*[12] guidebook for additional information on best school siting practices and use the EPA *Smart School Siting Tool*[23] when comparing candidate school sites.
2. NCTCOG will continue to offer technical assistance and foster collaboration among member cities, counties, ISDs, and other applicable stakeholders for school siting and transportation safety.

V. IDENTIFYING AREAS OF POTENTIAL NEED FOR SRTS IMPROVEMENTS

NCTCOG developed a high-level GIS analysis to help to prioritize the allocation of resources, with the goal of improving the ability of students across the region to safely walk and bicycle to school. The intent is that the analysis results would be supplemented with local site analysis and on-the-ground observation as part of regional planning processes.

Two regional analyses were completed:

1. The *transportation safety analysis* quantitatively combined and weighed roadway characteristics and safety data to highlight areas of high concern and potential need for SRTS interventions. The result is a score for each school included in the analysis that indicates the potential need for SRTS interventions.

2. The *environmental justice analysis* is a secondary analysis conducted to highlight areas that may need greater consideration due to environmental justice factors.

The results of these analyses are intended for NCTCOG, planners, and ISDs in the region to use along with their professional judgment when considering the best distribution of funding and other resources. Schools identified in this analysis were limited to the data available at the time of analysis. This limitation does not define the scope of schools eligible for participation in either through NCTCOG's or TxDOT's Transportation Alternatives SRTS program.

All schools included in these analyses were public K-12 schools, including charter schools, located in the 12-county MPA (see Figure 8, page II-2).

Transportation Safety GIS Analysis

Data Used

Data included in the analysis is summarized in Figure 25. These data sets were chosen because literature suggested that they can inform the degree to which the built environment is safe for pedestrians and bicyclists.

Figure 25: Transportation Safety GIS Analysis Data

Data Name	Year(s) of Data	Source	Notes	Score Impact
Public Schools	2021	NCTCOG & Texas Education Agency	Location of public K-12 schools geocoded from coordinates provided.	Locations used for score.
Observed Speeds (actual speeds at which drivers are travelling) – cell phone data	2021	INRIX, NCTCOG	Observed average hourly vehicle speed per collector and arterial roadway segments using cell phone location technology. Two-mile radius of each school site, between 6 am and 9 am, 2 pm and 5 pm for date during school year and date during summer.	Higher speeds indicate a less safe roadway environment for non-motorized vehicle users.
Posted Speeds (speeds as displayed on speed limit signs)	TxDOT 2023 NCTCOG 2021	TxDOT roadway inventory NCTCOG travel demand model	TxDOT roadway inventory posted speeds used where observed speeds unavailable. NCTCOG travel demand model posted speeds used where INRIX observed speeds and TxDOT roadway inventory posted speed unavailable.	Higher speeds indicate a less safe roadway environment for non-motorized vehicle users.
Auto-Only Crashes	2016-2021	NCTCOG, TxDOT Crash Records Information System (CRIS)	Vehicle crashes reported to TxDOT by location. Crashes from limited access roadways (IH 35, Dallas North Tollway, etc.) excluded.	Higher crash rates indicate a less safe roadway for non-motorized vehicle users.
Cyclist or Pedestrian-Involved Crashes	2016-2021	NCTCOG, TxDOT CRIS	Crashes from limited access roadways excluded.	Higher crash rates indicate a less safe roadway environment for non-motorized vehicle users.

Methods

The GIS analysis was completed using ArcGIS Pro's Model Builder function. The analysis combined the various data sets within two miles of each school to identify the schools that had the most crashes and highest speeds within a two-mile radius of their campus. Each data set's totals were normalized so that their sums fell between 0 and 100 so scores could be effectively compared and a final score calculated. The model then calculated the final score for each school based on the normalized data and weights as illustrated in Figure 26**.**

Figure 26: Percentage Weight of Data in Final Calculation

Data Name	Data Weight
"Impact Speed and a Pedestrian's Risk of Severe Injury or Death" Study[11] using the average of INRIX Speed Data school year morning and afternoon windows to approximate risk of severe injury or death	40% *(20% for Risk of Severe Injury and 20% for Risk of Fatality)*
Averaged speed within one mile of schools (observed speed used where available; posted speeds elsewhere)	20%
Cyclist or Pedestrian-Involved Crash Data (2016-2021) within a two-mile radius of the school	20%
Auto-Only Crash Data (2016-2021) within a two-mile radius of the school	20%

Scoring

Cyclist and Pedestrian-involved Crashes

The analysis allocated the most weight to the frequency of cyclist and pedestrian-involved crashes since these types of road users reflect students and their families that engage in SRTS activities. By placing the highest weight on this data category, the model better identified school areas that would most benefit from SRTS infrastructure or other interventions.

Auto-only Involved Crashes

Auto-only involved crashes were scored at the same weight as cyclist or pedestrian-involved crash counterparts because: 1) cyclist or pedestrian-involved crashes are historically underreported; and 2) any form of crash indicates that there is potentially an issue with roadway/intersection layout or design, driver awareness, or another possible factor which could ultimately result in a pedestrian or bicyclist-involved incident. Crashes occurring on limited-access, high-speed freeways where schools are not generally located were excluded. Crashes on state and U.S. highways that are not limited access were included.

Vehicle Speeds

The analysis also considered the average vehicle speed of travel from INRIX speed data, which is a combination of cell phone data and modeling, for all roads within a two-mile radius of the school site. The speed data was used to approximate the potential of severe injury and fatality in a collision with a pedestrian separately since the two categories did not always overlap in their "grading." For example, a vehicle traveling at 40 miles per hour striking a pedestrian would result in a 50 percent chance of fatality but a 75 percent chance of severe injury. These two percentages were scored differently in the final calculation and thus must be accounted for individually. This representation better contextualizes the threat vehicle speeds pose to pedestrians and other vulnerable road users, including students and their families walking or bicycling to school.

Figure 9 in Section II shows the complete breakout from American Automobile Association's "Impact Speed and a Pedestrian's Risk of Severe Injury or Death" study. Though INRIX's cell phone speed data is a more accessible tool to understand vehicle speed, it is a data set with limitations when considering lower volume roads on which some schools may be sited.

In approximately 16 percent of all locations, INRIX speed data was unavailable. In those cases, posted speed limits were used as a proxy of actual speeds. The speed values for these areas are considered conservative because actual speeds are generally higher than posted speeds.

