



# Kendall-Whittier...on the go

## Active Transportation Program

2011-2012



OU Urban Design Studio

# KWGO: Kendall-Whittier ...on the go

A visualization of an active transportation program for Kendall-Whittier Elementary School, encouraging 15% of the student population to walk or bike to school.



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# Acknowledgements

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# Kendall-Whittier ...on the go

## Active Transportation Program





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**Kendall-Whittier ...on the go**  
Active Transportation Program



# KWGO: Objective

In the United States, the environmental benefit by eliminating 5 minutes of idling daily would save 3.8 million gallons of gasoline per day and 40,000 tons of CO<sub>2</sub> emissions.

In one year this would save 1.4 billion gallons of fuel and 13 million tons of CO<sub>2</sub> emissions, or 2 billion trees per year.

- EPA.gov





traffic backed up at dismissal

# Kendall-Whittier ...on the go

Active Transportation Program

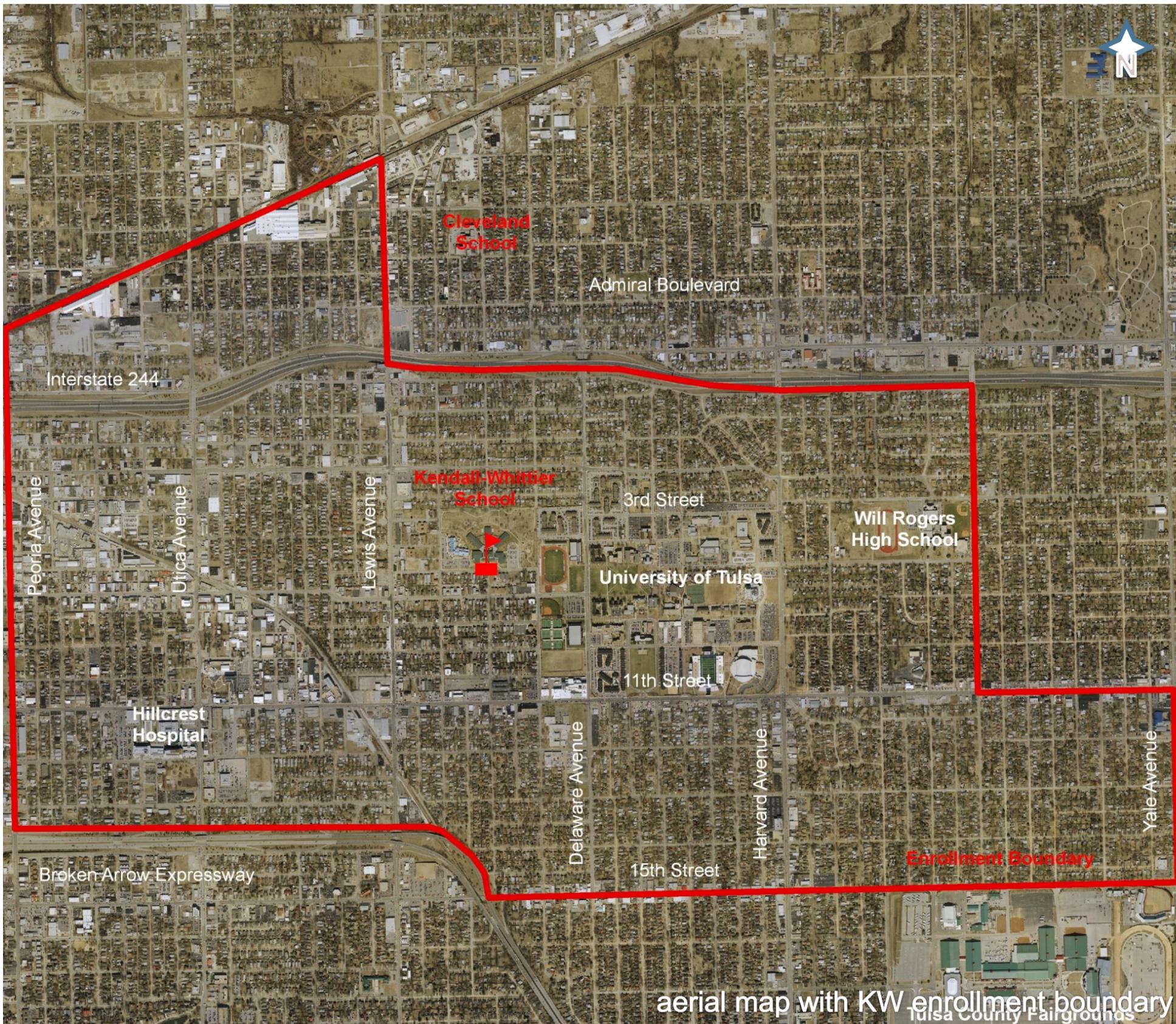
## Abstract

This project explores the feasibility of an active, sustainable transportation program for a prototype primary school, Kendall-Whittier Elementary in Tulsa, Oklahoma. Founded on census data and Safe Routes to School guidelines, this program seeks to promote physical activity, including walking and biking to and from school. Uncovering obstacles, myths, and perceptions associated with sustainable transportation are main objectives. Target goals on which to measure results, outcomes, and benefits to the student population are used to quantify the success of the program. The study provides a usable format that is replicable in other primary schools across the country to promote a healthier youth and a cleaner environment.

