



# 2014 TIGER Planning Application

## Land Use-Transportation Connections to Sustainable Schools

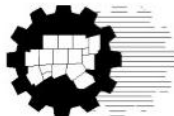


**Location:** Dallas-Fort Worth Metropolitan Planning Area

**Type of Application:** Regional Planning

**Type of Eligible Applicant:** Metropolitan Planning Organization

**Amount of TIGER Funding Request:** \$210,000



**North Central Texas Council of Governments (NCTCOG)**

**Table of Contents**

**I. Project Description.....1**

- A. Project Background
- B. Purpose and Need
- C. Scope of Work
- D. Project Tasks

**II. Project Parties.....16**

**III. Grant Funds and Sources.....16**

**IV. Selection Criteria.....17**

- A. Primary Selection Criteria
  - 1. State of Good Repair
  - 2. Economic Competitiveness
  - 3. Quality of Life
  - 4. Environmental Sustainability
  - 5. Safety
- B. Secondary Selection Criteria
  - 1. Innovation
  - 2. Partnership

**V. Demonstrated Project Readiness.....24**

- 1. Technical Feasibility
- 2. Financial Feasibility
- 3. Schedule

**VI. Fed Wage Rate Certification.....27**

**List of Appendices**

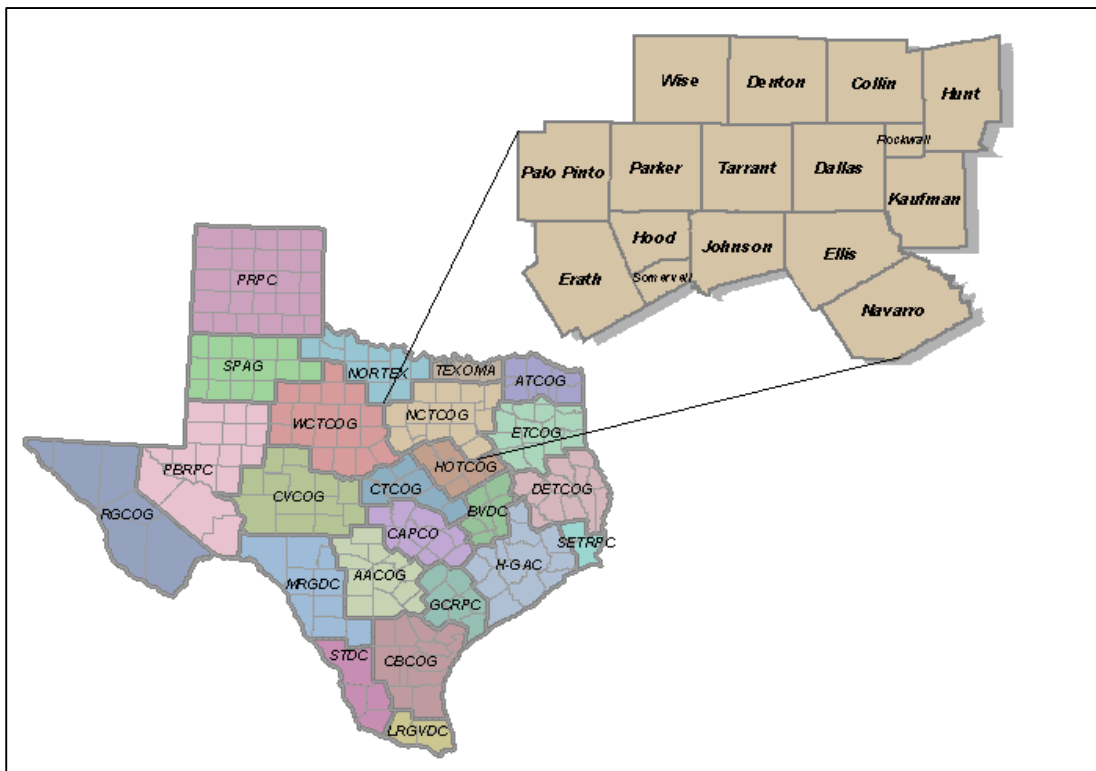
- Appendix A: RTC School Policy
- Appendix B: RTC Letter of Support
- Appendix C: FHWA - Pedestrian Focus City Map
- Appendix D: Bicycle and Pedestrian Crash Density Maps
- Appendix E: Project Budget (2-Years)
- Appendix F: NCTCOG Annual Budget
- Appendix G: Staff Qualifications
- Appendix H: Federal Wage Certification
- Appendix I: References

## Land Use-Transportation Connections for Sustainable Schools

### I. Project Description

The North Central Texas Council of Government (NCTCOG) serves as the federally designated Metropolitan Planning Organization (MPO) for the Metropolitan Planning Area (MPA) in the Dallas-Fort Worth Region, and has prepared the following application that meets the criteria for the Transportation Investment Generating Economic Recovery (TIGER) planning project. The goal of the planning project is to create a regional program and implementation plan for a regional working group to be developed to promote: multimodal transportation options to schools, advance long-term planning for school siting, improve transportation safety near schools, and encourage coordination between local governments, Independent School Districts (ISD), and transit agencies within the 12-county MPA for resource efficiency and sustainability. The planning project is being submitted under the NOFA identified topic - Planning to encourage multiple projects within a common area to engage in programmatic mitigation in order to increase efficiency and improve outcomes for communities and the environment. The amount requested from Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants program is \$210,000.

**North Central Texas Council of Governments (Submitting Agency):** The NCTCOG serves 16 counties in north Texas and is centered around two urban centers of Dallas and Fort Worth. The MPO plans for 12 of those counties within the MPA. The Dallas-Fort Worth (DFW) area is the fourth largest urbanized area in the United States. The MPA encompasses more than 9,500 square miles of land and is the second largest MPA in the country based on land area. The DFW metropolitan area has many needs in an area that is geographically larger than nine states, has a population currently over 6.5 million, and is projected to grow to 9.8 million persons by 2035. Areas in the “sunbelt” are experiencing high population growth, but our transportation systems “grew up” around the car. This pattern has led to increasing challenges of rising congestion, poor air quality, sprawl, isolation, and growing division among communities and classes. There were over 3.6 million jobs within the 12-county area in 2005, and the MPA is projected to have 6.2 million jobs by 2035. **Exhibit 1** shows the NCTCOG region consisting of 16 counties.

**Exhibit 1: North Central Texas Council of Governments (16- County Region)**

The NCTCOG is a voluntary association of cities, counties, school districts, and special districts which was established in January 1966 to assist local governments in planning for common needs, cooperating for mutual benefit, and coordinating for sound regional development.

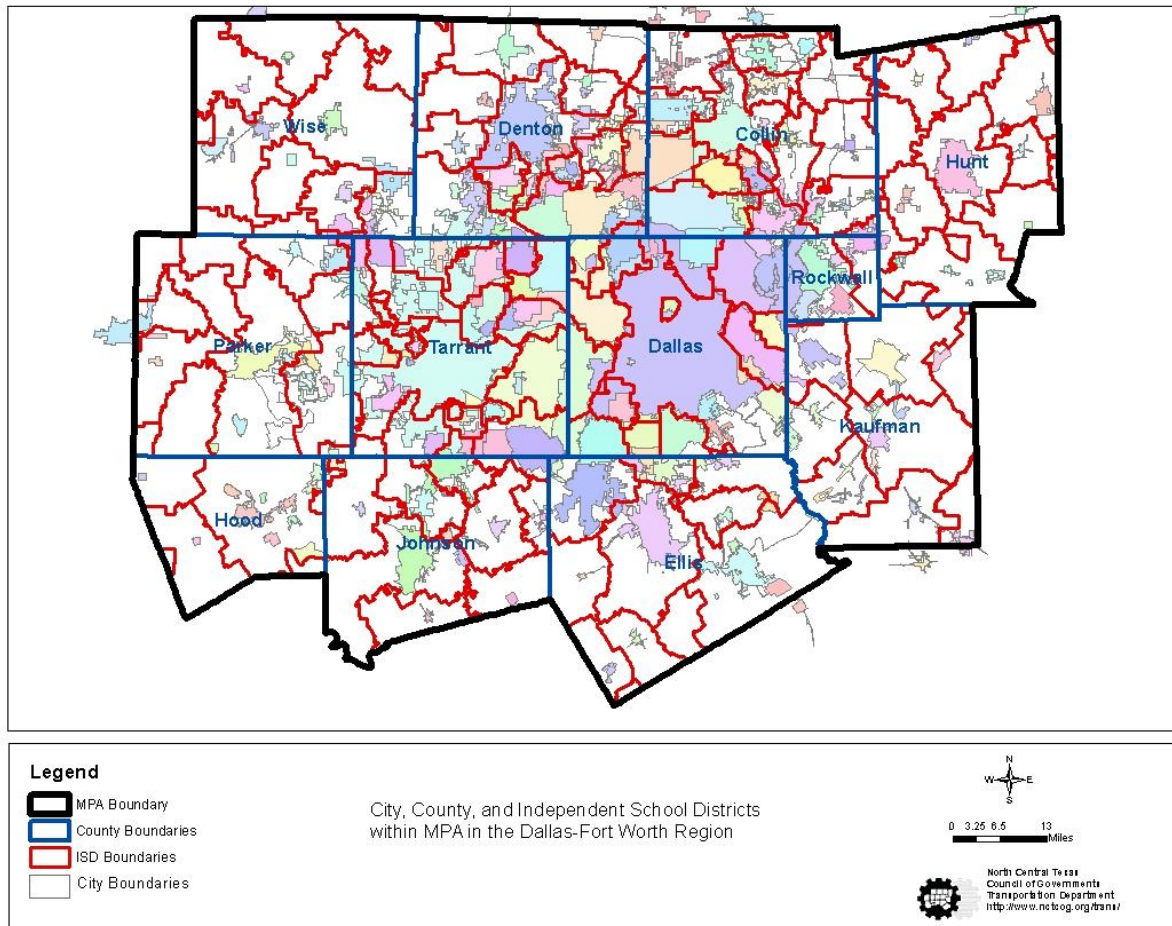
NCTCOG's structure is relatively simple; each member government appoints a voting representative from the governing body. These voting representatives make up the General Assembly which annually elects a 15-member Executive Board. The Executive Board is supported by policy development, technical advisory, and study committees, as well as a professional staff of 307.

Since 1974 NCTCOG has served as the MPO for transportation for the DFW area. NCTCOG's Department of Transportation is responsible for the regional planning process for all modes of transportation within the MPA which is made up of 12 counties. The Department provides technical support and staff assistance to the RTC 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.

**Project Background:** In early 2010, the RTC requested that NCTCOG staff bring together local elected officials and members of the Independent School Districts (ISDs)

to engage in conversations on ways to coordinate on school siting issues related to transportation, land use, and air quality. As shown in **Exhibit 2**, there are 127 ISDs within the MPA.

**Exhibit 2: Local Government and ISD Boundaries within MPA**



On April 21, 2010, the RTC and NCTCOG hosted a school siting workshop. Several local government elected officials and ISD superintendents and facility planners were invited to come together to discuss various issues. Topics at the workshop included current conditions related to school siting issues, an overview of the Safe Routes to School Program, and policies related to the Air Quality Clean School Bus Program. As a result of this workshop, some general next steps were identified including: identifying common concerns and goals, combining funding and other financial incentives, and coordinated planning.

A second workshop was hosted by NCTCOG on February 21, 2011, and included City of McKinney and McKinney ISD (MISD) staff members. Discussion topics included: traffic

congestion, health and safety concerns, Safe Routes to School, and potential community benefits to be realized from coordination on school siting issues. Following this workshop, NCTCOG staff conducted separate interviews with City and MISD staff to learn their specific concerns and challenges related to school facility planning.

A whitepaper was prepared<sup>i</sup> as a tool and resource to identify and address the obstacles associated with school siting not only in the City of McKinney, but in other areas throughout the North Central Texas region as well. It combines a literature review of current studies and other policy documents that highlight the importance of effective school siting throughout the country.

The NCTCOG delivered a presentation on school siting issues to a joint meeting of the City of Denton and Denton Independent School District (DISD) on March 5, 2012. The presentation provided strategies for coordinating inter-agency planning and other issues related to land use and transportation connections. NCTCOG worked with the City and DISD to prioritize needs and safe access was a concern for all. Sidewalk improvements were funded by NCTCOG around two elementary schools in Denton with Congestion Mitigation and Air Quality Improvement Program (CMAQ) funds.

**RTC School Policy:** The RTC approved a school policy on August 8, 2013 to promote coordination in the region between the 209 municipalities and the 127 school districts located within the MPA. The policy contains many innovative strategies for partnership and is provided in **Appendix A**. The proposed project reflects the RTC's School Policy and is consistent with the long range transportation plan for the region, Mobility 2035: The Metropolitan Transportation Plan for North Central Texas – 2013 Update. The grant funds will be utilized to carry out the work that has been stated and to develop the ideas and programs listed in the policy. **Appendix B** includes RTC's letter of support for the project.

**Purpose and Need:** School location choice and the related transportation decisions have significant impacts on housing, transportation, health, economy, and quality of environment. The following are some of the major land use-transportation problems related to schools in the Dallas-Fort Worth region:

**1. Lack of Coordinated Planning:** School districts often operate independent from local governments. ISDs have distinct priorities and responsibilities. However, school siting decisions – whether on the part of the school district or local government – need collaboration with each other. The plans, policies, and projects of one group influences the other. Investments in schools influence growth, and new developments and investments in infrastructure increase the number of children in schools.

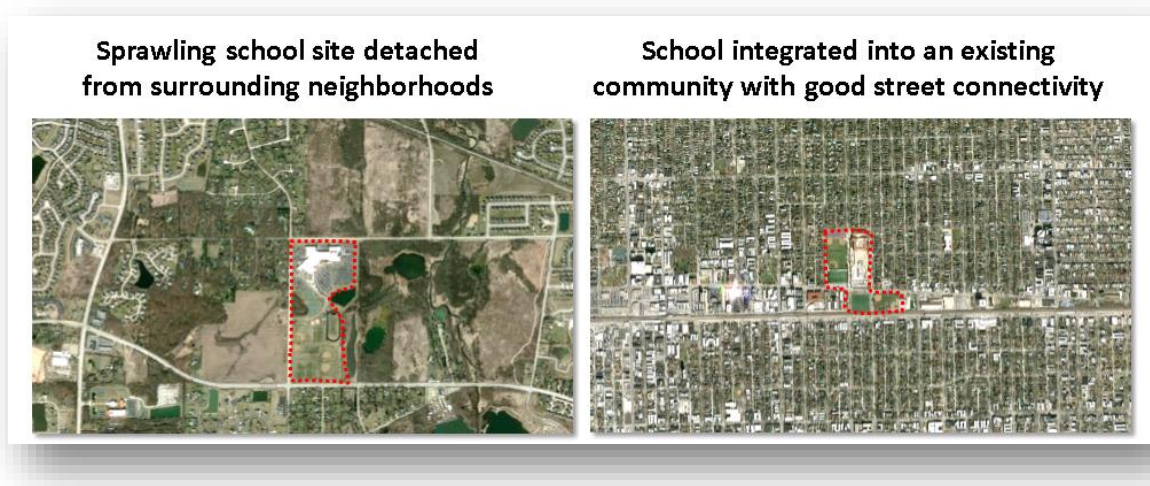
Lack of coordinated planning for multimodal transportation connections between schools and housing is a common challenge in inner-tier cities, fast growing suburbs, and rural areas. There is a need to connect quality schools and affordable housing developments in inner-tier cities to promote attractiveness of schools and housing in those areas for families. In fast growing suburbs, new housing developments are typically approved by cities without adequate coordination with ISDs related to transportation connections to schools and the capacity of schools to accommodate growth. Rural areas have a similar disconnect in transportation options between housing and school locations due to lack of coordinated planning and infrastructure investments. Any disconnect among these mutually exclusive groups can have profound implications for communities, particularly those that are struggling to manage growth.