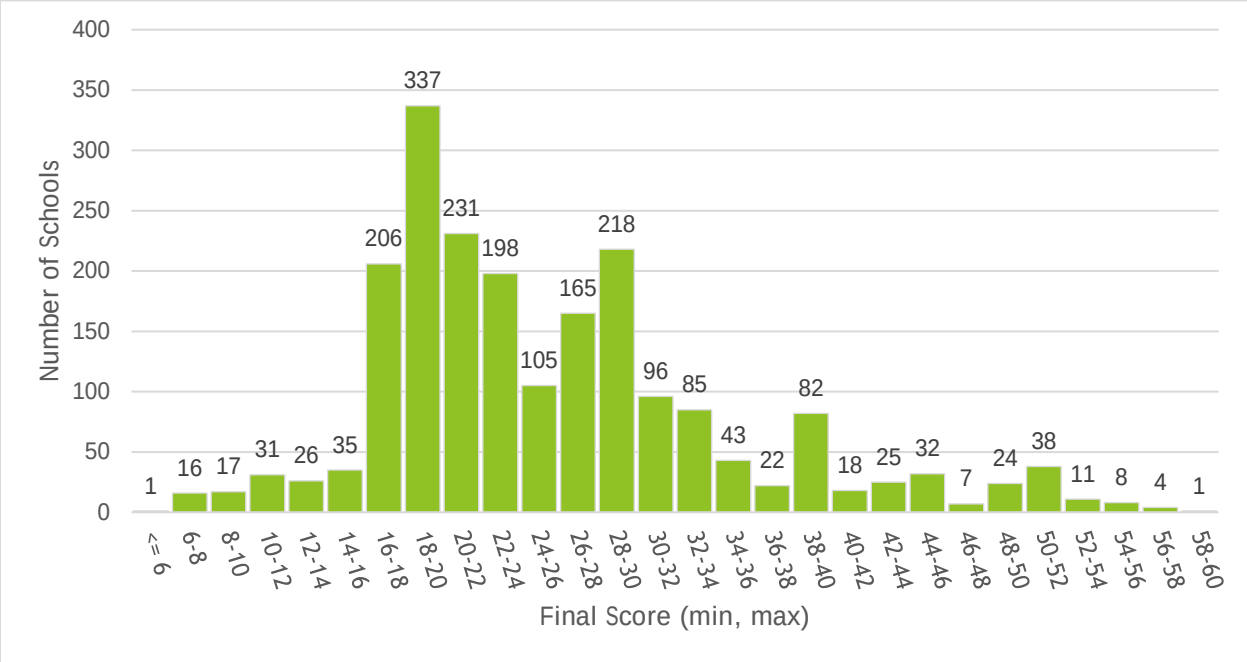
Final Scores

Final scores fall between 0 and 100, with higher scores indicating a school area having more data points that indicate a potential area of concern. The higher a score returned for a school area, the more likely it is that a school could benefit from additional local analysis of the specific need for traffic safety interventions to improve the ability of students to safely walk and bicycle to school.

Results

A distribution graph of scores for all 2,082 schools that had the selected data at the time of the analysis is shown in Figure 27. The highest recorded score across all schools was 59.0 for Pegasus Charter High School in Dallas. The lowest recorded score across all schools was 5.7 for Nola Kathryn Wilson Elementary School in Crandall, Kaufman County (population 145,310 in 2020). Eighty-six percent (or 1,460) schools scored between 16 and 40. Only nine percent (or 168) schools scored above 40. A breakout summary for each county in both chart and map form is available in Appendix 5.

Figure 27: Distribution of Transportation Safety Analysis by School for MPA



The schools with the 20 highest scores across the MPA are shown in Figure 28. Half of those schools fall within the region's two largest cities, Dallas (seven) and Fort Worth (three). In addition, for Dallas and Fort Worth combined, five schools with scores in the top 20 are charter schools.

Given that urban areas and rural areas have different contexts and challenges related to Safe Routes to School, the top 20 results were also broken out into the five counties of the MPA that are primarily characterized by urban development (Collin, Dallas, Denton, Rockwall, and Tarrant) (Figure 29), and the seven predominantly rural counties (Ellis, Hood, Hunt, Johnson, Kaufman, Parker, and Wise) (Figure 30). The map shown in Figure 31 illustrates the distribution of all of the scores and highlights the top 20 regionwide.

For the five urban counties alone, eight of the top 20 schools are in Dallas, while four are in Fort Worth. Also, half of the top 20 schools are charter schools. By contrast, for the seven rural counties alone, the top 20 scores occur across a much larger diversity of cities; in addition, only four in the top 20 are charter schools and none of those are in the top 10. There are also two magnet schools, which can function similarly to charter schools.

For the rural counties, fewer schools (five or fewer for most counties) had scores over 50. Eleven percent (or 207) of schools scored between 16 and 40, compared to 86 percent of schools in the urban counties. Only three percent (or 57) of schools in rural counties scored above 40, compared to nine percent of schools in the urban counties.

There are areas of concern in each county when examined on a county-by-county basis and comparing relative scores in these more similar areas. County-level maps and tables are available in Appendix 5.

Figure 28: Top 20 Scoring Schools in the MPA

School Name	Type	City	County	Final Scores
Pegasus Charter High School	Charter	Dallas	Dallas	59.0
Uplift Luna Preparatory High School/ Middle School	Charter	Dallas	Dallas	57.2
Uplift Ascend	Charter	Fort Worth	Tarrant	56.5
Life School Mountain Creek	Charter	Dallas	Dallas	56.5
Kemp Intermediate School	Traditional	Kemp	Kaufman	56.1
La Academia De Estrellas	Charter	Dallas	Dallas	55.7
Newman International Academy	Charter	Fort Worth	Tarrant	55.3
Ray Braswell High School	Traditional	Aubrey	Denton	55.0
Paloma Creek Elementary School	Traditional	Aubrey	Denton	54.9
Quest Campus (K – 8)	Charter	Dallas	Dallas	54.7
Miller Elementary School	Traditional	Little Elm	Denton	54.6
Harmony School of Innovation/ Science Academy	Charter	Carrollton	Denton	54.4
Joe K Bryant Elementary School	Traditional	Anna	Collin	54.3
Texans CAN Academy (Grant East)	Charter	Dallas	Dallas	53.5
J. Lyndal Hughes Elementary School	Traditional	Fort Worth	Tarrant	53.3
Anna High School	Traditional	Anna	Collin	53.2
Leta Horn Smith Elementary School	Traditional	Princeton	Collin	53.2
Citylab High School	Charter	Dallas	Dallas	53.1
Margaret Taylor Smith Elementary School	Traditional	Forney	Kaufman	52.8
Martin Elementary School	Traditional	Weatherford	Parker	52.8