## Background

Kendall Whittier neighborhood was one of Tulsa's first suburbs and was a vibrant area for over 40 years. In the 1960's it began a period of decline. In 1990, The City of Tulsa created a master plan to promote neighborhood revitalization. In 1997, two of Tulsa's oldest schools, Kendall School & Whittier School, were torn down to merge into one new school, Kendall-Whittier Elementary School. It was designed as a neighborhood community school to help facilitate a network of supportive partnerships between the school, the students, and the families of the community. The school today is K-6<sup>th</sup> grade with a student population of over 1200. They are facing challenges regarding overcapacity in the classrooms, transportation issues, as well as the struggles of a low-income, high poverty area.





## Focus Area

The primary focus area for our active transportation project is the enrollment boundary for Kendall-Whittier Elementary School. This boundary traces Peoria Ave. to the west, Burlington Northern Santa Fe Railroad and Interstate 244 to the north, Harvard and Yale Avenues to the east, and Highway 51 and 15th Street to the south. In addition, we included the central section north of Interstate 244 due to the large concentration of school-aged children in the area, many of which attend Kendall-Whittier as transfer students.

## Objective

Our primary objective is to get 15% of 3rd-6th graders at Kendall-Whittier to walk or bike to and from school over a three-year period through our active transportation program and partnership with the Tulsa HUB.

This plan serves as a prototype for other neighborhood community schools in the Tulsa area, so that they might also replicate and implement this program. The breakdown of students for our target percentages is:

90% of students in walking target area (roughly 85 students).  
50% of students in biking target area (roughly 80 students).