Given the school siting issues and their impact on transportation, community safety and health, and quality of life, there is a need for more coordination between the school districts and local governments. These two entities have distinct (though often overlapping) responsibilities to the communities they serve. One of the principal barriers to effective school siting is the uncertainty and confusion stemming from the overlapping boundaries of local municipalities and ISDs. Many cities have multiple ISDs within their boundaries, and ISDs are often operating in multiple cities. Cities must balance the individual needs of each of the districts within their boundaries as well as respond to the infrastructure demands created by new and existing schools. Lack of coordination between school facility planning and city long-range planning can cause land use conflicts, traffic hazards, inadequate access, and inefficient use of resources. Likewise, overlapping boundaries require ISDs to understand the local planning processes in multiple cities. Communication among these various parties is critical to understanding growth scenarios, infrastructure demands, and other common challenges.

**2. Land Use-Transportation Problems and School Siting:** Historically, schools had been located in the centers of communities to protect children from heavy automobile traffic and to accommodate pedestrian activity. Since the 1970s, school planning has paralleled real estate development by locating schools along highways and major arterial roadways on the edge of communities rather than the core of communities, often chasing cheaper land and wider roadways to accommodate morning and afternoon auto traffic.

As shown in **Exhibit 3**, Neighborhood schools located in the centers of communities or along well-connected street networks, with bike and pedestrian connections between schools and neighborhoods, encourage students to walk or bike to school more, reducing peak hour traffic congestion, improve air quality, and health of children. Families living close to schools can allow more parent teacher interaction and easier access to extracurricular activities. Current school location trends in the DFW Metropolitan Area not only further fragment communities, but limit walking and biking to school, increase congestion along major thoroughfares which increases commute times and air quality degradation, and promote sprawl. Lack of adequate housing affordable to lower income and working group families in inner-city areas near public, charter, and magnet schools exacerbates the disconnect between transportation, neighborhoods, and schools, while the faster growing suburban cities and ISDs face problems related to lack of land availability, higher prices of land, and lack of adequate infrastructure, difficulty in land assembly due to multiple owners, and planning for future school development.

### Exhibit 3: School Location – Detached and Integrated in Neighborhood



School districts often purchase land for new schools located at the periphery of existing communities based on cost considerations; a lack of coordination among schools districts and local planners may result in the construction of arterial thoroughfares adjacent to sites that the district has purchased and intended for an elementary school; private developers who are required by cities to set aside land for public use like schools sometimes choose to set aside parcels that are prohibitively costly for schools to develop and thus lead to elevated infrastructure costs and further disassociation with the surrounding neighborhoods. **Exhibit 4** shows an example of an elementary school located adjacent to a major six-lane arterial street and the resulting traffic congestion and hazardous conditions to school children due to traffic.



School siting decisions also impact transportation, infrastructure, maintenance costs, and even tax rates/revenues financial burdens absorbed by both the school district and the community at large. When schools are located in previously undeveloped areas, the extension of services and infrastructure related to roads, water lines, sewers, etc. can impose considerable financial burdens to local governments and result in increased fees and taxes to local residents and property owners.<sup>ii</sup> Transportation can

be particularly costly in these situations too. A study conducted in 2000 concluded that school transportation costs had not only increased steadily since the 1930s, but that growth in transportation expenditures “consistently exceeded the growth rates for overall enrollment and the number of students being bused.” Limited funding for bus service: Some ISDs in DFW region have limited resources to operate school bus services, and are considering to collect additional fees or discontinue bus services. Transit agencies in the region have limited ridership on their bus services. There is an opportunity to coordinate on schedules and routes, so that school children can utilize these bus services.

Inner-city schools and neighborhoods in low-income communities in the cities such as Dallas and Fort Worth have a need for safe and affordable transportation connections between schools and neighborhoods through bicycle and pedestrian infrastructure. Suburban ISDs such as McKinney are rapidly growing and have problems in finding suitable sites for school expansion, and similar transportation need to have multimodal transportation connections between schools and neighborhoods. School districts and local governments should come together to fully evaluate the potential costs associated with developing large schools away from neighborhoods and existing infrastructure, versus investigating infill development or some other method of integrating a school into an existing neighborhood. Not only can schools relieve some of the development pressure and preserve open space and farmland, infill development can also save taxpayers from the high cost of building new infrastructure and keep schools located near existing neighborhoods.<sup>iii</sup>

**Exhibit 4: Example of an elementary school located adjacent to a major arterial street, Arlington, TX**



**3. Lack of Transportation Safety near Schools:** Pedestrian crashes are higher in the DFW area compared to the national average. According to Federal Highway Administration, Dallas and Fort Worth were identified as Pedestrian Focus Cities in 2011, based on the number of pedestrian fatalities or the pedestrian fatality rate per population. Cities were identified as pedestrian focus cities if they had more than 20 average annual pedestrian fatalities or a pedestrian fatality rate greater than 2.33 per 100,000 population (more than the annual national average number of pedestrian fatalities). The map in **Appendix C** shows Pedestrian Focus Cities in the U.S.

According to the Texas Department of Transportation's (TxDOT) Crash Records Information System (CRIS) data shown in **Exhibit 5**, approximately 56 percent of bicycle and pedestrian crashes in four core counties (Dallas, Collin, Tarrant, and Denton Counties) occurred within a half-mile radius from a school location between 2009 and 2013. Approximately 60 percent of bicycle and pedestrian crashes in the city of Dallas, and 54 of bicycle and pedestrian crashes in the city of Fort Worth occurred within a half-mile radius from a school location during the same period. Locating schools near major arterials, lack of adequate traffic calming, or inadequate bicycle-pedestrian facilities are some of the causes of these incidences.

Crash density maps in **Appendix D** show Low to Very High densities of Bicycle and Pedestrian crashes with respect to school locations in the four core counties, and specifically in the cities of Dallas and Fort Worth. The Pink and Blue areas show High and Very High densities of Bicycle and Pedestrian crashes and those areas are near school locations.

**Exhibit 5: Bicycle and Pedestrian Crashes in Core Counties (Dallas, Tarrant, Collin, and Denton Counties), 2009-2013**

Year	Total Crashes	Total Bike & Pedestrian Crashes	Total Bike & Pedestrian Crashes within 1/2 Mile of School*	% of Total Bike & Pedestrian Crashes within 1/2 Mile of School
<b>2009</b>	82,740	1,459	807	55.3%
<b>2010</b>	73,965	1,403	805	57.4%
<b>2011</b>	74,964	1,393	799	57.4%
<b>2012</b>	78,541	1,472	831	56.5%
<b>2013</b>	87,319	1,631	889	54.5%
<b>Total</b>	<b>397,529</b>	<b>7,358</b>	<b>4,131</b>	<b>56.1%</b>

Source: TxDOT's Crash Records Information System (CRIS)

Hispanic immigrants were killed in a disproportionate number of crashes of all types. Some of the reasons for crash fatalities in Hispanics was suggested to be cultural differences, language problems, and a lack of familiarity with traffic in the United States may be involved.<sup>iv</sup> According to Dallas ISD, approximately 70 percent of students were Hispanic in 2013. There is a high need for transportation safety education targeting Hispanic students in schools in the inner-city ISDs, such as Dallas and Fort Worth ISDs.

According to the National Highway Traffic Safety Administration, nearly one-fifth (19 percent) of the traffic fatalities in the 14-and-younger age group were pedestrians.<sup>v</sup> Child pedestrian injuries due to traffic are more likely to occur during peak travel times and in settings with high traffic volume and on-street parking, precisely the environment created by large schools located on the periphery of neighborhoods.

**4. Traffic Congestion and Lack of Accessibility:** The shift away from students walking and biking to school has also contributed to local traffic congestion, particularly during peak travel times. In 2007, the Federal Highway Administration noted that non-work travel constitutes 56 percent of trips during the AM peak and 69 percent of trips during the PM peak during an average weekday. Moreover, the study determined that seven to 11 percent of these trips were school related, averaging nearly nine miles per trip.<sup>vi</sup>

In a 2004 study conducted by the U.S. Centers for Disease Control and Prevention (CDC), parents reported that the two primary barriers to children walking to school were distance (62 percent) followed by traffic-related danger (30 percent).<sup>vii</sup> Apart from the financial burdens imposed on school districts and families with school age children, the decline in walking and biking to and from school has contributed to an overall decline in physical activity among children. Active modes of transportation like walking and biking are universally considered to be an important component of healthy lifestyles. Unfortunately, the fewer number of children walking and biking to school is regarded as a contributing factor to such harmful health factors as childhood obesity. The CDC reports that in the past 30 years the percent of overweight children aged six to 11 years has more than doubled.<sup>viii</sup>

Travel behavior has a significant impact on the environment, particularly with regard to air quality, and school-related travel is no different. A 2003 study by the Environmental Protection Agency (EPA) investigated the relationship between school locations, travel behavior, and air pollution and concluded that school location can have a direct impact on local air quality. The study found that “neighborhood schools” (schools built close to students, in walkable neighborhoods) achieved a 15 percent reduction in auto-related emissions.<sup>ix</sup> The results of the EPA study suggest that actions that encourage active modes of transportation like walking and biking to school can help improve environmental quality.<sup>x</sup> Schools located far from the neighborhoods they serve not only discourage healthy activities like walking and biking, they can also contribute to broader environmental health issues as well.

As shown in **Exhibit 6**, not only is traffic congestion around schools frustrating for parents, teachers, and nearby residents, it also creates safety challenges for students, motorists, and pedestrians. Congestion can be a source of traffic crashes and child pedestrian injuries and deaths. Traffic congestion has also been shown to negatively impact local economies through longer commute times, lost productivity and wasted fuel.<sup>xi</sup> Increasing distances between residents and schools, combined with a lack of accessibility for alternative modes of transportation represent barriers to reducing congestion around schools and promoting a safe environment for children and other residents.

**Exhibit 6: Example of traffic congestion and unsafe street crossing conditions at a school site.**



**Scope of Work:** As shown in **Exhibit 7**, the MPO for the Dallas-Fort Worth Region proposes to create a regional program and implementation plan for a regional working group to be developed to address land-use transportation issues related to schools to promote multimodal transportation options to schools, advance long-term planning for school siting, improve transportation safety near schools, and other strategies outlined in the RTC School Policy. The regional working group will brainstorm, discuss, and prioritize strategies as short, medium, and long term needs.

Exhibit 7: Regional Land Use Transportation Problems Related to Schools and Planning Tasks



**Project Area and Pilot Projects:** The overall project area is the NCTCOG 12-County MPA. Pilot project sites may be identified for specific tasks through the planning process in the inner-city areas such as Dallas and Fort Worth, growing suburban locations, and in more rural communities. It is envisioned that a final result of the impact of the TIGER funding and associated tools, research, programs, etc. will be a list of priority programs for the region and will help decision makers from various disciplines prioritize funds. The program will identify needs and opportunities to leverage funds for various transportation

infrastructure projects that would combine project funds from other disciplines such as school planning, housing, community, conservation, health, etc. Those demonstrated multi-disciplinary development projects would be implemented throughout the region, developing a new way to do business and break down silos. School superintendents, teachers, and parents will be included in the planning process to prioritize needs and disseminate the findings from the planning efforts.

### **Project Tasks:**

#### **Task 1. Promote Interagency Coordination:**

An ongoing, institutionalized process for collaboration and communication is an essential part of achieving mutual goals for ISDs and local governments. Regular meetings, frequent data sharing and a mutually understood decision making process available in writing can all contribute to increasing trust and awareness over concerns and challenges. It is also important for communication to involve the right personnel; relationships between policy makers such as city managers and school superintendents and board members will be particularly effective to ensuring that each agency has a handle on how decisions are made. Additionally, cooperation and data sharing between these agencies can ultimately lead to broad, community-wide support for bond initiatives and other local decisions involving members of the community. A regional working group of ISDs local governments, and transit agencies will be developed to promote land use-transportation planning related to schools. Specific sub-tasks include:

#### **Sub-Task A. Create Regional Working Group:**

- a. Create of a regional working group for collaboration between local governments, ISDs, and transit agencies.
- b. Establish mechanisms for successful collaboration and partnerships
- c. Brainstorm, discuss, and prioritize planning tasks.
- d. Identify programs and possible pilot project locations near schools in inner-city and suburban areas.
- e. Coordination between ISD's facility planning and city comprehensive plans and Capital Improvement Plans.
- f. Plan to integrate school transportation into city thoroughfare planning and regional transportation planning.
- g. Coordinate to remove policy barriers to develop sustainable schools (parking, setback, landscaping, etc.).
- h. Identification of federal, state, and local funding resources.

**Deliverable:** Partnerships for the Regional Working Group.

**Sub-Task B. Conduct Regional Workshops:** NCTCOG staff, in coordination with Regional Working Group will conduct at least two regional workshops on school

planning and land-use transportation coordination. The workshops will be utilized to seek input from stakeholders on specific needs, and educate stakeholders on technical analysis and best practices. The topics covered in the workshops will be tailored to selected project topics such as school siting, bike-ped safety near school locations, resource sharing for schools, etc. NCTCOG staff will maintain stakeholder lists, disseminate information on the invites, and will host the regional workshops.

**Deliverable:** Two regional workshops (one each year).

### **Sub-Task C. Conduct Capacity Building and Knowledge Sharing:**

Sharing knowledge among partners will be carried out through bi-monthly meetings held by the partner agencies involved in the proposed projects and structured two peer exchanges. Individual meetings and conference calls with the working group members and stakeholders will be held on regular intervals to discuss progress and needs of partner and supporting agencies on each major task. NCTCOG staff posts resources and meeting information to NCTCOG's website for the partner agencies to view and share. Knowledge will not only be shared by immediate partners but with outside stakeholders as applicable. The resulting findings from the planning studies, policies from pilot programs, and experiences from pilot projects will be replicated in other cities within the DFW region. The technical reports, educational materials, best practice research, policies, programs, and experiences will be shared with the member governments and ISDs. NCTCOG intends on disseminating information and policy lessons learned from the proposed project outcomes to public and private stakeholders, and at other regional, state, or federal events and meetings.

#### **Deliverables:**

- Bi-Monthly Working Group Meetings or conference calls.
- Subcommittee meetings related to specific studies, as necessary.
- Peer Exchange Sessions (2).
- Web Postings of Data and Resources.
- Regional Committees such as Regional Transportation Council and NCTCOG Executive Board.
- Public Meetings associated with proposed tasks, as needed.
- City Council Meeting County Commissioners Presentations as needed.
- State and Federal Conferences as applicable.