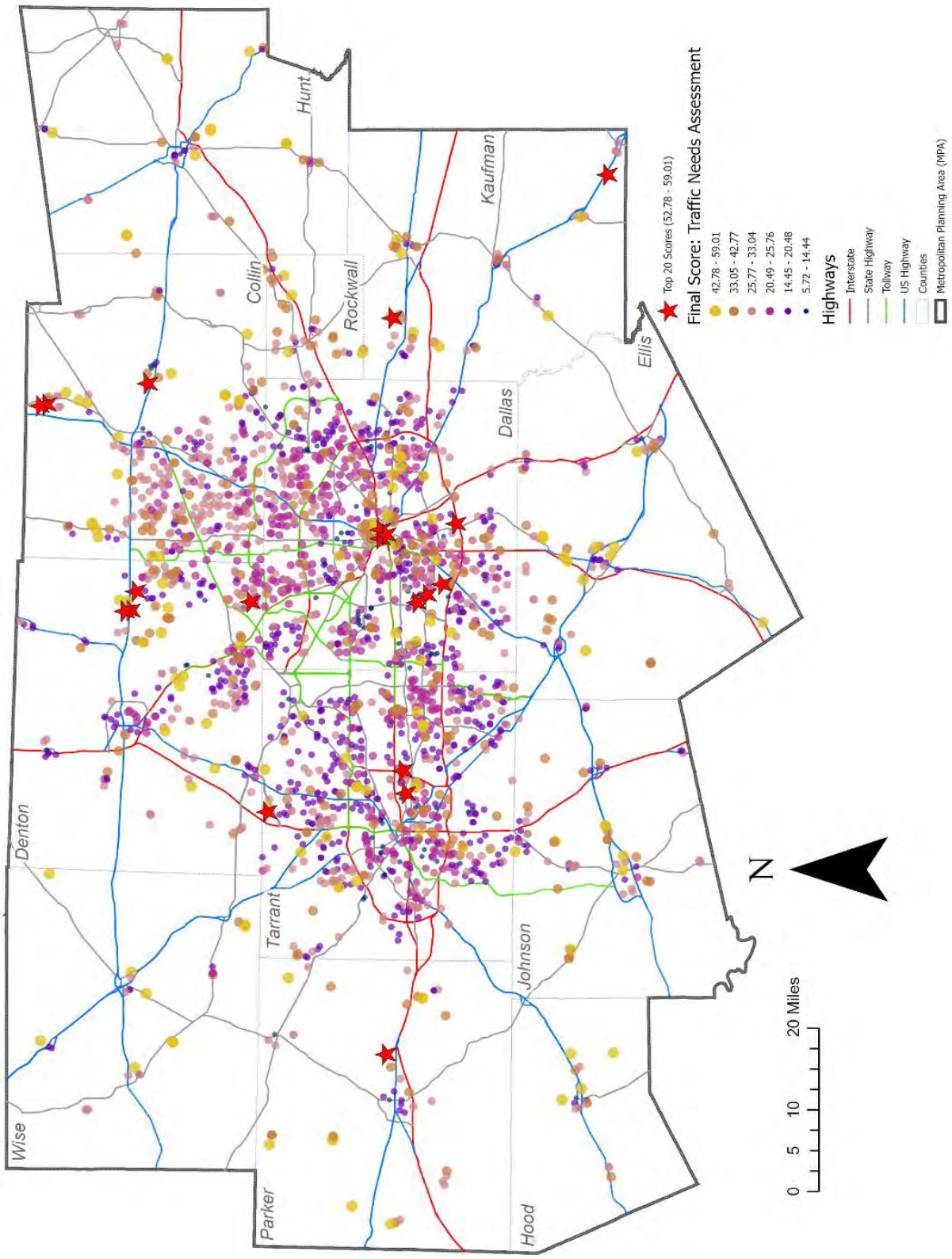
Figure 29: Top 20 Scoring Schools in the MPA Core Urban Counties

School Name	Type	City	County	Final Scores
Pegasus Charter High School	Charter	Dallas	Dallas	59.2
Uplift Luna Preparatory High School/ Middle School	Charter	Dallas	Dallas	57.2
Uplift Ascend	Charter	Fort Worth	Tarrant	56.5
Life School Mountain Creek	Charter	Dallas	Dallas	56.5
La Academia De Estrellas	Charter	Dallas	Dallas	55.7
Newman International Academy	Charter	Fort Worth	Tarrant	55.3
Ray Braswell High School	Traditional	Aubrey	Denton	55.0
Paloma Creek Elementary School	Traditional	Aubrey	Denton	54.9
Quest Campus (K – 8)	Charter	Dallas	Dallas	54.7
Miller Elementary School	Traditional	Little Elm	Denton	54.6
Harmony School of Innovation/ Science Academy	Charter	Carrollton	Denton	54.4
Joe K. Bryant Elementary School	Traditional	Anna	Collin	54.3
Texans CAN Academy (Grant East)	Charter	Dallas	Dallas	53.5
J. Lyndal Hughes Elementary School	Traditional	Fort Worth	Tarrant	53.3
Anna High School	Traditional	Anna	Collin	53.2
Leta Horn Smith Elementary School	Traditional	Princeton	Collin	53.2
Citylab High School	Charter	Dallas	Dallas	53.1
Harmony School of Excellence	Charter	Dallas	Dallas	52.5
Marine Creek Elementary School	Traditional	Fort Worth	Tarrant	52.5
Frank McMillan Junior High School	Traditional	Wylie	Collin	51.8

Figure 30: Top 20 Scoring Schools in the Rural Counties of the MPA

School Name	Type	City	County	Final Scores
Kemp Intermediate School	Traditional	Kemp	Kaufman	56.1
Margaret Taylor Smith Elementary School	Traditional	Forney	Kaufman	52.8
Martin Elementary School	Traditional	Weatherford	Parker	52.8
North Forney High School	Traditional	Forney	Kaufman	52.8
Campbell High School	Traditional	Campbell	Hunt	52.5
Campbell Elementary School	Magnet	Campbell	Hunt	52.5
Alter Learning Center	Traditional	Keene	Johnson	51.9
Acton Middle School	Traditional	Granbury	Hood	51.6
Kauffman Leadership Academy	Traditional	Cleburne	Johnson	51.6
Greenville High School	Traditional	Greenville	Hunt	51.5
Oliver E Clift Elementary School	Traditional	Waxahachie	Ellis	51.1
Young Elementary School	Charter	Decatur	Wise	51.1
Faith Family Master Academy	Traditional	De Soto	Ellis	51.0
Nettie Baccus Elementary School	Traditional	Granbury	Hood	51.0
Hollis T. Dietz Elementary School	Traditional	Heartland	Kaufman	50.9
Scurry – Rosser Middle School	Magnet	Scurry	Kaufman	50.9
Katherine G. Johnson STEM Academy	Charter	Greenville	Hunt	50.7
Pioneer Technology (PTAA)	Charter	Greenville	Hunt	50.7
Life High School	Traditional	Waxahachie	Ellis	50.6
Reno Elementary School	Charter	Azle	Parker	50.6

Figure 31: 12-County MPA with Top 20 Breakout



Discussion

As discussed in the Results, more than half the scores across the 12-county MPA and in the urban counties breakout are for schools in Dallas or Fort Worth. Given that Dallas and Fort Worth are the two largest cities in the region and thus have the most schools, as well as the most traffic, their frequency in the top 20 is not surprising.