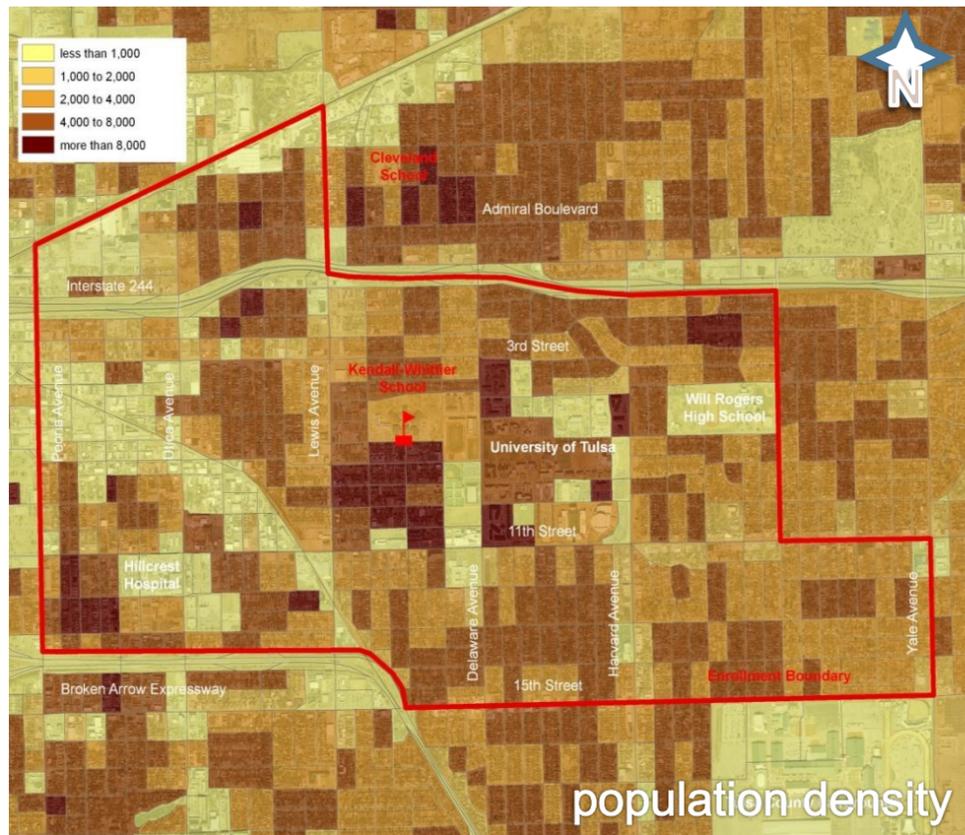
# Kendall-Whittier ...on the go

Active Transportation Program

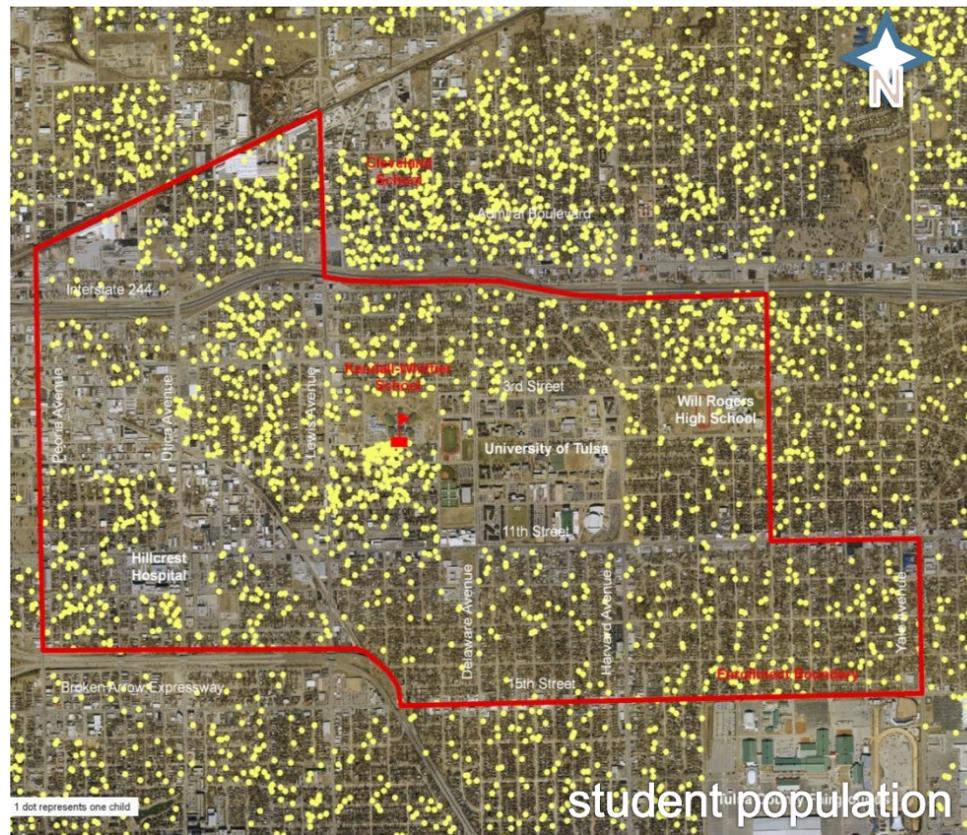


A study demonstrated that children who walk to school burn more calories than those who are driven. The number of calories burned weekly through walking to school is the equivalent of two hour-long classes of physical education.

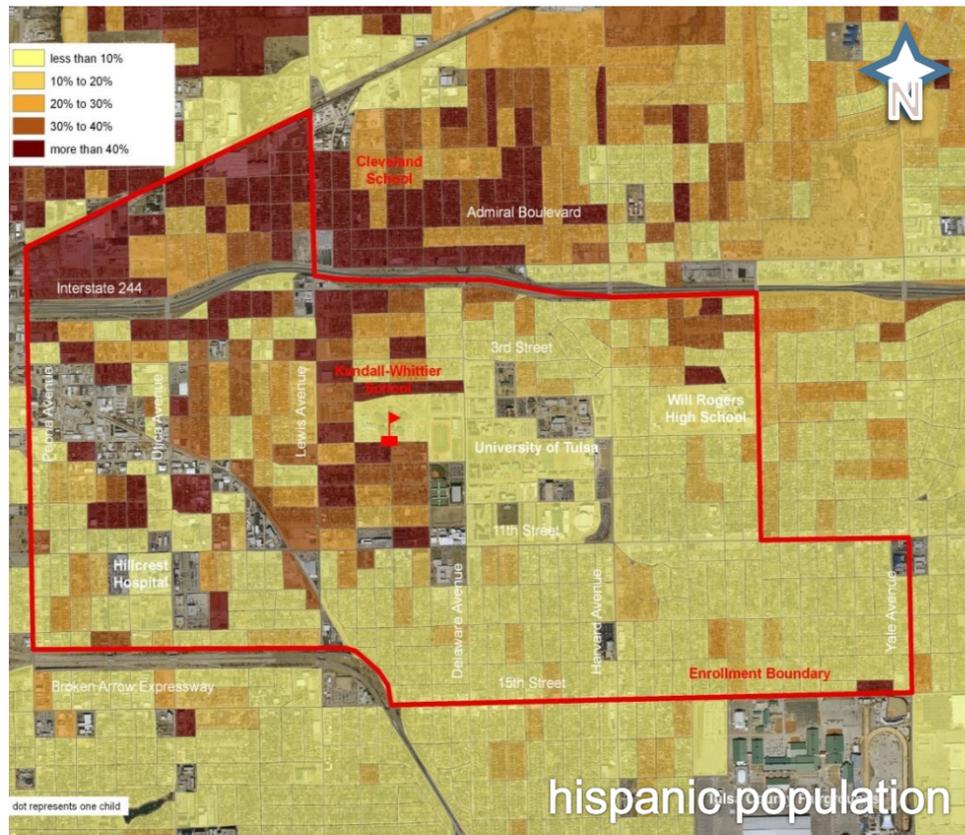
- Reducing Children's Car Use: The health and potential car dependency impacts