### **Task 2. Planning to address land use-transportation problems and School Siting:**

Determining the size, and other required and desirable criteria for a school site and the potential enrollment can be a balancing act. ISDs need to consider the cost of land acquisition against the increased demands remote sites place on traffic, accessibility,

safety, and infrastructure. Communicating these issues to local governments and other involved stakeholders is an important step for achieving mutual benefits for a school district and community. This task will include research on school siting requirements, research on landbanking programs related to schools, and to design a pilot Landbanking Program for future school siting to integrate quality schools, reasonably priced housing, and transportation connections. Specific tasks include:

- a. Review of State Legislation and policies for landbanking and school siting requirements.
- b. Best Practice research on landbanking programs.
- c. Develop a Program for planning, establishing, replenishing, and maintaining acquisition funds and/or landbanking for school siting.
- d. Coordination between ISD, city, and regional demographic projections for future demand for schools and housing.
- e. Identification of partnerships and funding sources.

**Deliverables:** Landbanking Program for school siting, information sharing on growth projections between cities and ISDs, funds and partnerships identified.

### **Task 3. Planning for transportation safety in school locations:**

This task addresses safety issues associated with school-related transportation. The proposed sub-tasks include analysis to promote safe ways for children to get to and from school including education, evaluation, and encouragement. With input from the Regional Working Group, staff will evaluate the need and prioritize a variety of the tasks below:

- a. Identification of pilot project sites.
- b. Conduct safety audits.
- c. Create recommendations for school and traffic safety.
- d. Design pedestrian and bicycle safety programs targeted at Hispanics in inner-city ISDs and other ISDs with high percentage of Hispanics.
- e. Create bilingual transportation safety information guide that clearly explains common U.S. traffic laws, signs, rules, and behaviors. Such a guide should be available in Hispanic community centers, government offices, schools, and other locations.

**Deliverables:** Based on the identification of priorities by the Regional Working Group, some of the deliverables under this task can include:

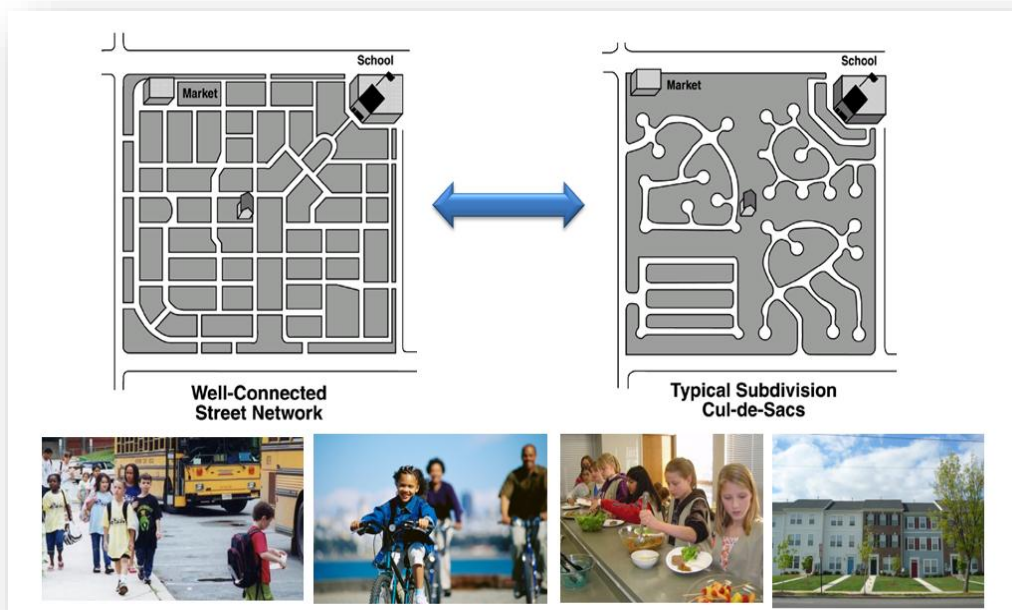
- Safety audits for identified pilot projects.
- Recommendations for bike-ped safety near school locations.
- Pedestrian and bicycle safety programs targeted to Hispanics in inner-city ISDs and other ISDs with high percentage of Hispanics.
- Bilingual transportation safety information guide for Hispanic students.



**Task 4. Planning for transportation options and accessibility:** School transportation is an often overlooked item in local and regional transportation planning and capital improvements programming, yet it is a crucial component affecting the daily transportation choices of all residents in a community. As shown in **Exhibit 8**, school location and a well-connected network of streets influences travel times, traffic congestion, vehicle miles traveled (VMT), and air quality. NCTCOG staff will analyze transportation connections between housing and schools in existing inner-tier cities, fast growing outer-tier cities, and rural areas to identify needs for school location choice and coordination and also housing needs in areas experiencing flight (inner city to suburbs). NCTCOG staff will perform two to three technical tasks to promote multi-modal transportation options, reduce congestion, and promote air quality:

- Evaluate transportation connections between housing and schools in existing inner-tier city pilot projects (specifically low-income areas).
- Evaluate transportation connections between housing and schools in fast growing outer-tier city pilot projects to identify needs for school location choice and coordination.
- Evaluate transportation connections between housing and schools in rural area pilot projects to identify needs for school location choice and coordination.
- Analysis of traffic congestion and travel flow patterns for access, air quality and emission reduction initiatives such as anti-idling policies and reduction of VMT opportunities, and safety issues at pilot locations in partnering cities.

### Exhibit 8: Planning for School Siting and Transportation Network



- e. Coordination of bike and pedestrian planning for schools focusing on retrofitting and improving connectivity of sidewalks, trails, and other options for connecting schools to key destinations.
- f. Coordination between transit agencies and schools on bus schedules and routes to improve bus access to schools.
- g. Conduct case study research from Bay Area Bus Programs and others to identify how those are used by students in their commute to schools.

**Deliverables:**

Some of the deliverables under this task can include:

- Analysis of transportation connections between housing and schools in existing inner-tier cities, fast growing suburban cities, and rural areas to identify needs for school location choice and coordination.
- Analysis of traffic congestion and travel flow patterns for access, air quality (anti-idling policies and reduction of VMT opportunities), and safety issues at pilot locations in partnering cities.
- Recommendations for bike and pedestrian planning for schools in DFW area.
- Coordination between transit agencies and schools on bus schedules and routes to improve bus access to schools.
- Case study research from Bay Area Bus Programs to identify how those are used by students in their commute to schools.

## II. Project Parties

NCTCOG staff will conduct project tasks in coordination with a Regional Working Group (to be developed through the planning process) including ISDs, local governments, and transit agencies. Other stakeholders such as federal and state government staff, private sector agencies, public health organizations, non-profit organizations, safety professionals, and the general public will be involved in the planning process as well.

## III. Grant Funds and Sources

The proposed cost of the project is \$300,000. A total of \$210,000 is requested from TIGER funding, and a local match commitment of \$90,000 or 30 percent will be provided by the Regional Transportation Council from the RTC Local funds. All project tasks will be performed by NCTCOG staff. **Appendix E** provides a detailed budget showing the distribution of labor costs by position, direct costs, and budget by task. A total of \$275,000 is allocated for various technical tasks, and \$25,000 is allocated for direct costs.

## IV. Selection Criteria

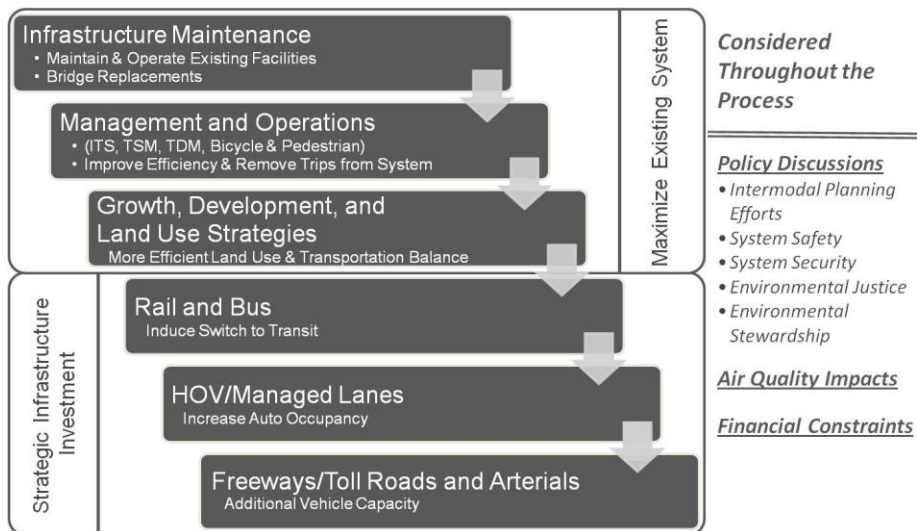
### A. Primary Selection Criteria:

The **Land Use-Transportation Connections for Sustainable Schools** planning project has a significant impact on desirable long-term outcomes for the 12-county DFW MPA.

**1. State of Good Repair: Improving the condition of existing transportation facilities and systems, with particular emphasis on projects that minimize life-cycle costs.**

The proposed planning project is consistent with the DFW region’s Metropolitan Transportation Plan: Mobility 2035 - 2013 Amendment. Improving land use-transportation connections through a variety of sustainable development and transportation strategies is an important focus for NCTCOG. Because the transportation needs of the region far outweigh the available funds, strategic investments in infrastructure are required. As shown in **Exhibit 9**, Mobility 2035 has recommendations that attempt to balance between meeting the most critical mobility needs while making a variety of transportation options available.

**Exhibit 9: Mobility 2035 Recommendations**



The proposed planning project focuses on the coordination of infrastructure planning - ISD’s facility planning and city comprehensive plans and Capital Improvement Plans. The coordinated infrastructure planning and design enables efficient and effective usage of resources and funding, avoiding the duplication of resources. The saved funding can be utilized and allocated to long-term maintenance of facilities.

The project plans for active transportation options between neighborhoods and schools that reduces the mode share of automobiles, reducing the need to add lanes and life-cycle costs.

The proposed project promotes integration of schools in neighborhoods with efficient street network. The planning for efficient street network and better school siting provides travel time savings from reduced congestion and decreased travel distance between school and housing locations. Based on NCHRP Report 552, Mobility Benefits from annual travel time savings for 100 new active transportation users was estimated to be \$203,800.<sup>xii</sup>

The education and outreach tasks related to transportation safety can provide user benefits due to improved safety. The planning for active transportation options between schools and neighborhoods encourages user benefits due to potential sidewalks and trails that will connect school locations and neighborhoods.

Shared experiences and knowledge through the implementation of working group and experience from pilot projects, and additional technical analysis conducted through the proposed project can result in increased efficiency and minimization of life-cycle costs of transportation facilities.

## ***2. Economic Competitiveness: Contributing to the economic competitiveness of the United States over the medium- to long-term.***

The proposed project includes planning for increased access to quality schools and inner-city neighborhoods inner cities, lower income communities, which can promote economic competitiveness of inner-city schools and neighborhood, and long-term efficiency of infrastructure. The development of a landbanking program for growing suburban ISDs can provide suitable school sites, and provide cost savings on land, improve economic productivity of land, and provide opportunity to grow and accommodate population growth.

Schools are major employers in many communities and planning for multimodal transportation access promotes access to jobs and movement of workers. The pilot projects selected by the Regional Working Group will focus on a portion of Economically Distressed Areas, specifically helping persons that do not have a car to access employment locations by bus, bicycle, or walk, to improve economic mobility of workers.

Planning for improved access to schools promotes “intergenerational mobility”.<sup>xiii</sup> Lower-income groups by better access to jobs could climb up the income ladder to middle class. Improved access of children to quality schools can improve their educational attainment.

Quality of an ISD is typically one of the key factors in housing location choice of family households. Planning for connections between quality schools and housing

promotes desirability of schools and communities making those more economically competitive.

According to the research conducted by Miami-Dade County, urban trails generated \$140,000 of economic development per mile.<sup>xiv</sup> The proposed project plans for active transportation connections between schools and housing, which can be high future economic development impetus for those communities in the future if those facilities get constructed.

***3. Quality of Life: Creating affordable and convenient transportation choices through place-based policies and investments that increase transportation choices and access to transportation services for people in communities across the United States.***

The proposed project promotes the following Livability Principles developed by the U.S. Department of Transportation (DOT) in coordination with the U.S. Department of Housing and Urban Development (HUD), and U.S. Environmental Protection Agency (EPA) with specific focus on the first principle to plan for transportation choices.

**Provide more transportation choices:** The project proposes to plan for safe, reliable and economical transportation choices through improved multimodal transportation connections between quality schools and housing. According to the NCHRP Report 552, the daily quality of life benefits per user of an active transportation facility was estimated at \$10.<sup>xv</sup> School locations typically have high number of bike-ped commuters. For example, annual Quality of Life benefits from 100 new bike-ped users can be \$365,000.

**Promote equitable, affordable housing:** The project proposes to plan for multimodal transportation connections between quality schools and affordable housing. A potential pilot project included in the scope of work is to connect magnet schools and affordable housing in inner-tier cities in Dallas and Fort Worth. Safe and reliable transportation options to schools provides more housing choices to families making their location choice based on the access and proximity to schools.

**Enhance economic competitiveness:** The proposed project includes planning for improved access to quality schools and neighborhoods, which can promote economic competitiveness of neighborhoods. The development of landbanking program can provide suitable school sites to ISDs, improves economic productivity of land, and provides opportunity to grow and accommodate population growth. Schools are major employers in many communities and planning for multimodal transportation access promotes access to jobs, movement of workers, specifically helping zero car households to access employment locations by bus, bicycle, or walk.

**Support existing communities:** The project supports existing communities with higher concentration of lower income populations by planning for strategic investments to revitalize communities in economically distressed areas. An Environmental Justice Index (EJI) is used by NCTCOG to aggregate low-income and minority populations for analysis efforts. Low-income and minority status are aggregated and analyzed in an effort to examine the effects of recommendations in long range transportation planning for the DFW region, on the protected population as a whole. The pilot projects located in EJ areas will be prioritized by the Regional Working Group.

Through the proposed Regional Working Group, NCTCOG plans to facilitate resource sharing among ISDs and local governments such as shared use of community centers and athletic facilities, which promotes quality of life through efficient use of resources.

**Coordinate policies and leverage investment:** Through the planning project, a regional working group of ISDs, local governments, and transit agencies will be developed for collaboration in planning and capital projects related to schools. One of the objectives of the working group is to coordinate between ISD's facility planning and city comprehensive plans and Capital Improvement Plans. This can result in shared resources, funding, and experiences among the partnering agencies.

The NCTCOG was successful in receiving the HUD Challenge Grant and administered EPA's Brownfield Area-Wide Planning Pilot Program. Various local governments in the region also received federal and state funds from the non-transportation public agencies. A portion of the pilot projects for the strategies such as school siting, safety audits, and Hispanic transportation safety education could be prioritized in the project areas funded by HUD and EPA, to connect and leverage the investments made by the above agencies.

**Value communities and neighborhoods:** The project plans for bicycle and pedestrian facilities that increase safety and walkability around school locations in existing urban, suburban, and rural neighborhoods. ISDs, local government, transit agencies, and neighborhood organizations will be involved in the planning process.

Planning for bike-ped facilities can result in reduction of obesity and improved health for school children. According to the NCHRP Report 552, annual per-capita cost savings in healthcare due to physical activity was estimated at \$128. Annual health benefits from 100 new bike-ped users can be \$12,800.

#### ***4. Environmental Sustainability: Improving energy efficiency, reducing dependence on oil, reducing greenhouse gas emissions and benefitting the environment.***

Project activities include planning for bus and active transportation connections to schools that can decrease dependence on fossil fuels, reduce greenhouse gas (GHG) emissions, and promote air quality.