The top 20 scores across the 12-county MPA and the five urban counties alone are also dominated by charter schools (mostly falling in Dallas or Fort Worth). Charter schools tend to occur in older urban areas where traditional schools may have been struggling. Since charter schools can draw students from anywhere without being limited to an attendance boundary, they may or may not have a large population of students who live near the school. This has implications for whether Safe Routes to School interventions make sense for charter schools.

A desktop analysis of the charter schools in the top 20 determined that the built environment context of most of these schools appears very similar to non-charter schools. In other words, they are medium-to-large brick-and-mortar schools in or near residential neighborhoods that have at least the potential for students to walk or bicycle to school. While charter schools may draw their student body from much farther distances than traditional schools, it is reasonable to conclude that a portion of the student body of these schools could come from the nearby neighborhoods. Therefore, there is still the potential for these charter schools to benefit from Safe Routes to School interventions in a similar fashion to non-charter schools. Further review of specific charter school sites will provide a clearer picture of the degree of benefit that could result from Safe Routes to School interventions at charter schools.

Schools in urban areas have very different contexts and needs from schools in rural areas related to pedestrian and bicycle safety. Highlighting the differences in scores between the urban and rural counties will help to direct resources to the areas of highest potential need in both rural and urban settings.

Traffic Safety Analysis Considerations

The traffic safety analysis provides a point of reference for consideration of how and where to allocate limited resources for Safe Routes to School planning, funding, and other activities. Like any analysis, there are some potential limitations to keep in mind when considering the results.

Next Steps

1. NCTCOG expects to continue to use and refine this GIS model to include the areas around new schools in the future, and to incorporate new data acquired by NCTCOG and/or different approaches to the analysis.

2. Staff anticipate performing more localized analyses for cities and ISDs as technical assistance to identify city-wide SRTS priorities or to support developing new SRTS plans.

3. NCTCOG will continue investigations into the role of charter schools in the region and implications for Safe Routes to School and school siting.

Environmental Justice Analysis

A separate Environmental Justice (EJ) analysis was completed for each of the block groups that contain school sites scored in the Transportation Safety GIS analysis. The Environmental Justice analysis considered multiple factors that are included in the NCTCOG Environmental Justice Index (EJI), as well as Texas Education Agency's ISD-level information about the percent of students who are eligible for free or reduced-cost lunch. The EJI, which is maintained by the NCTCOG Transportation Department, accounts for the entire 12-county MPA.

Data Used

The data used for the EJ analysis is summarized in Figure 32. Most of these data sets are from the NCTCOG EJI and were chosen because of their proximity to factors that may indicate a greater need for active transportation. More discussion about these data choices is included in the Methods section.

Figure 32: Environmental Justice Analysis Data

Data Name	Year(s) of Data	Source	Notes	Score Impact
School area scores resulting from Transportation Safety Analysis	2021 (Schools), 2023 (Analysis)	NCTCOG & Texas Education Agency	See Section V Identifying Areas of Potential Need for SRTS Improvements for more information about methods and scoring.	Locations used for score.
TEA Free/Reduced Lunch[26] by ISD	2022-2023 School Year	TEA	Eligibility is based on federal poverty guidelines. Data shows the number of students in ISDs that are eligible for the program and the total number of students in the ISD.	Higher percentages of students eligible for the program indicate an area with higher poverty statistics in the school population.
NCTCOG EJI: Total Minority Population by Census Block Group	2021	NCTCOG	Describes the number of total minority persons in the block group.	Higher ratios of minority population vs the regional average scored higher in the analysis.
NCTCOG EJI: Low-Income Populations by Census Block Group	2021	NCTCOG	Poverty threshold used from American Community Survey (ACS) with an income threshold of 125% of the ACS poverty level.	Higher ratios of low-income population vs the regional average scored higher in the analysis.
NCTCOG EJI: Zero-Car Households by Census Block Group	2021	NCTCOG	Describes the number of housing units with no vehicle available.	Higher ratios of zero-car households vs the regional average scored higher in the analysis
NCTCOG EJI: Persons with Disabilities by Census Block Group	2021	NCTCOG	Any civilian, non-institutionalized individual with at least one disability that may limit the individual's ability to care for himself or herself.	Higher ratios of persons with disabilities vs the regional average scored higher in the analysis.
NCTCOG EJI: Population density by Census Block Group	2021	NCTCOG	Number of people per square mile.	Higher rates of population density vs the regional average scored higher in the analysis.

[26] https://tea.texas.gov/academics/learning-support-and-programs/technology-planning/e-rate/e-rate-national-school-lunch-program-eligibility-data

Methods

NCTCOG EJI Analysis

The portion of the EJI analysis that used NCTCOG EJI data was completed using Excel and ArcMap 10.8.1. The analysis combined the various EJ census block group data sets within the MPA that are described above to identify the census tracts in areas characterized by the highest concentrations of environmental justice populations. For each data category, the EJI analysis summarizes the proportion of the census block group's relation to the regional percentage of population with the same attribute. Block group ratios with a value greater than 1 are categorized as a group with a population in a certain category above the regional percentage. Block groups with a value less than 1 are below the regional percentage.

Using ArcMap 10.8.1, ISD-level Free/Reduced Lunch (FRL) data was used to calculate the percentage of the total school population in the MPA that received free/reduced lunch.

The highest recorded percentage of students eligible for the FRL Program was 93 percent from eight schools in the cities of Everman and Fort Worth in Tarrant County. The lowest recorded score was zero percent, which was recorded by eight schools in the cities of Highland Park and Southlake. The most recorded average percentages of FRL-eligible students were between 58 percent and 64 percent, recorded by 459 schools. One hundred and one schools recorded an average percent of FRL-eligible students above 74 percent, suggesting those schools may have the highest environmental justice concerns.

Final Calculation

The final scoring calculation for the full analysis combined the five normalized EJI ratios and the FRL percentage for the highest possible score of 6. The ISD FRL score was added to each census block group. When a census block group spanned multiple ISDs, the average score for each ISD within the block group was calculated.