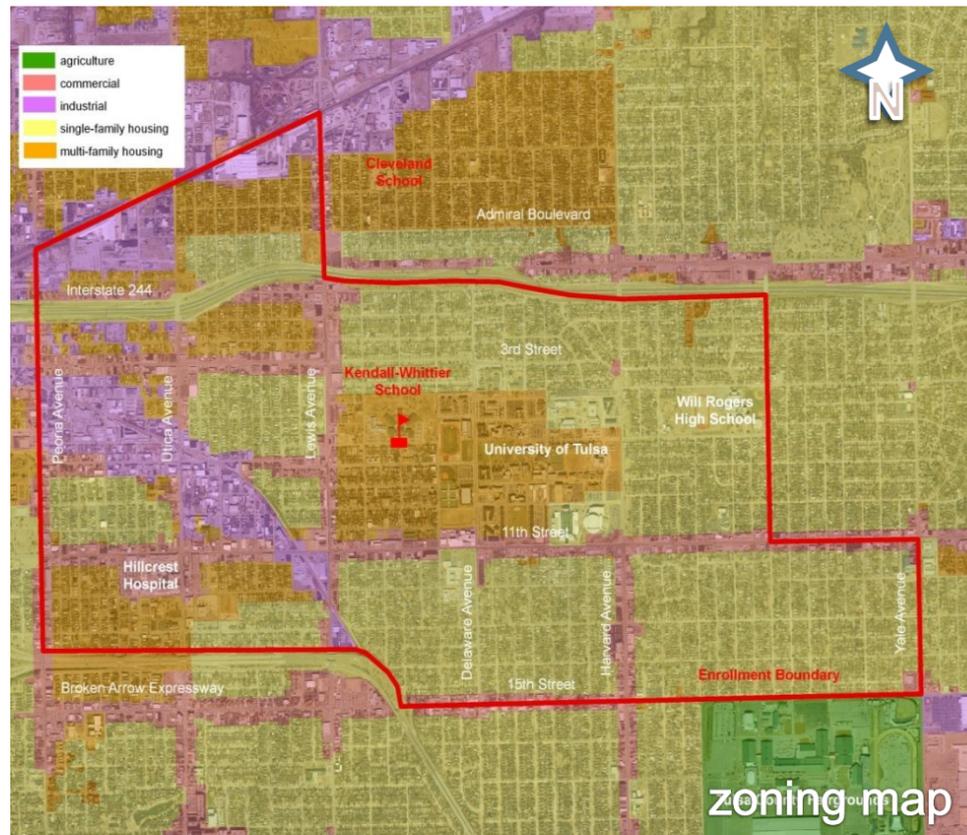
population density



student population



hispanic population



zoning map

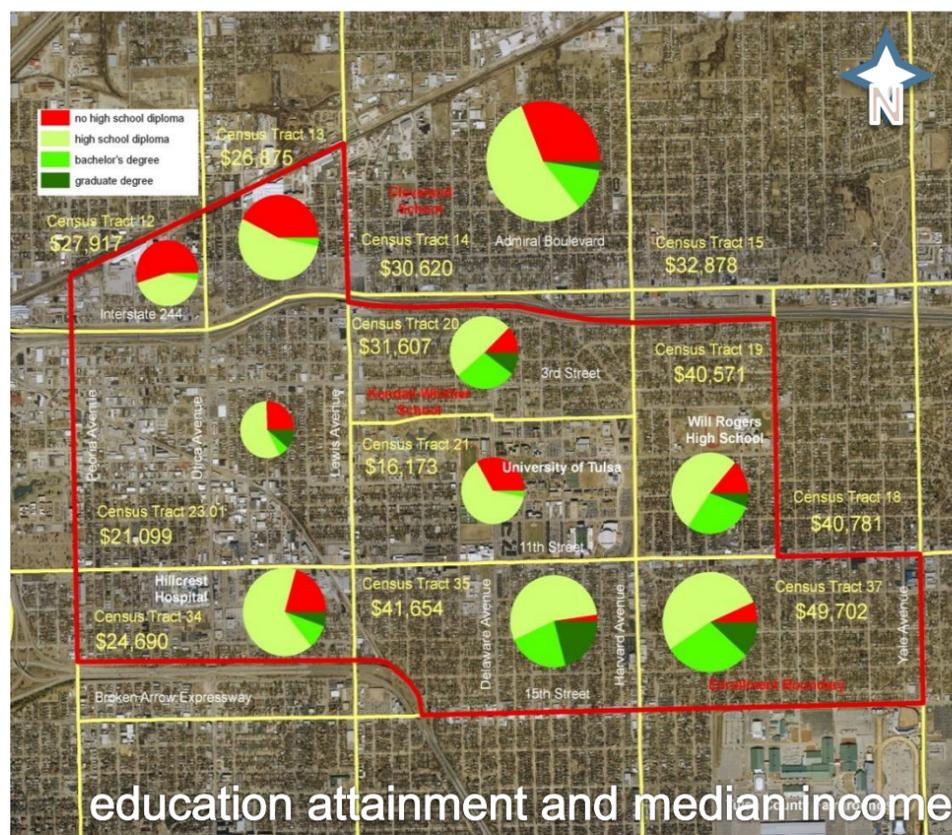