Planning for community centered school siting with a well-connected transportation network can improve access and reduce the need to travel longer distances in daily commutes to school. This can result in reduction of VMT and provide air quality benefits.

Some of the technical tasks proposed in the project include the analysis of traffic congestion and travel flow patterns for access, air quality (anti-idling policies and reduction of VMT opportunities). The results from the technical analysis will be shared through peer exchanges, workshops, and project website, and multiple member governments can benefit from the shared knowledge. The technical analysis can result in environmentally sustainable transportation projects in various cities in the DFW region, and can be a valuable resource for other regions.

#### ***5. Safety: Improving the safety of U.S. transportation facilities and systems.***

The proposed planning project tasks include safety audits to be conducted in various pilot projects. Other proposed planning projects include creating recommendations for bike-ped safety near school locations. These projects can be a critical steps towards safe and accessible transportation facilities due to possible reduction in crashes from the potential infrastructure projects that can result from the planning activities.

Planning activities will also include pedestrian and bicycle safety programs targeted to Hispanics in inner-city ISDs and other ISDs with high percentage of Hispanics, and bilingual transportation safety information guide for Hispanic students. According to FHWA, Hispanic pedestrians account for 16.3 percent of all pedestrian crashes nationwide. Hispanic bicyclists account for 15.6 percent of all bicyclist crashes nationwide.<sup>xvi</sup> These percentages can be even higher for the inner-city ISDs such as Dallas and Fort Worth because a high percentage of students in these ISDs are Hispanics. According to TxDOT's CRIS data the four core counties had approximately 7,300 bike-ped crashes and of those approximately 4,100 were within a half-mile of a school. Applying national percentages, at least 1,100 of these bike-ped crashes in the four counties, and over 600 bike-ped crashes in school areas, could have involved Hispanics. The safety education materials can be used by various local governments and ISDs in

the region, which can potentially reduce the number of crashes that would have included Hispanic immigrants.

## **B. Secondary Selection Criteria:**

### **1. Innovation: Innovative strategies to pursue the long-term outcomes outlined above.**

The planning project is proposing to build Innovative partnerships between various stakeholders in land use-transportation planning related to schools. A regional working group of ISDs, local governments, and transit agencies will be developed to promote land use-transportation planning related to schools. Partnership mechanisms such as agreements or Memorandums of Understanding (MOU) will be developed to create a structure to partnerships. The working group is intended to bridge the gap in communication between local governments and ISDs, and share best practices across jurisdictions and agencies. Through these partnerships, innovative funding sources will be identified and investments can be leveraged to further transportation connections to schools in the DFW region.

### **2. Partnership: Demonstrate strong collaboration among a broad range of participants and/or integration of transportation with other public service efforts.**

**(a) Jurisdictional and Stakeholder Collaboration:** This project is a multijurisdictional effort of several ISDs, local governments, and the transit agencies. NCTCOG, which serves as the region's MPO will be the primary point of contact and will facilitate the planning process. The RTC's school policy provided in **Appendix A** reflects the coordination in the region between the 209 municipalities and the 127 school districts located within the MPA towards this planning effort. The grant funds will be utilized to implement the ideas and programs listed in the policy. The RTC's letter of support included in **Appendix B** illustrates the region's support for the project. NCTCOG's Executive Board adopted a resolution to support the application and the planning initiative on April 24, 2014. In addition to the NCTCOG member governments, the planning project will include school superintendents, teachers, health organizations, non-profit organizations related to education services, and parents in the planning process to prioritize projects and disseminate the findings from the planning efforts. The proposed regional workshops, peer exchanges, and project meetings/conference calls are some of the tools to engage stakeholders in the planning process.

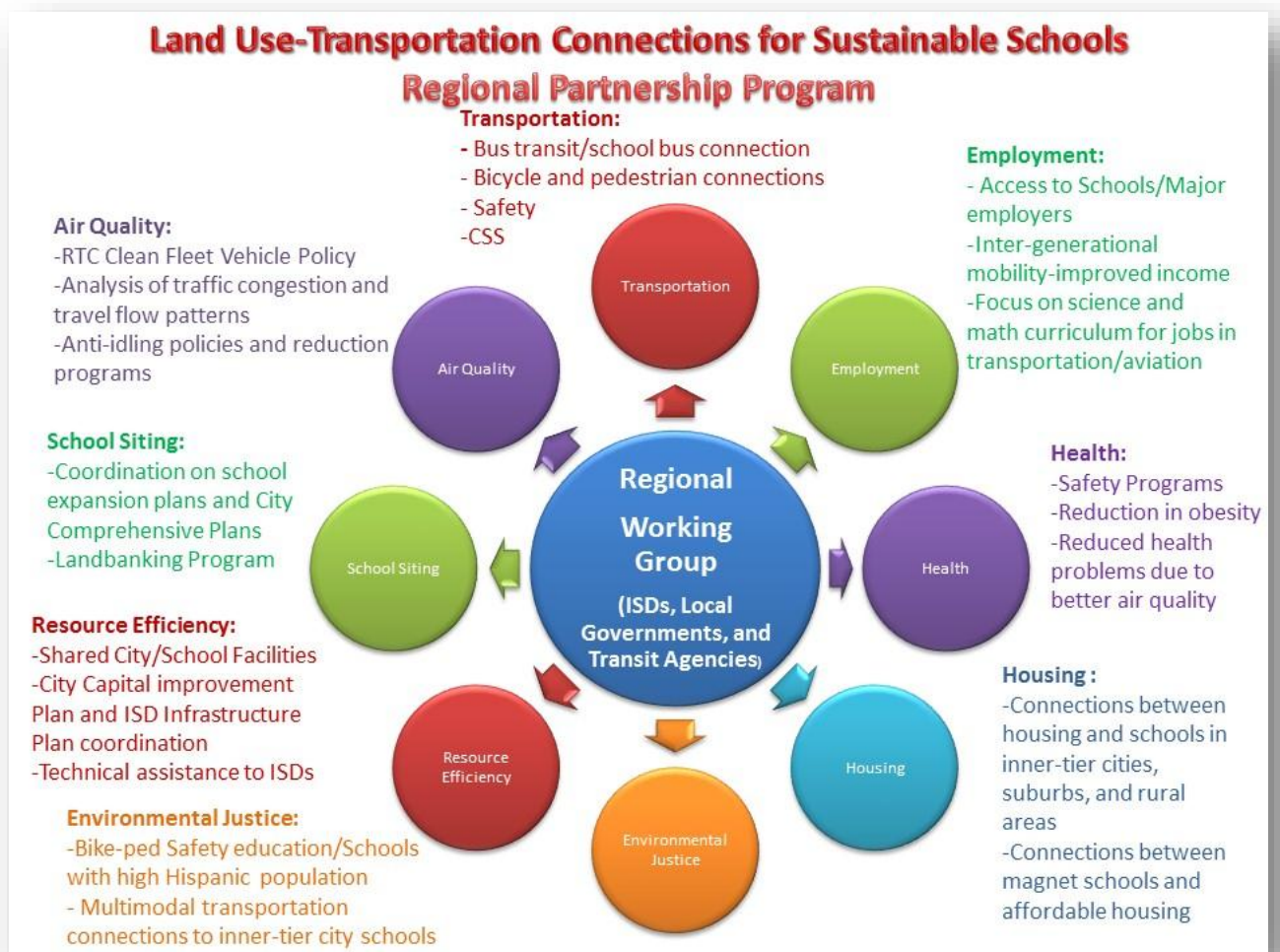
**(b) Disciplinary Integration:** A regional working group of ISDs, local governments, and transit agencies will be developed for collaboration in planning and capital projects related to schools. One of the objectives of the working group is to coordinate between ISD's facility planning and City comprehensive plans and



Capital Improvement Plans. This can result in shared resources, funding, and experiences among the partnering agencies. As shown on **Exhibit 10**, the program will attempt to create master list projects that would leverage resources within various disciplines such as school planning, economic development, housing, community, conservation, health, etc. Multi-disciplinary projects would be implemented throughout the region, developing a new way to do business and break down silos.

Options to prioritize a portion of the pilot projects for strategies such as school siting, safety audits, and Hispanic transportation safety education in the project

**Exhibit 10: Land Use-Transportation Connections for Sustainable Schools**



areas funded by HUD and EPA will be explored by the Working Group in order to connect and leverage the investments made by the above agencies.

## **V. Demonstrated Project Readiness**

### **(a) Technical Feasibility:**

NCTCOG staff will perform tasks in the planning project. The following description provides capacity of NCTCOG to staff to administer the grant, experience with land use-transportation projects and public outreach activities, and staff qualifications:

#### **Capacity:**

As a Metropolitan Planning Organization, NCTCOG is well-equipped to plan, implement, and achieve desired results as outlined in this proposal. For Fiscal Year 2012 - 2013, NCTCOG managed a combination of local, State, and federal funds of approximately \$152 million dollars comprised of eight federal agencies and 11 state agencies. **Appendix F** provides NCTCOG's annual budget showing various federal, State, and local funds administered by NCTCOG.

NCTCOG has been the recipient of a number of State and federal grants due to the superior track record established by the agency in successfully completing projects in a timely manner, and possesses extensive resources in contracting, accounting, managing agreements, grant disbursement, and related tasks which will be required for successful implementation. NCTCOG can demonstrate a history of meeting reporting requirements and submitting thorough technical reports through favorable MPO Certification Reviews, performed by the Federal Highway Administration and the Federal Transit Administration every four years to assess the quality of a regional metropolitan transportation planning process, planning products, and compliance with applicable statutes and regulations. NCTCOG received its latest certification in 2013. A copy of the documentation is available upon request.

In addition, NCTCOG has a history of strong partnerships with the public sector, ISDs, the business community, and public interest groups, and citizens, which enables NCTCOG to leverage the expertise of all stakeholders for project implementation and/or research. NCTCOG staff has strong knowledge, diverse skillsets, and experience with conducting land use and transportation analysis, modeling, survey, best practice research, and public involvement. NCTCOG collects and maintains various regional and transportation datasets that will aid in conducting the tasks included in the planning projects.

#### **Capability and Qualification of Key Personnel:**

The individual NCTCOG staff members who will be responsible for implementation of funds awarded from this application have been directly involved in the implementation of

the previous projects shown above and on other grants awarded by other federal and state agencies, thus having the necessary relevant experience in administering grants of a similar scope and nature as this request. Additional NCTCOG staff may be involved in the project in conducting specific technical, grant, public outreach, and administrative tasks. **Appendix G** provides the biographies of Overall Project Director, Program Manager, and Day-to Day Project Manager. Project Budget in **Appendix E** shows the proposed number of hours by each position.

**Experience in Outreach Activities (Low Income Persons, minorities, limited English, and persons with disabilities):** The North Central Texas Area is a diverse region with citizens from all walks of life. There is wide mix of income levels, ethnicities, and local interest in how government is involved in each resident's daily lives. NCTCOG engages in monthly outreach meetings on average one cycle of meetings a month, eight months out of the year and each cycle will include three meetings focusing on east, west, and central locations of a region that is 9,750 square miles. NCTCOG currently has a plan in place that is proactive, provides timely public notice, full public access to key decisions, and opportunities for early and continuing involvement for the public. NCTCOG is committed to incorporating Environmental Justice elements and Title VI considerations into its public participation outreach. During the public participation process, populations that have been traditionally underserved by existing infrastructure systems, including but not limited to low-income and minority households, are sought out and their needs considered.

As public involvement is carried out, special consideration is given to ensure all residents have reasonable access to information and opportunities to give input. Demographic data is analyzed to identify communities of concern that can be used for public meeting location and outreach event selection as well as identification of need for more targeted or diverse outreach efforts. NCTCOG annually publishes a report outlining how Environmental Justice concerns are addressed. Additionally, a Language Assistance Plan (LAP) has been developed on how NCTCOG can make information available to limited English proficient (LEP) persons. Being a region with such a large Hispanic population and to ensure success with our most frequent LEP group all public meeting notices are sent to select newspapers to ensure regional coverage and translated notices are sent to Spanish periodicals. Notification is also sent to local libraries, city halls, county court houses, chambers of commerce (including minority chambers), and the Texas Register. NCTCOG ensures that special accommodations due to a disability or for language translation are available at each meeting.

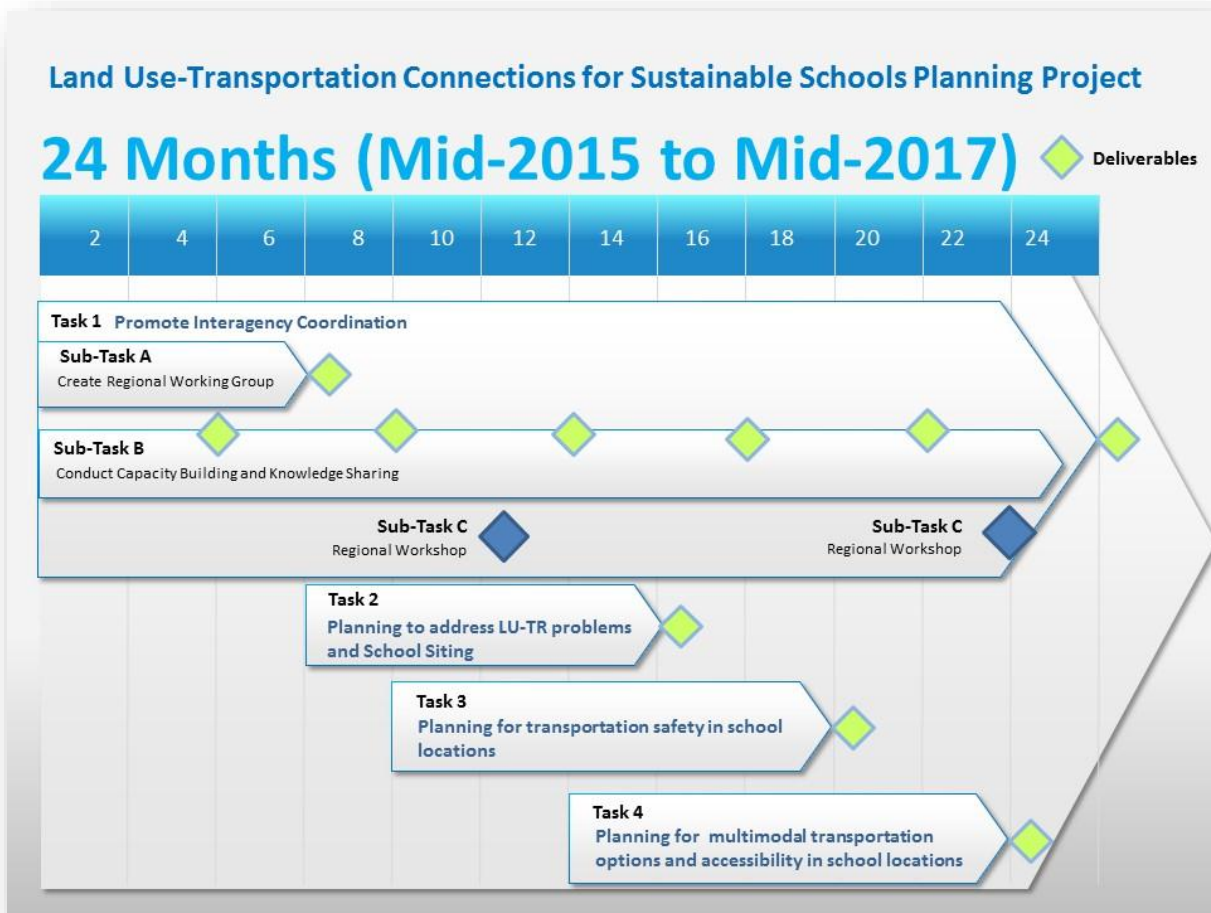
## **2. Financial Feasibility:**

**Appendix E** provides a detailed budget showing the distribution of labor and direct costs, and budget by task. NCTCOG staff is committed to completing the project within the project budget and timeline of 24 months.