Results

The analysis was successfully run for 1,824 schools in the region that had the selected data available at the time of the analysis. The highest recorded score, which represents the block groups that contain school areas with the highest levels of EJ concern over the

scoring categories returned, was 3.5 for Frederick Douglass Elementary School in the City of Dallas, Dallas County. The lowest recorded score with the lowest levels of EJ concern over the scoring categories returned, was 1.4 for Lucy Mae McDonald Elementary in the City of Ferris, Ellis County. Seventy percent, or 1,346 schools scored less than 1.8, which represents school populations that may be of the lowest concern. Twenty-four percent, or 444 schools scored between a 1.8 and 2.8, which may represent school populations of moderate concern. Thirty-four schools scored greater than 2.8, which represents school populations of potential highest concern. Figure 33 is a distribution chart of all scores received by schools. Figure 34 summarizes the top 20 scoring schools in the five urban counties of the MPA, while Figure 35 summarizes the top 20 scoring schools by the seven rural counties in the MPA. Figure 36 illustrates EJ scores by block group, while Figure 37 illustrates FRL percentages by block group.

Figure 33: Distribution of Scores by School for Combined EJ Score

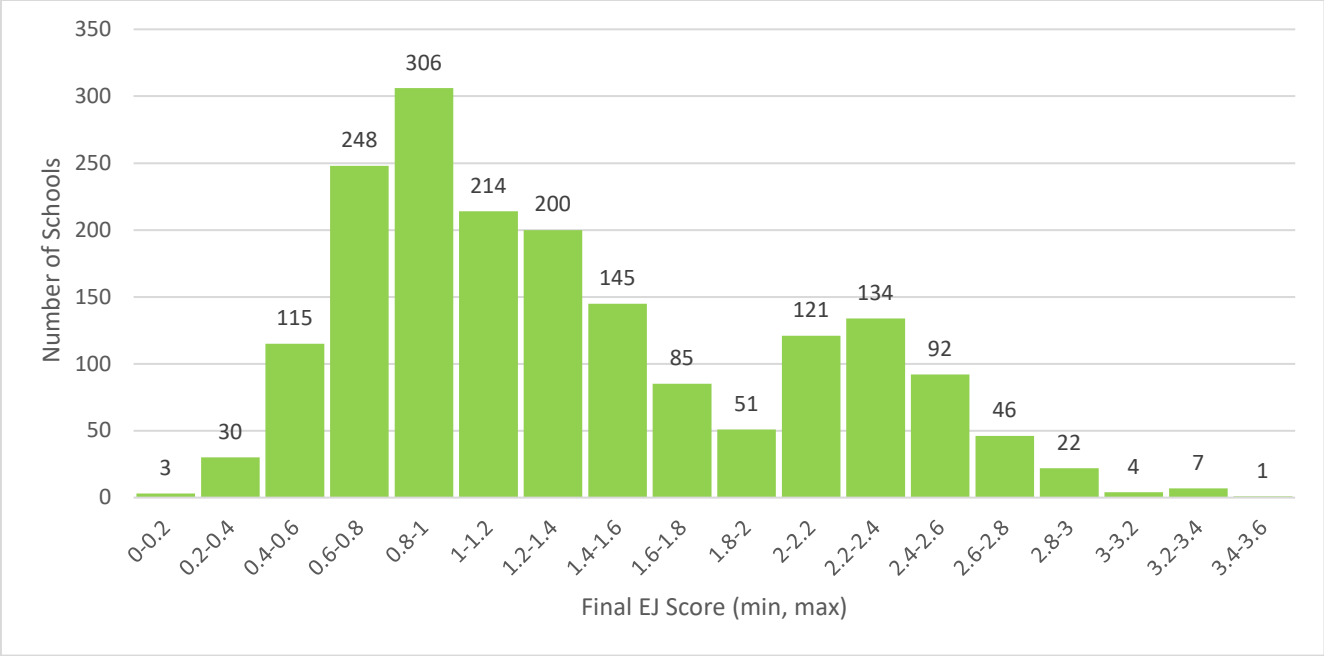


Figure 34: Top 20 Scoring Schools for the Combined EJ Score in the Five Urban Core Counties in the MPA (Collin, Dallas, Denton, Rockwall, and Tarrant))

School Name	City	County	Final Score
Frederick Douglass Elementary School	Dallas	Dallas	3.5
Thomas A. Edison Middle School	Dallas	Dallas	3.4
DRC Campus	Dallas	Dallas	3.4
L.G. Pinkston High School	Dallas	Dallas	3.5
Jill Stone Elementary at Vickery Meadow	Dallas	Dallas	3.3
Elisha M. Pease Elementary School	Dallas	Dallas	3.3
Franklin D. Roosevelt High School	Dallas	Dallas	3.3
A.M. Pate Elementary School	Fort Worth	Tarrant	3.2
Joy James Elementary School	Fort Worth	Tarrant	3.2
Cesar Chavez Learning Center	Dallas	Dallas	3.1
H.I. Holland Elementary at Lisbon	Dallas	Dallas	3.1
Billy Earl Dade Middle School	Dallas	Dallas	3.0
Carroll Peak Elementary School	Fort Worth	Tarrant	3.0
I.M. Terrell Elementary School	Fort Worth	Tarrant	3.0
Fort Worth Can Academy	Fort Worth	Tarrant	3.0
I.M. Terrell Academy for STEM and VPA	Fort Worth	Tarrant	3.0
James Madison High School	Dallas	Dallas	3.0
Van Zandt-Guinn Elementary School	Fort Worth		3.0
Arlington Park Elementary School	Dallas	Dallas	3.0
J.N. Ervin Elementary School	Dallas	Dallas	3.0
Paul L. Dunbar Learning Center	Dallas	Dallas	3.0
Morningside Middle School	Fort Worth	Tarrant	2.9
John Neely Bryan Elementary School	Dallas	Dallas	2.9
D. McRae Elementary School	Fort Worth	Tarrant	2.9

Figure 35: Top 20 Scoring Schools for the Combined EJ Score in the Seven "Rural" Counties in the MPA (Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Wise)

School Name	City	County	Final Score
L.P. Waters Early Childhood Center	Greenville	Hunt	3.0
W.H. Burnett Elementary School	Terrell	Kaufman	2.9
Glen Oaks New Horizons Learning Center Greenville Alternative Educational Program	Greenville	Hunt	2.6
Carver Elementary School	Greenville	Hunt	2.5
Travis Elementary School G.W. Carver Early Childhood Center	Ennis	Ellis	2.5
Team School	Cleburne	Johnson	2.5
J.W. Monday Elementary School	Kaufman	Kaufman	2.4
Houston Elementary School Dorie Miller Intermediate School	Ennis	Ellis	2.4
Head Start Center	Cleburne	Johnson	2.3
Decatur High School	Decatur	Wise	2.0
Travis Elementary School Greenville 6th Grade Center	Greenville	Hunt	1.8
Ferris Intermediate School	Ferris	Ellis	1.7
J.F. Kennedy Elementary School	Terrell	Kaufman	1.7
Greenville Middle School	Greenville	Hunt	1.6
Keene Junior High School	Keene	Johnson	1.6
Central Elementary School Mabank High School Mabank Junior High School	Mabank	Kaufman	1.6
Bridgeport Intermediate School	Bridgeport	Wise	1.5
Russell P. Schupmann Elementary School	Glenn Heights	Ellis	1.5
Commerce High School	Commerce	Hunt	1.5
Lucy Mae McDonald Elementary School	Ferris	Ellis	1.5