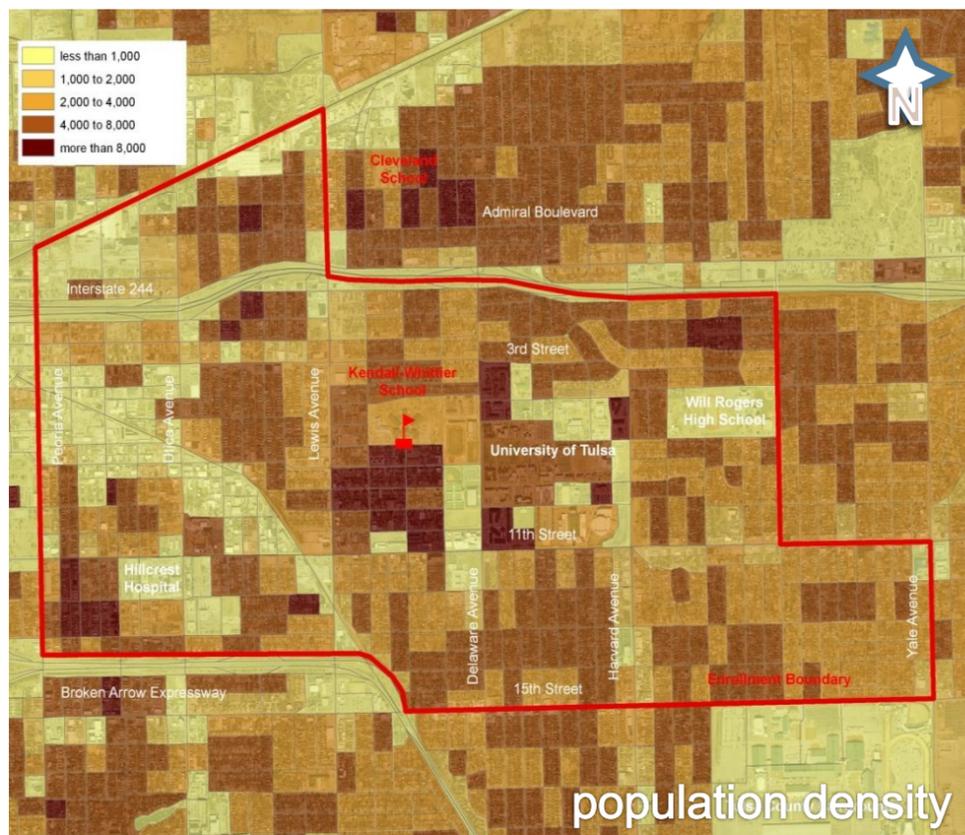
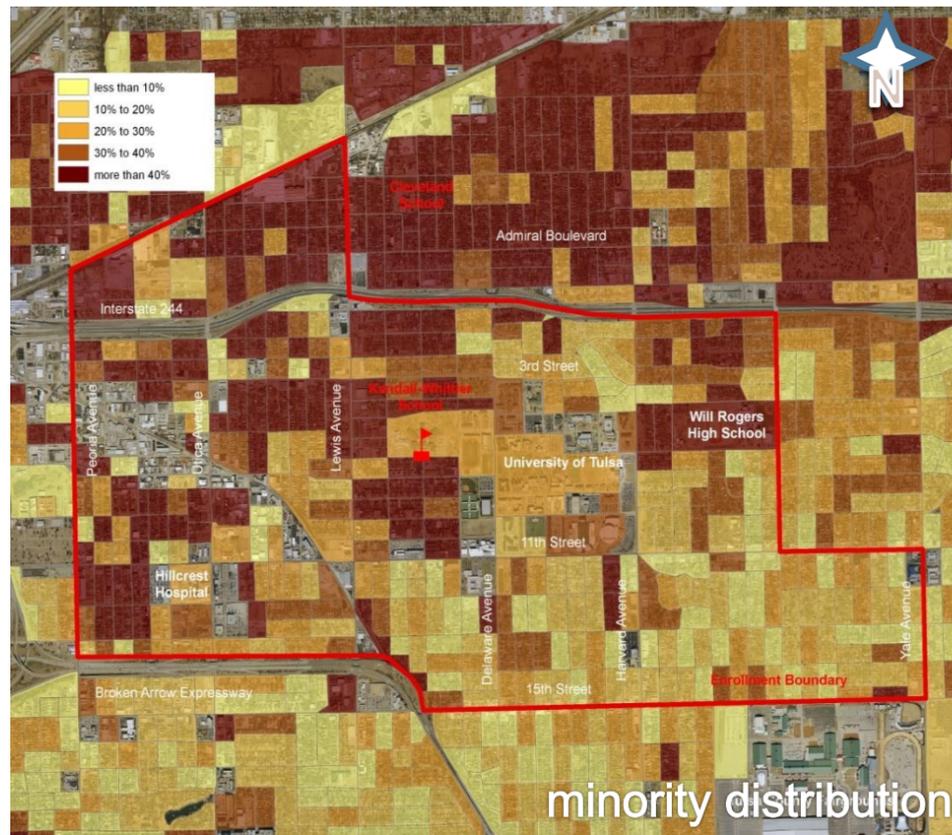
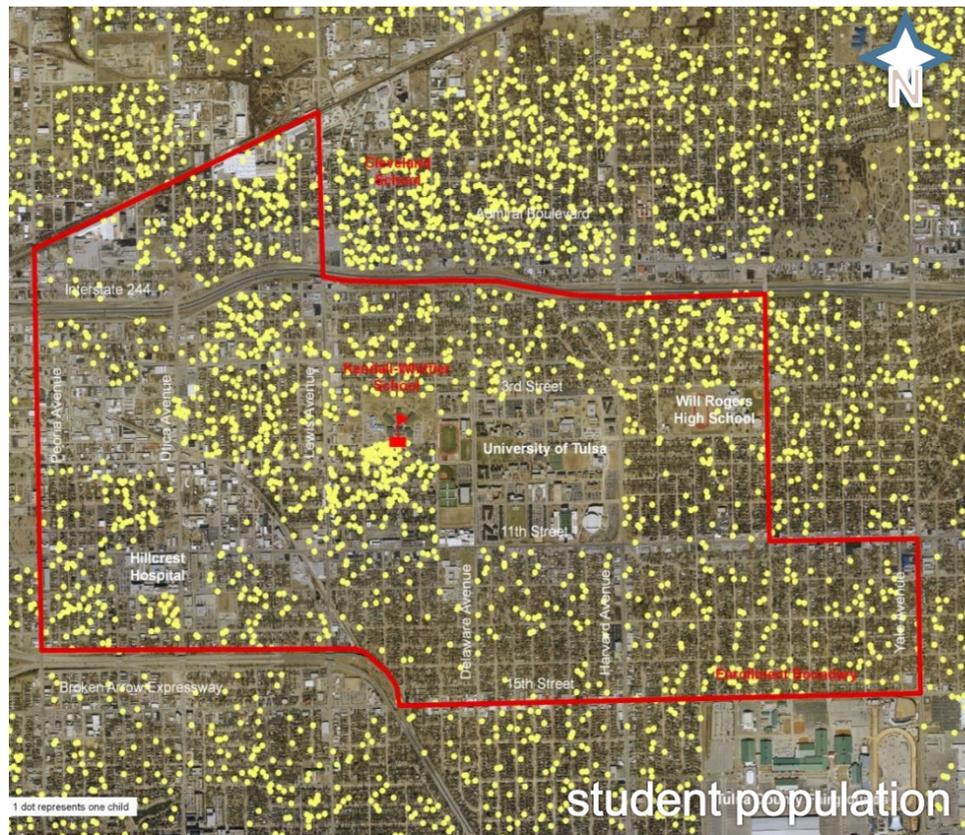
# Census Review Population Density