**3. Schedule:**

The projects proposed within this grant application will take great steps in the right direction of implementing RTC School Policy and the direction provided by the Regional Working Group, and create tools and resources to empower local governments and communities to make changes that they have supported and espoused. The proposed planning project will be conducted from the grant award (announced in Fall/ Winter 2014) and execution of the agreement with DOT (anticipated mid-2015), through the project completion for 24 months, from mid-2015 to mid-2017. **Exhibit 11** shows project schedule by task and timeline for deliverables.

**Exhibit 11: Project Schedule**



## **Reporting Requirements**

If awarded, NCTCOG will work with DOT to determine a final Work Plan after the effective date of the grant agreement. NCTCOG agrees to submit periodic and final program reports according to DOT's requirements of the agreement. NCTCOG also agrees to submit financial status reports for the period of performance. Performance indicators and outcomes will be reported to DOT as per the Work Plan.

## **VI. Federal Wage Rate Certification**

**Appendix H** includes NCTCOG's Federal Wage Rate Requirement Certification stating that NCTCOG will comply with the requirements of subchapter IV of chapter 31 of title 40, United States Code (Federal wage rate requirements), as required by the FY 2014 Continuing Appropriations Act).

## Appendix

Appendix A: RTC School Policy

Appendix B: RTC Letter of Support

Appendix C: FHWA - Pedestrian Focus City Map

Appendix D: Bicycle and Pedestrian Crash Density Maps

Appendix E: Project Budget (2-Years)

Appendix F: NCTCOG Annual Budget

Appendix G: Staff Qualifications

Appendix H: Federal Wage Certification

Appendix I: References

## **Appendix A: RTC School Policy**

### **REGIONAL TRANSPORTATION COUNCIL POLICY SUPPORTING SCHOOL DISTRICTS (P13-02)**

The Regional Transportation Council (RTC) recognizes the independence of Independent School Districts. In addition, school districts, like local governments, are members of the North Central Texas Council of Governments (NCTCOG). This policy addresses candidate areas of interest between school districts, local governments, and the NCTCOG Regional Transportation Council.

Candidate areas of interest include:

- Engaging middle school art students to develop the cover design for Progress North Texas
- Continuing to encourage schools to participate in the RTC Clean Fleet Vehicle Policy
- Encouraging school districts to participate in:
  - clean school bus programs, including replacements, retrofits, repowers, and conversions to alternative fuels
  - energy efficiency audit programs
  - vehicle idling-reduction programs
  - innovative contracting initiatives that encourage vendors or suppliers to adopt more air quality friendly practices (clean construction, green cement, grounds maintenance, etc.)
  - pilot school-siting programs integrating schools within neighborhoods and reducing the frequency of schools being located on major thoroughfare streets
  - coordination and conversations among multiple schools/school districts using the same bus stops to communicate routing proposals
- Continuing to advocate the importance of science, technology, engineering, and math (STEM) for jobs related to meeting the needs of aviation and other requested workforce needs in the region
- Communicating the benefits of Texas Department of Transportation and Regional Transportation Council programs that help market resources available for "Safe Routes to School," the "Precious Cargo Program," and the "Transportation Alternatives Program" that advance the safety of children traveling to and from school
- Assisting school districts when technical assistance is requested

Approved: August 8, 2013

## **Appendix B: RTC Letter of Support**



The Transportation Policy Body for the North Central Texas Council of Governments  
(Metropolitan Planning Organization for the Dallas-Fort Worth Region)

April 18, 2014

The Honorable Anthony Foxx  
Secretary of Transportation  
United States Department of Transportation  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Dear Secretary Foxx:

I am writing to request the United States Department of Transportation's (USDOT) and your review and support for the Regional Transportation Council (RTC) and its \$300,000, 2014 Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant Program application for the Land-Use Transportation Connections for Sustainable Schools planning project.

The RTC serves as the Metropolitan Planning Organization (MPO) for the Dallas-Fort Worth area and has prepared an application that meets the criteria for a TIGER planning project. A local match commitment of 30 percent, or \$90,000, will be provided by the RTC, and the work will be performed by North Central Texas Council of Government (NCTCOG) staff. The goal of the planning project is to create a regional program and implementation plan for a regional working group to be developed to promote multimodal transportation options to schools, advance long-term planning for school siting, improve transportation safety near schools, and encourage coordination between local governments, Independent School Districts (ISD), and transit agencies within the 12-county Metropolitan Planning Area (MPA) for resource efficiency and sustainability.

The RTC approved a school policy on August 8, 2013, to promote coordination in the region among the 209 municipalities and the 127 school districts located within the MPA. The policy contains many innovative strategies for partnership and is provided in the attachment. The proposed project reflects the RTC's School Policy and is consistent with the long range transportation plan for the region, Mobility 2035: The Metropolitan Transportation Plan for North Central Texas – 2013 Update. The grant funds will be utilized to implement the ideas and programs listed in the policy.

If you have any additional questions regarding this project, please contact Michael Morris, P.E., Director of Transportation for the North Central Texas Council of Governments, at (817) 695-9241.

Sincerely,

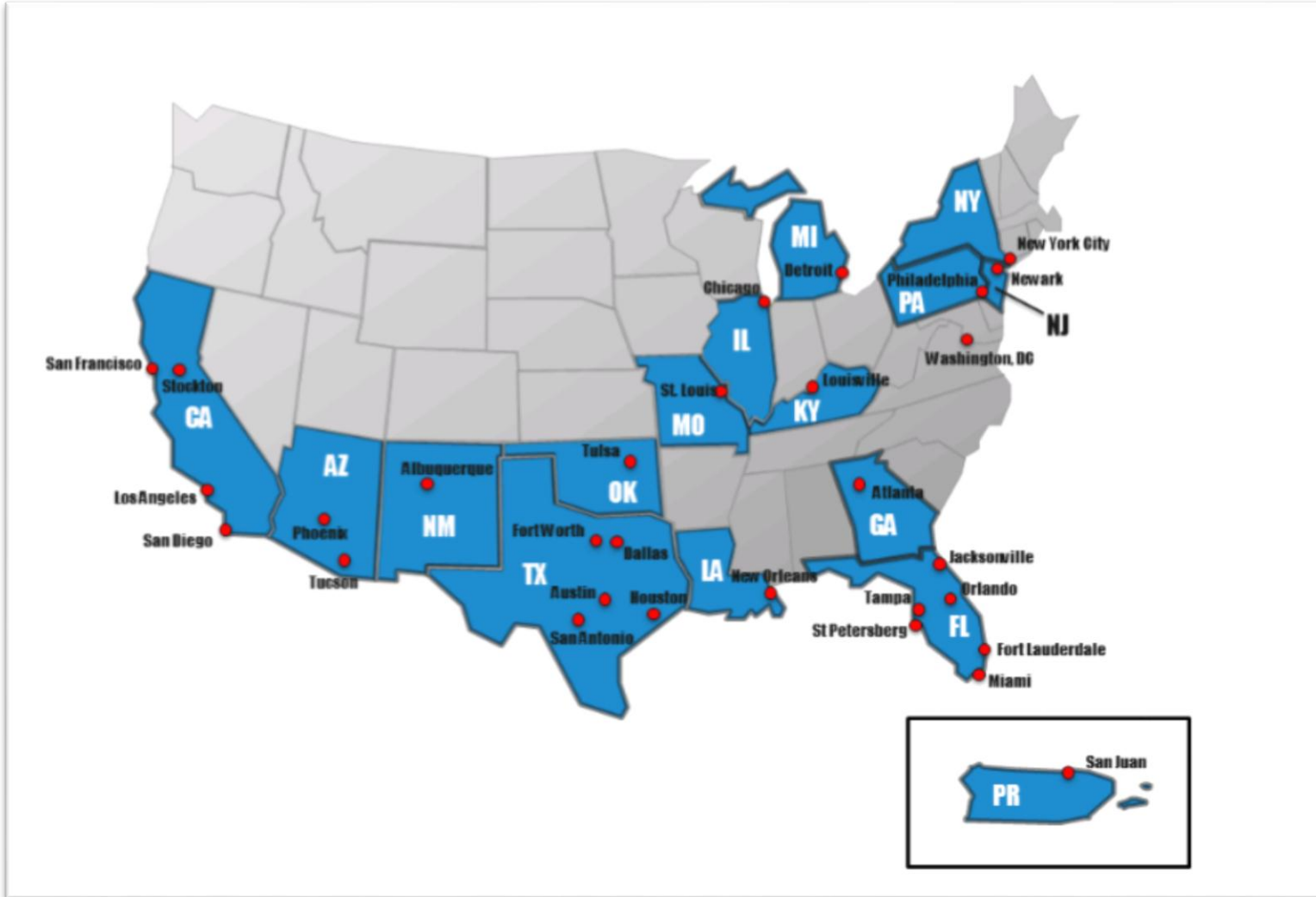
A handwritten signature in black ink that reads "Kathryn Wilemon".

Kathryn Wilemon  
Chair, Regional Transportation Council  
Mayor Pro Tem, City of Arlington

PM:bw  
Attachment



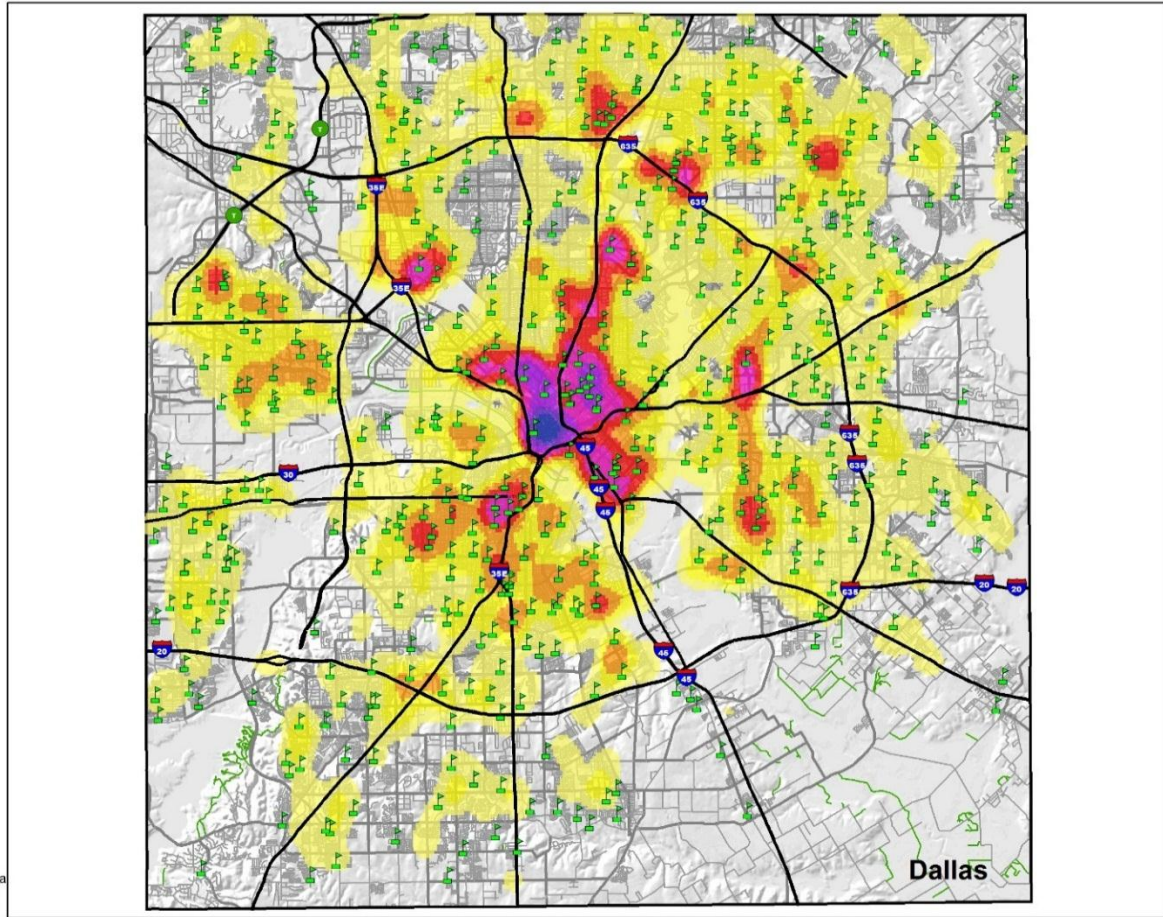
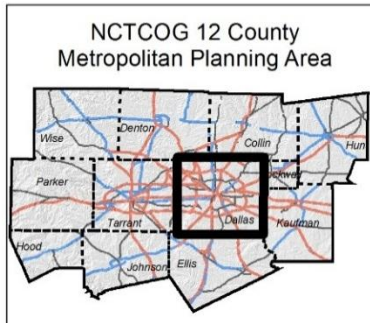
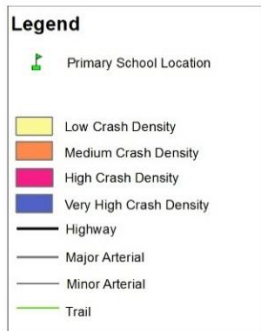
**Appendix C: FHWA - Pedestrian Focus City Map**



Source: [http://safety.fhwa.dot.gov/ped\\_bike/ped\\_focus/](http://safety.fhwa.dot.gov/ped_bike/ped_focus/)

**Appendix D: Bicycle and Pedestrian Crash Density Maps in Core Counties (Dallas, Tarrant, Collin, and Denton) and the cities of Dallas and Fort Worth and School Locations (2009-2013)**

**Dallas County  
Bicycle and Pedestrian  
Crash Density with Schools  
(2009 - 2013)**

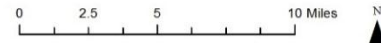


Note: Density concentration is calculated as a magnitude per unit area from crash point features and is based on each county's geography. Blue symbolizes higher concentration of crashes and yellow displays lower concentrations.

- 1.) Source: TxDOT's Crash Records Information System - 2013 data is current as of January 2014. All TxDOT disclaimers apply.
- 2.) Data displayed contains reportable crashes with latitude and longitude information. Additional crashes may have occurred.
- 3.) For questions, contact Jory Dille at [jdille@nctcog.org](mailto:jdille@nctcog.org) or 817-704-5644.