Figure 36: Combined EJ Score for MPA by Block Group

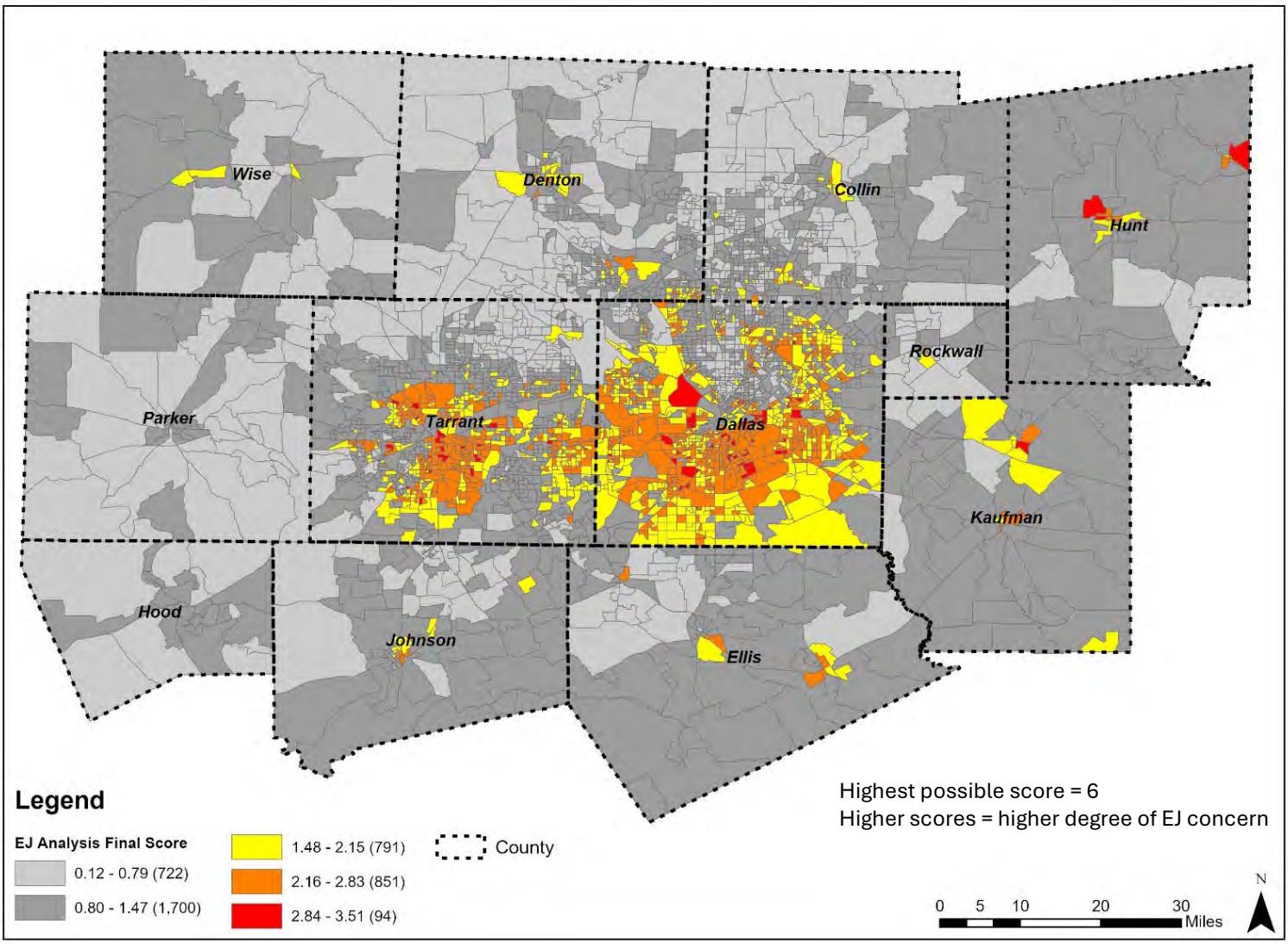
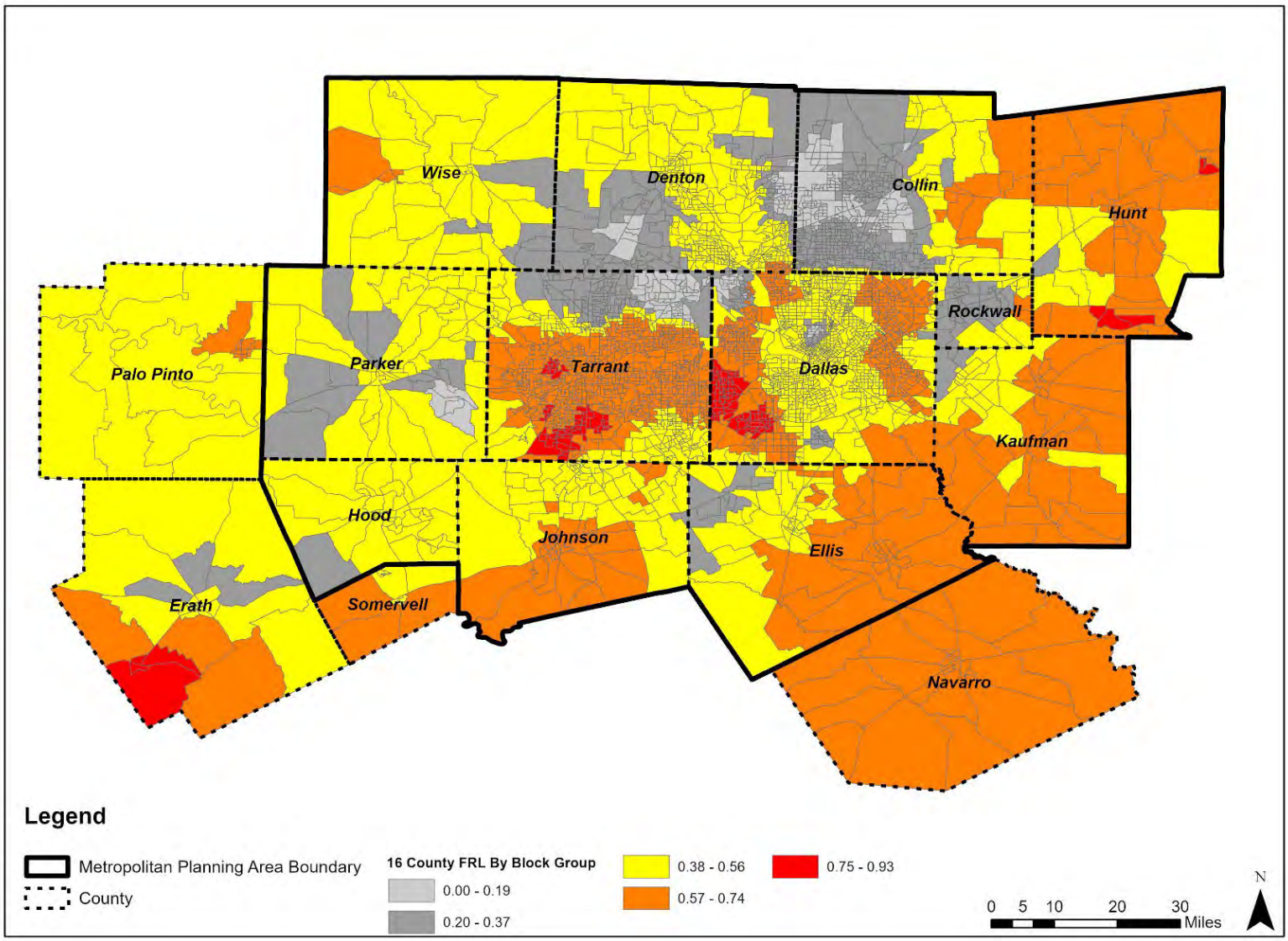