In the Kendall-Whittier area, the densest populations, shown on the first map, are within five blocks to the south of the school. Areas of notable low densities are to the northwest and southeast.

The student population, shown on the second map represented with yellow dots, reveals several anomalies. The University of Tulsa, immediately east of the school, shows a dense population on the first map but no children on the second. Similarly, south of TU is a relatively dense residential neighborhood, with a low student population. An explanation may be that this neighborhood is predominately older.

The third map shows the Hispanic population surrounding Kendall-Whittier. A majority of the parents at Kendall-Whittier are Spanish speaking. The Hispanic population is prominent in the northwest. Non-Hispanic populations appear more prevalent in the southeast.

The fourth map, a zoning map, shows the densities and zoned districts surrounding Kendall-Whittier. Yellow-green and orange are zoned for single and multi-family residence, respectfully. The purple industrial zoning along the railroad tracks explains why few people live there.



# Census Review Economics Factors

These maps illustrate the distribution of minorities as well as the economics of the neighborhoods surrounding Kendall-Whittier, the educational attainment, and the median income.

Some conclusions can be drawn from these comparisons. Tracts with a larger minority population, such as to the northwest, appear to have more school aged children and a lower household income. Tracts in the southeast have fewer minorities, a higher median household income and a higher concentration of residence receiving bachelor's and graduate degrees.