North Central Texas  
Council of Governments  
Transportation Department

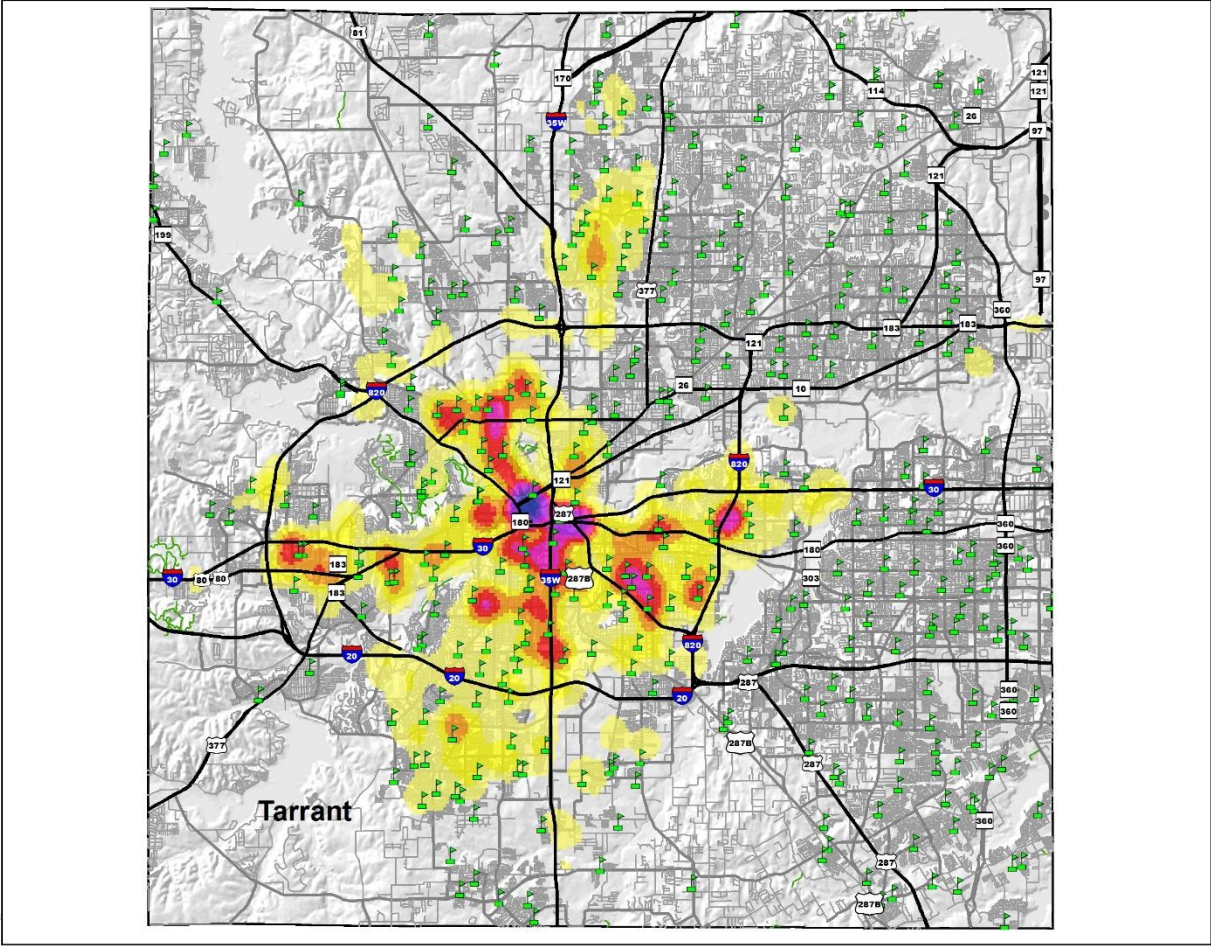
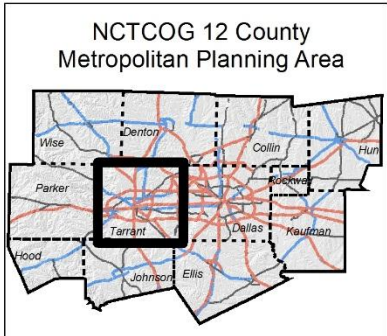


Date: 4/14/2014

# Tarrant County Bicycle and Pedestrian Crash Density with Schools (2009 - 2013)

**Legend**

-  Primary School Location
-  Low Crash Density
-  Medium Crash Density
-  High Crash Density
-  Very High Crash Density
-  Highway
-  Major Arterial
-  Minor Arterial
-  Trail



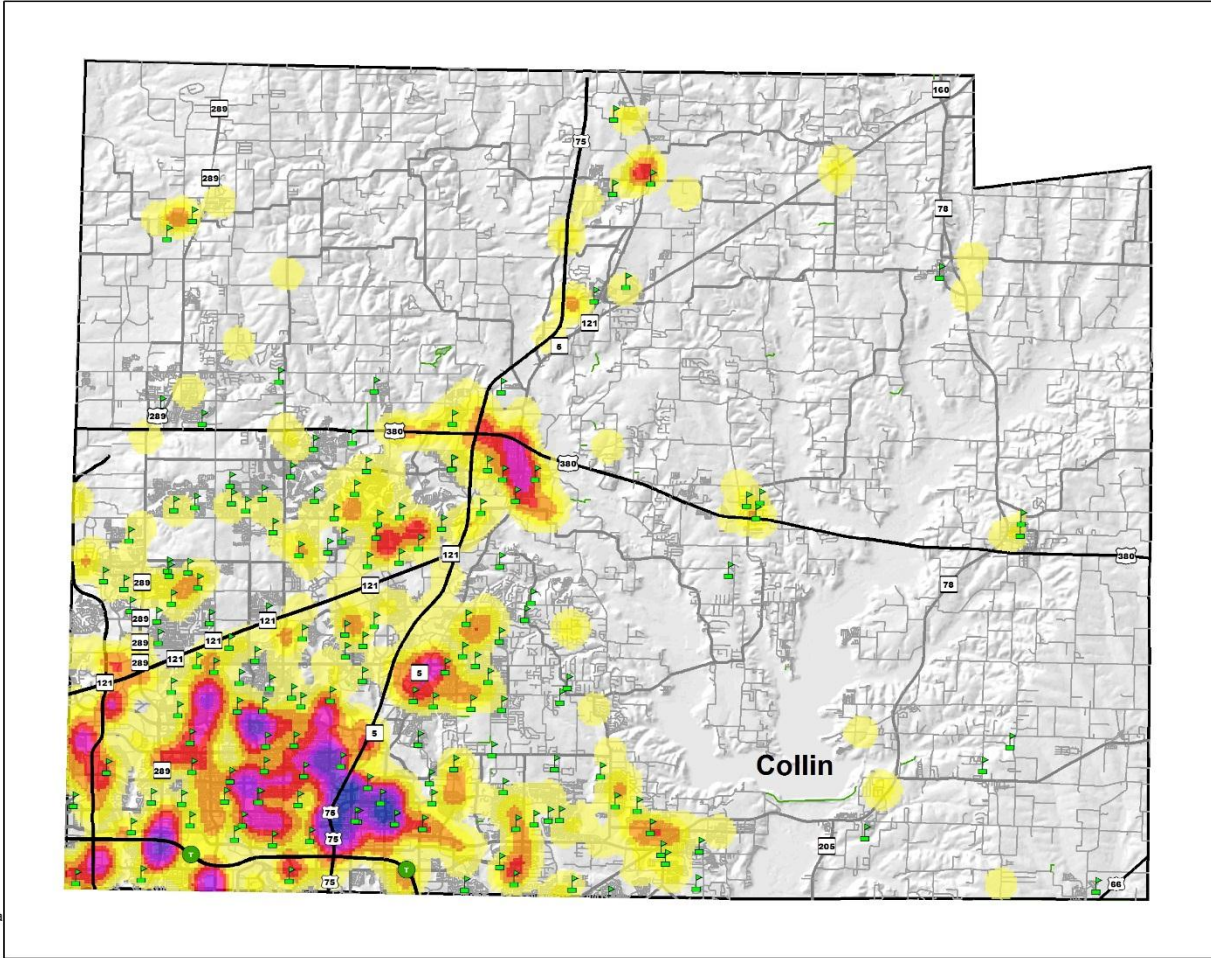
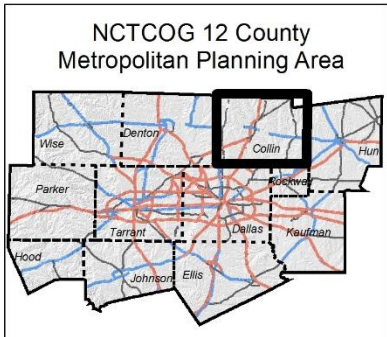
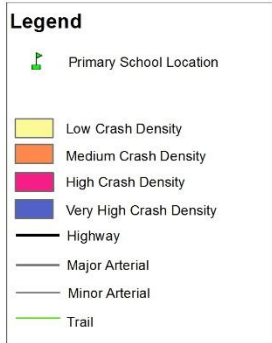
Note: Density concentration is calculated as a magnitude per unit area from crash point features and is based on each county's geography. Blue symbolizes higher concentration of crashes and yellow displays lower concentrations.

- 1.) Source: TxDOT's Crash Records Information System - 2013 data is current as of January 2014. All TxDOT disclaimers apply.
- 2.) Data displayed contains reportable crashes with latitude and longitude information. Additional crashes may have occurred.
- 3.) For questions, contact Jory Dille at jdille@nctcog.org or 817-704-5644.



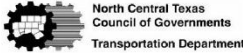
Date: 4/14/2014

# Collin County Bicycle and Pedestrian Crash Density with Schools (2009 - 2013)



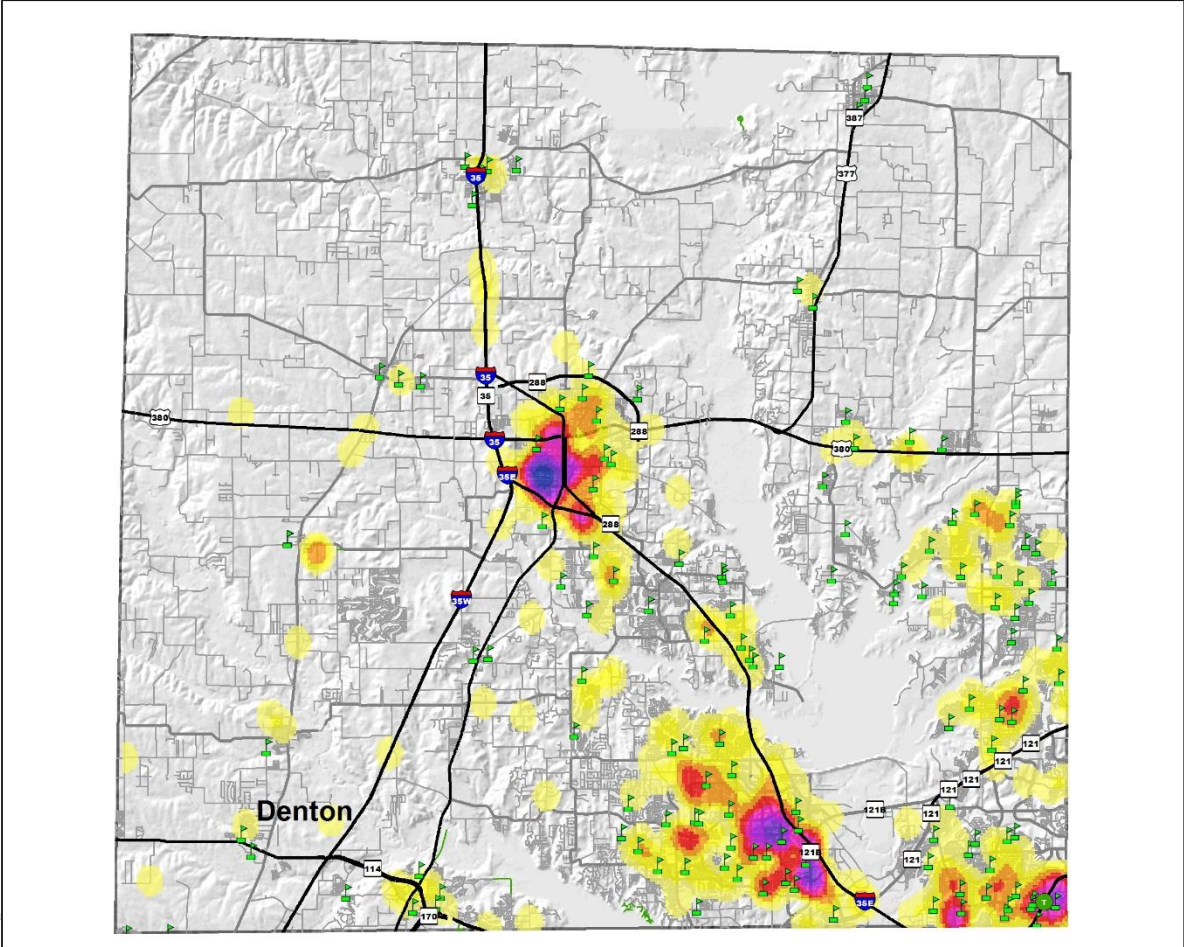
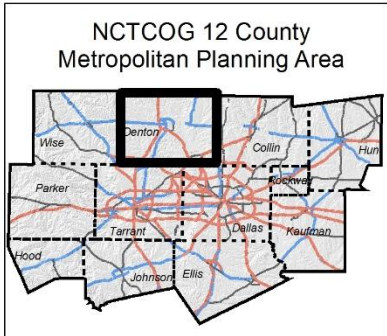
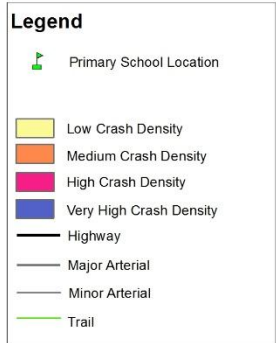
Note: Density concentration is calculated as a magnitude per unit area from crash point features and is based on each county's geography. Blue symbolizes higher concentration of crashes and yellow displays lower concentrations.

- 1.) Source: TxDOT's Crash Records Information System - 2013 data is current as of January 2014. All TxDOT disclaimers apply.
- 2.) Data displayed contains reportable crashes with latitude and longitude information. Additional crashes may have occurred.
- 3.) For questions, contact Jory Dille at [jdille@nctcog.org](mailto:jdille@nctcog.org) or 817-704-5644.



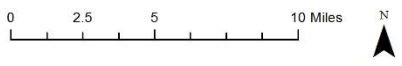
Date: 4/14/2014

# Denton County Bicycle and Pedestrian Crash Density with Schools (2009 - 2013)



Note: Density concentration is calculated as a magnitude per unit area from crash point features and is based on each county's geography. Blue symbolizes higher concentration of crashes and yellow displays lower concentrations.










- 1.) Source: TxDOT's Crash Records Information System - 2013 data is current as of January 2014. All TxDOT disclaimers apply.
- 2.) Data displayed contains reportable crashes with latitude and longitude information. Additional crashes may have occurred.
- 3.) For questions, contact Jory Dille at jdille@nctcog.org or 817-704-5644.