Figure 37: Percent Free/Reduced Lunch by Census Block Group for 16-County Region



Discussion

Charter schools were included in the EJ analysis; however, these populations may not fully conform to the EJ results because they do not have set attendance boundaries like standard public schools. While any school may have students traveling from outside the analysis area (Block Group) to reach their school, this is more likely for charter school populations.

This analysis is a useful tool to better understand the populations of the school and community to better guide land use and infrastructure planning decisions and regarding the allocation of limited resources.

Conclusions

With competing priorities, limited funding, and various data available for different locations, it is useful to understand different perspectives when evaluating schools. Though top scoring schools in each of the analyses may be a good beginning for understanding areas of highest need region-wide, this is not the end of this analysis. It is recommended that cities and ISDs conduct a localized analysis of Transportation Safety and Environmental Justice. The approach in this study is region-wide and reflecting NCTCOG's priorities as the region's MPO. Localized data on a county or city level would be more relevant to prioritizing improvements on a smaller scale and reflecting individual cities' needs and priorities.

Next Steps

1. NCTCOG will continue to evaluate this analysis and update in the future with additional roadway safety and demographic data to ensure the tool is relevant and useful for planners as they make professional judgments regarding schools planning and funding.
2. NCTCOG will offer technical assistance to local governments to complete more localized analyses to assist in funding and planning prioritizations tailored to their communities.

VI. REGIONAL STRATEGY FOR SAFE ROUTES TO SCHOOL

Safe Routes to School and school siting sit at the intersection of many different entities and roles that must work together effectively to best serve their communities and schools. Rapid growth in previously rural areas offers a challenge to smaller cities and unincorporated areas to "get it right" the first time, as it is much more difficult to retrofit a design that is not compatible with safe pedestrian and bicyclist access once it has been built. As development comes in, it may be difficult to keep up with demand, especially in smaller cities with fewer staff. It is vital for municipalities and ISDs to work together to get ahead of growth when selecting future school sites. With population projections, demographic data, and city knowledge of planned development, ISDs can plan and build new schools that are safe and accessible for students in advance of large population booms.

The recommendations below and next steps were developed to better enable municipalities to advance Safe Routes to School and sustainable school siting in the region.

1. Joint Coordination Among Local Agencies

Stakeholders in Safe Routes to School and school siting include regional planning organizations such as NCTCOG, local governments (counties, cities, towns, etc.), ISDs, schools, and other transportation organizations such as TxDOT and local public transportation agencies. These groups must coordinate and communicate to eliminate redundancies, keep each other informed on relevant projects and initiatives, and share data and plans. The data and information each entity may have, such as demographic projections, traffic counts, knowledge of new developments and more, is necessary for effective planning ahead of growth, particularly in fast-growing areas.

Collaboration efforts among different local cities and ISDs to increase walking and biking have occurred in the region. For example, the City of Frisco has established School Zone Safety initiatives in a partnership between the City of Frisco Transportation Engineering Division, Frisco Police Department, Frisco Fire Department, and the Frisco Independent School District. This interdisciplinary partnership celebrates Bike to School Day, Walk to School Day, and has prioritized traffic

safety improvements in school zones. The Frisco School Zone Safety web page[27] also has many resources in their Pedestrian Safety Toolkit, including education materials and videos for students and their families to explore.

NCTCOG will also increase outreach and education efforts to cities and ISDs to effectively encourage and facilitate SRTS and school siting coordination throughout the region.

2. Technical Assistance

NCTCOG's Land Use and Mobility Options program will provide the following activities and resources to assist ISDs and municipalities in their SRTS and school siting activities.

Data Collection and Evaluation

NCTCOG staff have assisted with data collection and evaluation for local municipalities and ISDs to identify SRTS needs and analyze school travel behaviors. This data helps to evaluate progress in Safe Routes to School activities, prioritize infrastructure needs, and support SRTS investment.

NCTCOG staff will continue to monitor and evaluate data related to SRTS trends in the region to identify and explore additional SRTS needs.

Safe Routes to School Coordination

Since early and continual coordination between multiple organizations is essential to successful school siting and SRTS efforts, NCTCOG can assist with identifying and gathering essential stakeholders as determined by a project's needs and facilitating project discussions. Example organizations that should be engaged in these coordination efforts include local governments, ISDs, developers, transit agencies, and any other context-specific relevant agencies and/or groups.

Crossing Guards Implementation and Management

NCTCOG staff are initiating an effort to investigate issues associated with the implementation and management of school crossing guards in the region. An information gathering effort identified a need for best practices and tools to better facilitate crossing guard establishment. NCTCOG applied for and was awarded in 2024, $5

[27] https://www.friscotexas.gov/568/School-Zone-Safety

million from the federal Safe Streets and Roads for All (SS4A) grant program for the project Crossing Students Safely in the Dallas-Fort Worth region (CroSS-DFW). This project will explore crossing guard and school zone safety issues in the region, develop crossing guard and other safety recommendations, and develop a regional crossing guard implementation process that cities and ISDs may use to facilitate crossing guard decision making. Grant activities are anticipated to commence in late 2025.