On the education attainment and median income map, neighborhoods are broken up into census tracts. The pie graphs show two factors, the size of the pie illustrates the population in that tract, the educational attainment is shown through the colors. The yellow font shows the median household income.

Kendall-Whittier ...on the go  
Research



# Parent Survey

26 surveys were completed and returned

Based on perceived safety, 57% of parents surveyed felt that it is not safe for their child to bike in the neighborhood.

0%	Very Safe
8%	Safe
35%	Neutral
46%	Not Safe
11%	Dangerous

## Parent safety concerns

54%	Traffic
42%	Dogs
19%	Bad Sidewalks
12%	Burned Out Streetlights
8%	No Reasons

## Convenience Issues

65%	Weather
46%	Traffic
23%	Distance
19%	Lack of Crossing-Guards
15%	More Convenient to Drive
8%	Child's Irresponsibility

## How do children arrive to/leave school?

### Car

81% arrive / 77% leave

### Other Means

23% arrive / 19% leave

27% reported problems getting child to school

54% reported no problems

42% of parents replied that their child would be interested in an afterschool bike program.

46% of parents said they would be interesting in helping with such a program

# Police Survey

Gilcrease division of the Tulsa Police Department

47 surveys collected

## Biking in Tulsa

feasible for adults 75%

feasible for children 40%

## Biking In Kendall-Whittier area

feasible for adults 70%

feasible for children 49%

## Where should children ride bikes?

sidewalks only 60%

both streets and sidewalks 32%

neither streets nor sidewalks 6%

streets only 2%

When listing possible barriers, a number of concerns were raised. Traffic was the highest at 57%, followed by conditions of sidewalks and stray dogs both above 50% of the response. Additional concerns were adult supervision, bullying and child predators. Only 9% of the officers said that there were no barriers.

Survey can be found on page 42 and 43 if the appendix.

# Surveys Methodology

Surveys were conducted by the Sociology Department at The University of Tulsa. The parent surveys were administered by TU students during a parent/teacher conference at the school. Not enough were collected to constitute a representative sample of the target population, yet there are patterns within the data that we have. The majority of police respondents said that the sidewalk is the appropriate place for children to ride their bikes while many parent respondents listed sidewalks as a travel barrier for their children. Police conception of bicycle safety on sidewalks contradicts research provided by Safe Routes to Schools that states the safest place to operate a bicycle is on the road riding with traffic.

The most apparent of these patterns is that while there seems to be a great target group at Kendall-Whittier with which to start a bike program, there is also great ambivalence – parents seem to be both for and against such a program. While 42% of the parents surveyed said that their child(ren) would be interested in an after school bike program, and only 2% said that they wouldn't be, the majority (62%) of parents surveyed also said that they wouldn't be comfortable with allowing their children to get to school on their own. There are a number of reasons given; for both parents and police surveyed traffic and dogs were among the most prominent of these reasons. A large number of parent respondents said that they would be interested in helping with the bike program. If these adults can assist to address the fear of children travelling on their own then implementing the bike program has the potential to work, but without adult supervision it seems unlikely to be accepted by the parents.

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## Pedestrian Route Directness

Buffer Area  
Service Area

=1.41

The ratio of network distance to straight-line distance for two selected points. Numbers closer to one may represent better connectivity.

Ideal: 1.2 - 1.5

## Block Size

376 total blocks  
7.67 acres per block

Measured by the length and width. Blocks that are smaller in size presumably infer better connectivity.

Ideal: 7-12 acres

## Total Roadway

80.7 Linear Miles  
17 Linear Miles per square mile

The total distance of roadway per unit of area. It is presumed that higher quantities equates to higher connectivity.

No Ideal Established

## Intersection Density

564 total intersection  
125 intersections per square mile

The number of intersections per unit of area. It is presumed that higher densities equates to higher connectivity.

Ideal: >78 per square mile

# Research Study Walkability

These measurements have been designed by the Safe Routes to School program to determine how well connected the road network is in a given area.

Because of the grid pattern used throughout Tulsa, the Kendall-Whittier enrollment area has great walkability. All four calculations ranked positive on the road network connectivity spectrum.

Today's connectivity has been compromised by the Urban Renewal program back in the 90's that created Kendall Whittier Elementary School and Park and removed Columbia Avenue and Birmingham Avenue from 5<sup>th</sup> Place to 4<sup>th</sup> Street. Even with these two streets factored in the equation, the enrollment area still has an overall above average connectivity score.