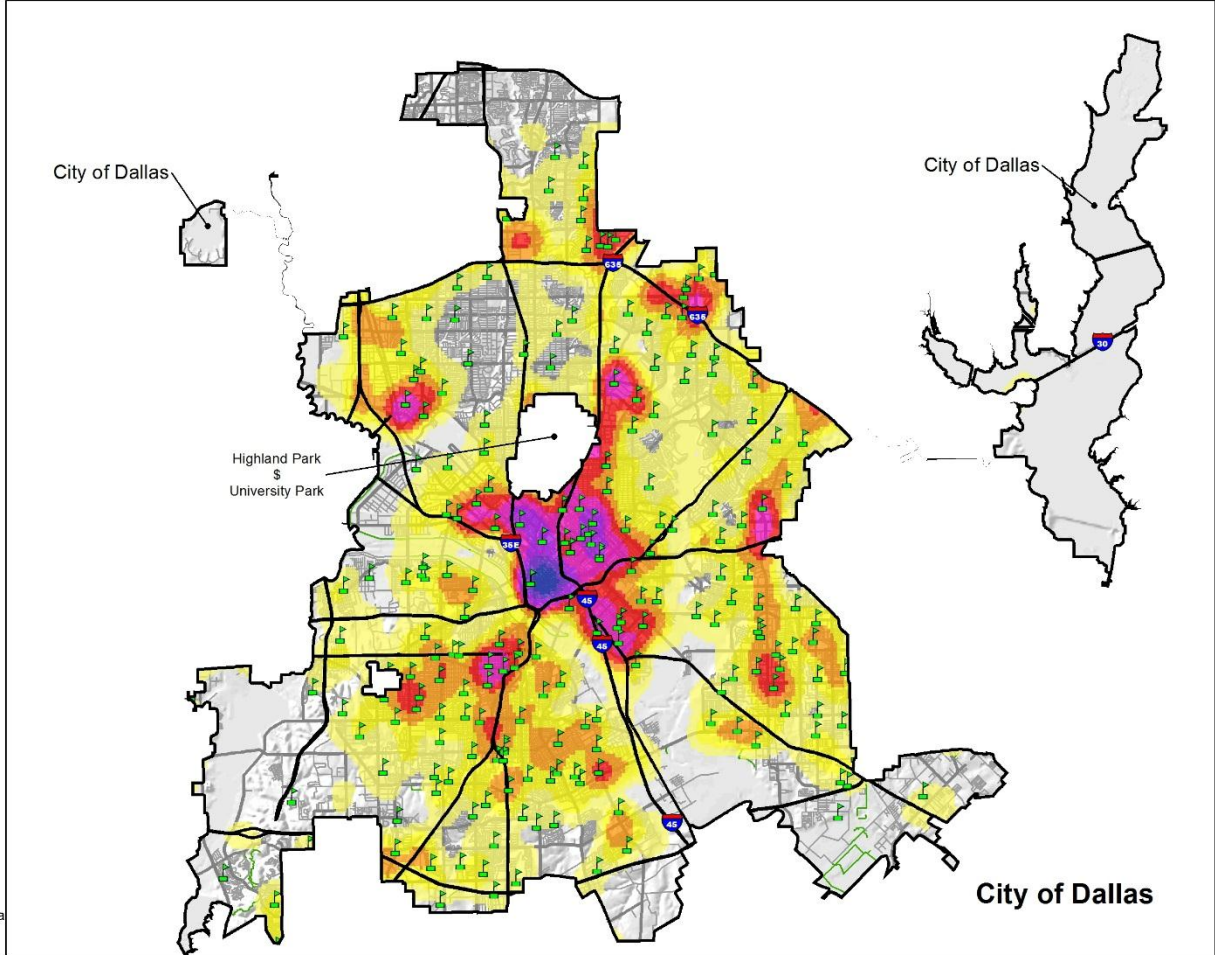
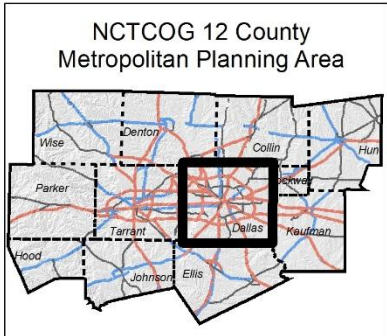


Date: 4/14/2014

# City of Dallas Bicycle and Pedestrian Crash Density with Schools (2009 - 2013)

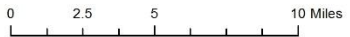
**Legend**

-  Primary School Location
-  Low Crash Density
-  Medium Crash Density
-  High Crash Density
-  Very High Crash Density
-  Highway
-  Major Arterial
-  Minor Arterial
-  Trail



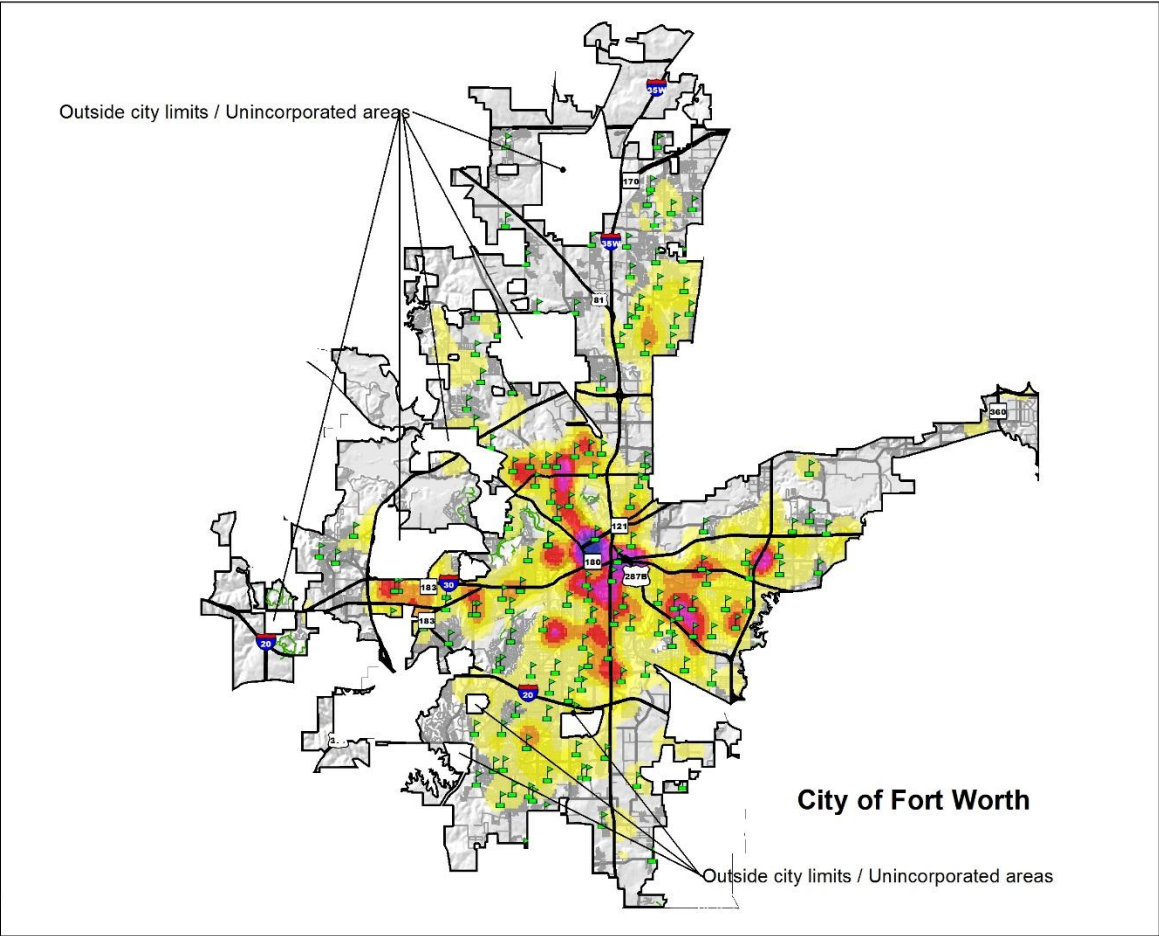
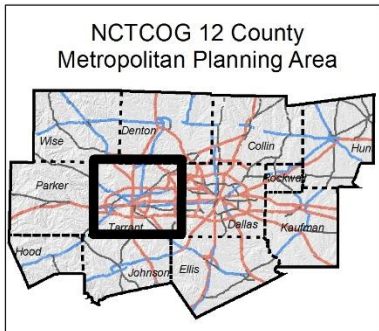
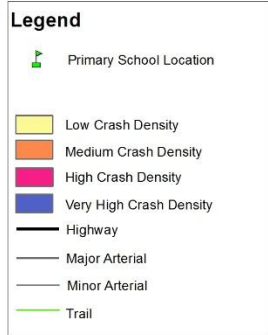
Note: Density concentration is calculated as a magnitude per unit area from crash point features and is based on each city's geography. Blue symbolizes higher concentration of crashes and yellow displays lower concentrations.

- 1.) Source: TxDOT's Crash Records Information System - 2013 data is current as of January 2014. All TxDOT disclaimers apply.
- 2.) Data displayed contains reportable crashes with latitude and longitude information. Additional crashes may have occurred.
- 3.) For questions, contact Jory Dille at jdille@nctcog.org or 817-704-5644.



Date: 4/14/2014

# City of Fort Worth Bicycle and Pedestrian Crash Density with Schools (2009 - 2013)

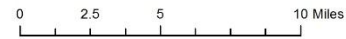


Note: Density concentration is calculated as a magnitude per unit area from crash point features and is based on each city's geography. Blue symbolizes higher concentration of crashes and yellow displays lower concentrations.

- 1.) Source: TxDOT's Crash Records Information System - 2013 data is current as of January 2014. All TxDOT disclaimers apply.
- 2.) Data displayed contains reportable crashes with latitude and longitude information. Additional crashes may have occurred.
- 3.) For questions, contact Jory Dille at [jdille@nctcog.org](mailto:jdille@nctcog.org) or 817-704-5644.



North Central Texas  
Council of Governments  
Transportation Department



Date: 4/11/2014

**Appendix E: Project Budget (2-Years)**

Position	Average Labor Rate	Hours	Salary	Benefit	Indirect	Rent & Comm.	Loaded Salary	Common Cost	Total (loaded + cost)
Sr. Program Manager	\$67	100	\$6,700	\$2,954	\$1,709	\$506	\$11,869	\$670	\$12,539
Program Manager	\$50	400	\$20,000	\$8,818	\$5,101	\$2,024	\$35,943	\$2,000	\$37,943
Senior Transportation Planner	\$30	600	\$18,000	\$7,936	\$4,591	\$3,036	\$33,563	\$1,800	\$35,363
Planner III	\$27	500	\$13,500	\$5,952	\$3,443	\$2,530	\$25,425	\$1,350	\$26,775
Planner II	\$23	1,600	\$36,800	\$16,225	\$9,385	\$8,096	\$70,507	\$3,680	\$74,187
Senior Grants and Contracts Coordinator	\$31	300	\$9,300	\$4,100	\$2,372	\$1,518	\$17,290	\$930	\$18,220
Grants Coordinator I	\$21	250	\$5,250	\$2,315	\$1,339	\$1,265	\$10,169	\$525	\$10,694
Admin Assistant II	\$23	300	\$6,900	\$3,042	\$1,760	\$1,518	\$13,220	\$690	\$13,910
Marketing Support	\$27	150	\$4,050	\$1,786	\$1,033	\$759	\$7,628	\$405	\$8,033
Computer Support	\$22	200	\$4,400	\$1,940	\$1,122	\$1,012	\$8,474	\$440	\$8,914
Public Involvement	\$27	194	\$5,229	\$2,305	\$1,334	\$980	\$9,848	\$523	\$10,371
<b>SUM</b>									<b>\$256,947</b>
Administrative Costs									\$18,053
<b>TOTAL</b>									<b>\$275,000</b>
<b>Labor (summary of labor detail by task)</b>		NCTCOG	Consultant	Total					
Task 1 - Promote Interagency Coordination: A. Create Regional Working Group		\$25,000	\$0	\$25,000					
Task 1 - Promote Interagency Coordination: B. Conduct Regional Workshops		\$50,000	\$0	\$50,000					
Task 1 - Promote Interagency Coordination: C. Conduct Capacity Building		\$20,000	\$0	\$20,000					
Task 2 - Planning to address land use-transportation problems and School Siting		\$30,000	\$0	\$30,000					
Task 3 - Planning for transportation safety in school locations		\$50,000	\$0	\$50,000					
Task 4 - Planning for transportation options and accessibility		\$100,000	\$0	\$100,000					
<b>Total Labor</b>		\$275,000	\$0	\$275,000					
<b>Direct Costs</b>									
Reproductions/Reporting	\$10,000								
Travel	\$5,000								
Website & Media & Data	\$5,000								
Meeting Costs & Direct Public Involvement	\$5,000								
<b>TOTAL Direct costs</b>	<b>\$25,000</b>								
<b>Program GRAND TOTAL</b>	<b>\$300,000</b>								

<b>TIGER Funding Request</b>	<b>210,000</b>	<b>70.0%</b>
<b>NCTCOG Cash Match (RTC Local Funds)</b>	<b>90,000</b>	<b>30.0%</b>



## Appendix F: NCTCOG Annual Budget

**NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS  
COMBINING SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE  
FEDERAL, STATE AND LOCALLY ADMINISTERED GRANTS  
YEAR ENDED SEPTEMBER 30, 2013**

	<u>Federal Funds Total</u>	<u>State and Locally Administered Total</u>	<u>Combined Total</u>
<b>REVENUES</b>			
Federal grants	\$ 20,631,697	\$ -	\$ 20,631,697
State administered grants	-	105,208,041	105,208,041
Local contributions	165,609	12,488,488	12,654,097
In-Kind	3,097,745	10,027,663	13,125,408
Program income	-	387,546	387,546
Interest income	-	51,387	51,387
<b>TOTAL REVENUES</b>	<u>23,895,051</u>	<u>128,163,125</u>	<u>152,058,176</u>
<b>EXPENDITURES</b>			
Current:			
Agency administration	212,595	2,667,193	2,879,788
Agency management	-	377	377
Community services	234	25,092,824	25,093,058
Emergency preparedness	-	1,549,436	1,549,436
Environment & development	117,736	3,221,595	3,339,331
Research & information services	890	2,885,514	2,886,404
Transportation	20,861,977	35,990,571	56,852,548
Workforce development	2,860,663	56,669,526	59,530,189
Capital Outlay	-	157,275	157,275
<b>TOTAL EXPENDITURES</b>	<u>24,054,095</u>	<u>128,234,311</u>	<u>152,288,406</u>
<b>DEFICIENCIES OF REVENUES UNDER EXPENDITURES</b>	<u>(159,044)</u>	<u>(71,186)</u>	<u>(230,230)</u>
<b>OTHER FINANCING SOURCES</b>			
Transfers In	160,744	1,010,920	1,171,664
Transfers Out	(1,700)	(1,212,553)	(1,214,253)
<b>TOTAL OTHER FINANCING SOURCES</b>	<u>159,044</u>	<u>(201,633)</u>	<u>(42,589)</u>
<b>DEFICIENCIES OF REVENUES AND OTHER FINANCING SOURCES UNDER EXPENDITURES AND OTHER FINANCING USES</b>	<u>-</u>	<u>(272,819)</u>	<u>(272,819)</u>
<b>FUND BALANCE - BEGINNING OF YEAR</b>	<u>-</u>	<u>6,538,153</u>	<u>6,538,153</u>
<b>FUND BALANCE - END OF YEAR</b>	<u>\$ -</u>	<u>\$ 6,265,334</u>	<u>\$ 6,265,334</u>