Charter School and Traditional School Closures

Charter school and traditional school closures have emerged in recent years as areas of concern for cities throughout DFW. NCTCOG has initiated activities to better understand the possible implications of these topics for both SRTS and school siting issues in the region, incorporate the results into current efforts, and develop a plan for next steps.

3. SRTS Planning Assistance

SRTS planning is vital to identify problems and solutions, bring together collaborators, and prioritize projects and locations in need of improvement. In addition, funding opportunities often place emphasis on SRTS analysis or plans being in place. NCTCOG is available to assist local governments and ISDs to create these SRTS plans.

Ongoing Assistance

Staff can provide technical assistance to local governments and ISDs to analyze local roadway conditions to prioritize SRTS needs on an as-needed basis. NCTCOG can also help local governments and ISDs develop implementation tools and funding strategies to bring their SRTS efforts to fruition.

In addition, NCTCOG staff can assist cities and ISDs with prioritizing schools throughout their areas to identify schools most in need of SRTS assistance, similar to the analysis conducted in Regional Strategy for Safe Routes to School (page VI-1), but scaled locally.

Safe Streets and Roads for All SRTS Planning

NCTCOG applied for and was awarded in 2023, $5 million from the federal Safe Streets and Roads for All grant program for the project “Advancing Regional Safety in the Dallas-Fort Worth Region”. Grant activities include conducting roadway safety audits and developing SRTS plans at select schools within one-quarter mile of high-risk corridors

identified in the NCTCOG Pedestrian Safety Action Plan and Roadway Safety Plan. Grant activities began in 2024 and development of a SRTS plan is anticipated to begin in fall 2025.

Transportation Alternatives Program SRTS Planning

As discussed in the Funding: Transportation Alternatives (TA) section on page I-10, the Transportation Alternatives program is a federally-funded, competitive call for projects that funds projects that include on- and off-road bicycle and pedestrian facilities and safety countermeasures, including SRTS projects. The most recent call for projects opened in 2024 and, for the first time, included a category for funding SRTS planning projects in addition to SRTS infrastructure projects. SRTS planning projects may also be eligible in future TA calls for projects. TA calls for projects occur approximately once every two to three years. For more information and updates, visit www.nctcog.org/TAP.

4. Education and Training

NCTCOG provides training for local government and ISD staff addressing issues related to planning and designing for SRTS, project implementation, SRTS-supportive policies, and school siting. NCTCOG also has educational tools available for ISDs and local governments to engage and educate community members on SRTS topics, including school-specific Look Out Texans materials.

5. Encouragement Activities

NCTCOG will continue to encourage participation in Bike & Roll to School Day and Walk & Roll to School Day as well as other encouragement activities and events.

To enhance NCTCOG's promotion of encouragement activities and provide further education, NCTCOG will develop an outreach campaign to local schools and ISDs in targeted areas with the goal of building awareness of the issues and resources available and to build cross-collaboration for future efforts. A goal of this effort will be to raise awareness of NCTCOG's work and increase participation in encouragement efforts.

6. Outreach and Promotion

NCTCOG will continue to reach out to ISDs and local governments to provide SRTS-related presentations to school boards, Parent/Teacher Organizations, and other related

organizations on SRTS topics. These presentations and engagement opportunities are available upon request.

NCTCOG will also continue to promote existing and upcoming SRTS resources and tools available to ISDs and local governments throughout the region to facilitate SRTS activities.

As discussed previously, NCTCOG will develop an outreach campaign to local schools and ISDs in targeted areas with the goal of building awareness of the issues and resources available and to build cross-collaboration for future efforts.

VII. CONCLUSIONS

In a region with continual population growth and complex jurisdictional boundaries, future preparation for accommodating population growth will require early, deliberate, and continuous collaboration and formalized partnerships between ISDs and local governments. NCTCOG's position at the regional level allows for the facilitation of partnerships and coordination among member organizations for mutual benefit in school siting and SRTS activities. Highlights of the Safe Routes to School Regional Action Plan include:

- A large majority of school students in the region are driven to school (2017 National Household Travel Survey), which provides an opportunity to shift the mode of travel for students living within walking distance to schools through safety improvements, education on safe walking and biking practices, and encouragement activities.
- An NCTCOG survey of schools and local governments in the region revealed a potential for greater collaboration among local government and ISDs/schools.
- Recommendations for SRTS planning for retrofits to improve children's ability to walk to school in built neighborhoods by understanding the built environment, including existing infrastructure, routes to school, driveway configurations, and making context-sensitive recommendations with collaboration from the community.
- Recommendations for new school siting situations, given continued regional growth and consequential school siting planning challenges and opportunities.
- The Transportation Safety GIS analysis to quantitatively combine and weigh transportation safety and other data to act as a tool to identify areas of high concern and potential need for SRTS improvements. This analysis can be used to help prioritize resources for SRTS improvements in the region. NCTCOG staff can develop localized versions of the

analysis to assist cities and ISDs with prioritizing SRTS activities.

- The Regional Strategy for SRTS identifies a multifaceted approach to advancing SRTS in the region. This approach includes joint coordination among local agencies, smart development in rural and rapidly developing areas, and NCTCOG technical assistance in a variety of areas.

Summary of Next Steps

Section II: State of the Schools in the Dallas-Fort Worth Region

NCTCOG will:

1. Continue to engage local ISDs, cities, counties, and other relevant school stakeholder groups to understand current conditions of school travel and safety needs and share funding opportunities.

2. Increase efforts to create introductions between ISDs and local municipalities by hosting meetings between different stakeholder groups with shared areas of jurisdiction and interest.

3. Increase efforts to share relevant safety information and data with its member organizations as it relates to bicycle and pedestrian safety near schools.

Section III: Safe Routes to School Plans for Existing Schools

1. Parties interested in completing a SRTS plan should:
    a. Read and use the SRTS Toolkit for Planning and Conducting a Walk Audit and other resources related to walk audits in Appendix 2 when planning your own existing conditions analysis.

    b. Review existing SRTS plans on the NCTCOG website at www.nctcog.org/srts and elsewhere for ideas that are transferable locally.

Section IV: New School Siting

1. Developers and planners: review the *Planning for Community-Oriented Schools: A Guide to School Siting in North Texas*[12] guidebook for additional information on best school siting practices and use the EPA *Smart School Siting Tool*[23] when comparing candidate school sites.

2. NCTCOG will continue to offer technical assistance and foster collaboration among member cities, counties, ISDs, and other applicable stakeholders for school siting and transportation safety.

Section V: Identifying Areas of Potential Need for SRTS Improvements

NCTCOG will:

1. Revise this analysis in the future with updated and additional roadway safety and demographic data to ensure the tool is relevant and useful for planners as they make professional judgments regarding schools planning and funding.

2. Offer technical assistance to local governments to complete more localized analyses to assist in funding and planning prioritizations tailored to their communities.