Source: NCTCOG – FY 2012-2013 Comprehensive Annual Financial Report

**NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS  
 COMBINING SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE  
 FEDERAL GRANTS  
 YEAR ENDED SEPTEMBER 30, 2013**

	Federal Funds								TOTAL
	DOE	EPA	FTA	FEMA	FAA	HUD	DOL	DOJ	
<b>REVENUES</b>									
Federal grants	\$1,317,092	\$ 652,529	\$15,239,127	\$ 113,089	\$148,052	\$273,240	\$2,888,115	\$ 453	\$20,631,697
State administered grants	-	-	-	-	-	-	-	-	-
Local contributions	-	-	165,609	-	-	-	-	-	165,609
In-Kind	519,409	625,421	1,952,915	-	-	-	-	-	3,097,745
<b>TOTAL REVENUES</b>	<b>1,836,501</b>	<b>1,277,950</b>	<b>17,357,651</b>	<b>113,089</b>	<b>148,052</b>	<b>273,240</b>	<b>2,888,115</b>	<b>453</b>	<b>23,895,051</b>
<b>EXPENDITURES</b>									
Current:									
Agency administration	7,099	15,598	143,398	1,085	7,839	11,176	26,181	219	212,595
Community services	-	-	-	-	-	-	-	234	234
Emergency preparedness	-	-	-	-	-	-	-	-	-
Environment & development	-	-	-	117,736	-	-	-	-	117,736
Research & information services	-	-	-	-	64	-	826	-	890
Transportation	1,847,867	1,262,314	17,265,480	-	147,796	338,520	-	-	20,861,977
Workforce development	-	-	-	-	-	-	2,860,663	-	2,860,663
Capital Outlay	-	-	-	-	-	-	-	-	-
<b>TOTAL EXPENDITURES</b>	<b>1,854,966</b>	<b>1,277,912</b>	<b>17,408,878</b>	<b>118,821</b>	<b>155,699</b>	<b>349,696</b>	<b>2,887,670</b>	<b>453</b>	<b>24,054,095</b>
<b>EXCESS/(DEFICIENCIES) OF REVENUES OVER/(UNDER) EXPENDITURES</b>	<b>(18,465)</b>	<b>38</b>	<b>(51,227)</b>	<b>(5,732)</b>	<b>(7,647)</b>	<b>(76,456)</b>	<b>445</b>	<b>-</b>	<b>(159,044)</b>
<b>OTHER FINANCING SOURCES</b>									
Transfers in	18,649	-	51,798	5,816	7,846	76,635	-	-	160,744
Transfers out	(184)	(38)	(571)	(84)	(199)	(179)	(445)	-	(1,700)
<b>TOTAL OTHER FINANCING SOURCES</b>	<b>18,465</b>	<b>(38)</b>	<b>51,227</b>	<b>5,732</b>	<b>7,647</b>	<b>76,456</b>	<b>(445)</b>	<b>-</b>	<b>159,044</b>
<b>EXCESS/DEFICIENCIES OF REVENUES AND OTHER FINANCING SOURCES OVER/(UNDER) EXPENDITURES AND OTHER FINANCING USES</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>FUND BALANCE - BEGINNING OF YEAR</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>FUND BALANCE - END OF YEAR</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

Source: NCTCOG – FY 2012-2013 Comprehensive Annual Financial Report

**NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS  
 COMBINING SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE  
 STATE AND LOCALLY ADMINISTERED FUNDS  
 YEAR ENDED SEPTEMBER 30, 2013**

	State and Locally Administered Funds				
	CJD	CSEC	LOCAL		TDA
			Transportation	Other	
<b>REVENUES</b>					
Federal grants	\$ -	\$ -	\$ -	\$ -	\$ -
State administered grants	803,869	10,837,001	-	-	14,538
Local contributions	263,226	-	6,855,522	4,948,040	-
In-Kind	-	-	628,318	-	-
Program income	-	-	-	-	-
Interest income	-	562	30,713	-	-
<b>TOTAL REVENUES</b>	<b>1,067,095</b>	<b>10,837,563</b>	<b>7,514,553</b>	<b>4,948,040</b>	<b>14,538</b>
<b>EXPENDITURES</b>					
Current:					
Agency administration	27,530	59,734	23,234	1,142,298	384
Agency management	-	377	-	-	-
Community services	969,873	10,675,151	-	43,968	-
Emergency preparedness	-	-	-	541,815	-
Environment & development	-	-	-	1,230,018	14,136
Research & information services	863	143	1,005	1,096,936	-
Transportation	1,555	4,092	7,584,092	5,758	-
Workforce development	-	-	-	33	-
Capital Outlay	-	95,896	-	-	-
<b>TOTAL EXPENDITURES</b>	<b>999,821</b>	<b>10,835,393</b>	<b>7,608,331</b>	<b>4,060,826</b>	<b>14,520</b>
<b>EXCESS/(DEFICIENCIES) OF REVENUES OVER/(UNDER) EXPENDITURES</b>	<b>67,274</b>	<b>2,170</b>	<b>(93,778)</b>	<b>887,214</b>	<b>18</b>
<b>OTHER FINANCING SOURCES</b>					
Transfers in	-	-	19,813	160	-
Transfers out	(771)	(2,170)	(834,914)	(329,661)	(18)
<b>TOTAL OTHER FINANCING SOURCES</b>	<b>(771)</b>	<b>(2,170)</b>	<b>(815,101)</b>	<b>(329,501)</b>	<b>(18)</b>
<b>EXCESS/DEFICIENCIES OF REVENUES AND OTHER FINANCING SOURCES OVER/(UNDER) EXPENDITURES AND OTHER FINANCING USES</b>	<b>66,503</b>	<b>-</b>	<b>(908,879)</b>	<b>557,713</b>	<b>-</b>
<b>FUND BALANCE - BEGINNING OF YEAR</b>	<b>19,561</b>	<b>-</b>	<b>6,038,421</b>	<b>306,488</b>	<b>-</b>
<b>FUND BALANCE - END OF YEAR</b>	<b>\$ 86,064</b>	<b>\$ -</b>	<b>\$ 5,129,542</b>	<b>\$ 864,201</b>	<b>\$ -</b>

Source: NCTCOG – FY 2012-2013 Comprehensive Annual Financial Report

State and Locally Administered Funds								
TCEQ		DADS	TDPS	TWC	TVC	TXDOT	TXWD	Total
Transportation	Other							
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4,830,999	1,995,650	6,756,128	1,318,297	56,183,501	127,157	22,340,901	-	105,208,041
-	-	-	-	-	-	421,700	-	12,488,488
-	-	5,894,840	51,224	2,538,597	-	914,684	-	10,027,663
79,421	-	306,830	-	-	-	1,295	-	387,546
4,499	1,193	-	-	-	-	14,420	-	51,387
4,914,919	1,996,843	12,957,798	1,369,521	58,722,098	127,157	23,693,000	-	128,163,125
27,917	22,083	147,896	87,704	624,125	8,644	495,644	-	2,667,193
-	-	-	-	-	-	-	-	377
-	-	12,926,205	429,570	-	-	48,057	-	25,092,824
-	-	-	1,007,621	-	-	-	-	1,549,436
-	1,977,088	-	-	353	-	-	-	3,221,595
11,582	(13)	205	12,045	1,480,159	-	282,589	-	2,885,514
4,875,192	(968)	5,152	591	-	-	23,515,107	-	35,990,571
-	-	-	-	56,550,993	118,500	-	-	56,669,526
-	-	-	-	61,379	-	-	-	157,275
4,914,691	1,998,190	13,079,458	1,537,531	58,717,009	127,144	24,341,397	-	128,234,311
228	(1,347)	(121,660)	(168,010)	5,089	13	(648,397)	-	(71,186)
-	240	124,057	168,955	-	-	697,695	-	1,010,920
-	(1,763)	(2,397)	(945)	(5,089)	(13)	(34,812)	-	(1,212,553)
-	(1,523)	121,660	168,010	(5,089)	(13)	662,883	-	(201,633)
228	(2,870)	-	-	-	-	14,486	-	(272,819)
255	5,311	-	-	-	-	50,120	117,997	6,538,153
\$ 483	\$ 2,441	\$ -	\$ -	\$ -	\$ -	\$ 64,606	\$ 117,997	\$ 6,265,334

Source: NCTCOG – FY 2012-2013 Comprehensive Annual Financial Report

## **Appendix G: Staff Qualifications**

**Natalie Bettger, Senior Program Manager** - Natalie Bettger is a Senior Program Manager for NCTCOG. Natalie joined NCTCOG in 1999 and is currently the manager of the Congestion Management and System Operations Program Area. This area includes congestion management, safety, security, and sustainable development. Natalie received her Master's Degree in Urban Planning from the University of Akron and a Bachelor's Degree in Geography from Northwest Missouri State University. **Natalie will serve as the Overall Project Director** and is familiar with large and complex planning activities. Natalie has lead coordination and development of the Regional Congestion Management Plan and has lead teams of staff members in developing portions of the regional transportation plan for the Dallas-Fort Worth Region, Mobility 2035-2013 Amendment. She and her staff have been primary contributors to the Vision North Texas 2050 Plan.

**Karla Weaver, AICP, Program Manager**- Karla Weaver is a Program Manager with NCTCOG. Karla joined NCTCOG in 2006 and is currently managing the Sustainable Development Program which is responsible for programs that include: transit-oriented development (TOD) planning, bicycle and pedestrian programs, land use planning, and general funding and oversight of sustainable projects. Karla received her Master's Degree in Public Administration from Florida State University, as well as a Masters in Urban and Regional Planning with an emphasis on Land Use and Growth Management. **Karla will be the Program Manager for this project** and is well versed in the coordination of complex projects. Karla was also heavily involved in the development of the Regional Planning documents referenced above. She has also led several interdisciplinary studies while at NCTCOG, directing staff and consultants at examining topics from corridor redevelopment to intermodal freight/infrastructure/ housing/economic development and growth scenarios for South Dallas which involved multiple jurisdictions and stakeholders in an area of DFW with one of the largest low-income, predominantly African American Communities.

**Patrick Mandapaka, PhD, AICP, Senior Transportation Planner – Patrick Mandapaka** serves as a Senior Transportation Planner for NCTCOG. Patrick is part of the Sustainable Development team at NCTCOG, which covers planning issues related to land use/transportation, demographics, and bicycle and pedestrian planning. Patrick received his Bachelor's Degree in Architecture from Andhra University (India) and Master's Degree in City and Regional Planning from the University of Texas at Arlington (UTA). He received his Doctoral Degree in Urban Planning and Public Policy at UTA. He received American Institute of Certified Planners (AICP), Professional Certification in GIS from UTA and Advanced Diploma in Architectural CADD from AutoDesk. Patrick joined NCTCOG in 2007 and is currently managing the Sustainable Development Funding Program and Transit-Oriented Development (TOD) planning. Before joining NCTCOG, Patrick worked as a planner in housing and community development area as a consultant for five years. **Patrick will be the day-to-day Project Manager** for the project.

## Appendix H: Federal Wage Certification

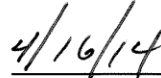
### Federal Wage Rate Requirement

The North Central Texas Council of Governments (NCTCOG), as an applicant for Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant funds, certifies that for TIGER funds awarded to NCTCOG it will comply with the requirements of Subchapter IV of Chapter 31 of Title 40 (40 U.S.C. 3141, *et. seq.*) (federal wage rate requirements) as required by the Fiscal Year 2014 Continuing Appropriations Act.

Furthermore, NCTCOG annually certifies compliance with the Davis-Bacon Act as amended, 40 U.S.C. 3141 *et. seq.*, the Copeland "Anti-Kickback" Act, as amended, 18 U.S.C. 874, and the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. 3701 *et seq.*, regarding labor standards for federally assisted projects. NCTCOG certifies to this provision within its annual Certifications and Assurances to the Federal Transit Administration.



\_\_\_\_\_  
Monte Mercer, CPA  
Deputy Executive Director  
North Central Texas Council of Governments



\_\_\_\_\_  
Date

## **Appendix I: References**

- 
- <sup>i</sup> NCTCOG School Siting website and planning:  
<http://www.nctcog.org/trans/sustdev/landuse/schoolsiting.asp>
- <sup>ii</sup> International City/Council Management Association,. "Local Governments and Schools: A Community-Oriented Approach." *ICMA IQ Report* Volume 40/Special Edition (2008), (p.8).
- <sup>iii</sup> Kuhlman, R. National Trust for Historic Preservation, (n.d.). *Helping Johnny Walk to School: Policy Recommendations for Removing Barriers to Community-Centered Schools*.
- <sup>iv</sup> FHWA, [http://safety.fhwa.dot.gov/ped\\_bike/hispanic/03p00324/01.cfm](http://safety.fhwa.dot.gov/ped_bike/hispanic/03p00324/01.cfm)
- <sup>v</sup> National Highway Traffic Safety Administration (2011). "Traffic Safety Facts, 2009 Data: Children." <http://www-nrd.nhtsa.dot.gov/Pubs/811387.pdf> (accessed January 16, 2012).
- <sup>vi</sup> U.S. Department of Transportation, *NHTS Brief: Congestion: Who is Traveling in the Peak?* (Washington, DC: U.S. DOT, 2007), <http://nhts.ornl.gov/briefs/Congestion%20-%20Peak%20Travelers.pdf>.
- <sup>vii</sup> U.S. Centers for Disease Control and Prevention, "Barriers to Children Walking to or from School—United States 2004," *Morbidity and Mortality Weekly Report* (September 30, 2005), <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5438a2.htm>.
- <sup>viii</sup> Department of Health and Human Services. Centers for Disease Control and Prevention. *Kids Walk-To-School. A Guide to Promote Walking to School*. (2000).
- <sup>ix</sup> U.S. Environmental Protection Agency, *Travel and Environmental Implications of School Siting* (Washington DC: U.S. EPA, 2003).
- <sup>x</sup> U.S. EPA.
- <sup>xi</sup> Texas Transportation Institute, *2011 Urban Mobility Report* (College Station, TX: Texas A&M University, 2011), <http://tti.tamu.edu/documents/mobility-report-2011-wappx.pdf> (accessed April 23, 2014).
- <sup>xii</sup> NCHRP Report 552, Guidelines for Analysis of Investments in Bicycle Facilities, Transportation Research Board, Washington D.C., 2006, Appendix E
- <sup>xiii</sup> Chetty Raj, et. al, "Where is the land of opportunity, The Geography of Intergenerational Mobility in the United States",

---

[http://obs.rc.fas.harvard.edu/chetty/mobility\\_geo.pdf](http://obs.rc.fas.harvard.edu/chetty/mobility_geo.pdf) (accessed April 14, 2014)

<sup>xiv</sup> The Florida Department of Environmental Protection Office of Greenways & Trails estimates an economic benefit of \$2.2 million annually from the 16-mile St. Marks Trail. [www.srs.fs.usda.gov/factsheet/pdf/rectrails.pdf](http://www.srs.fs.usda.gov/factsheet/pdf/rectrails.pdf) (accessed April 14, 2014)

<sup>xv</sup> NCHRP Report 552, Guidelines for Analysis of Investments in Bicycle Facilities, Transportation Research Board, Washington D.C., 2006, Appendix E.

<sup>xvi</sup> [http://safety.fhwa.dot.gov/ped\\_bike/hispanic/03p00324/01.cfm](http://safety.fhwa.dot.gov/ped_bike/hispanic/03p00324/01.cfm) (accessed April 14, 2014)