# Kendall-Whittier ...on the go

Research



## Walking Statistics

### Speed

Walking Speed: 2.7 mph  
Actual Commute Speed: 1.9 mph

### Distance

Walk Capability: 1 mile  
Practical Walk Distance: .38 miles

### Time

Median Time Spent: 8 minutes  
Practical Commute Time: 12 minutes

## Biking Statistics

### Speed

Cycling Speed: 7 mph  
Actual Commute Speed: 3.2 mph

### Distance

Cycling Capability: 2 miles  
Practical Cycling Distance: .8 miles

### Time

Median Time Spent: 6.5 minutes  
Practical Commute Time: 15 minutes

# Research Studies

## Walking & Biking Statistics

Research measurements are for students in grades 3<sup>rd</sup> through 8<sup>th</sup>, and it suggests that while children younger than 3<sup>rd</sup> grade are likely physically capable of a short commute to and from school, children younger than 3<sup>rd</sup> grade are not developmentally capable of a safe commute to school unsupervised. Younger commuters may be escorted by a parent or older sibling.

Recommendations are based on the amount of time and energy spent before a full day of school.

Within the enrollment area, the Kendall-Whittier park and TU campus are significantly larger blocks and individually would have relatively poor connectivity results by these calculations. These calculations are based on the road network and would not figure in the footpaths in in the Kendall-Whittier park or on TU's campus.

\*Statistics were obtained from Promoting Safe Walking and Biking to School: The Marin County Success Story. *American Journal of Public Health.*



# Kendall-Whittier ...on the go

Research





children arriving at school



5<sup>th</sup> place in front of KW



6<sup>th</sup> avenue and Columbia

## Field Observations Methodology

Partnering with the students at The University of Tulsa, we established an observation survey to study and compare the arrival and dismissal processes. Our goal was to establish a baseline for arrival and dismissal, in which we could improve on and then measure the success of the program.

Factors observed included bus ridership, drop-off and pick-up counts, handicap procedures, pedestrian and automotive traffic flows, including bottlenecks, hazards, and crosswalk utilization.

We calculated transaction times for arrival and dismissal by timing how long it took for a parent to arrive at the site, drop off their student and leave the school area.

# Kendall-Whittier ...on the go

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students walking on Birmingham to KW



dismissal in KW park

# Field Observations

## Arrival

## Dismissal

Doors open at the school at 7:30am, students need to be inside by 7:40am.

Students were recorded arriving at school as early as 7:10am.

A crossing guard directs traffic at 6<sup>th</sup> Street and Birmingham, a block south of the school. Teachers and Safety Patrol students assist with traffic on 5<sup>th</sup> Place in front of the school.

Students who arrive early play in the grass in front of the gymnasium, with limited supervision.

Peak traffic congestion occurs between 7:28 - 7:43am.

It takes between 4 and 7 minutes for a parent to make their way through the traffic queue, dropping off their student and leaving the school area.

The most students were observed between 7:30 - 7:36am.

Students are released from school at 2:45pm, through the rear of the building into Kendall-Whittier Park.

Parents were recorded picking students up as early as 2:25pm, to beat the afternoon rush.

Parents arrive at the school via car around 2:35pm and walk to the back of the school at 2:40pm.

Traffic congestion occurs between 2:45pm - 3:00pm.

The most students were observed between 2:51pm and 2:59pm.

It takes between 2½ and 5½ minutes for a student to make their way through the transaction cycle, leaving school, finding their parent, buckling up and leaving the school area.

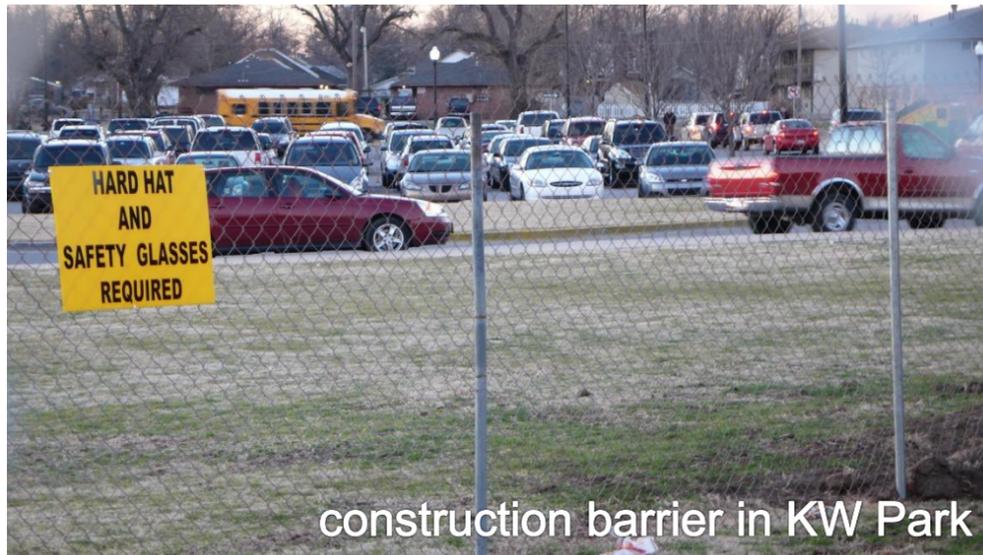
At 3:10pm, students whose parents are late to pick them up are escorted to a playground area adjacent to the parking lot where they play with teacher supervision.

# Kendall-Whittier ...on the go

Research



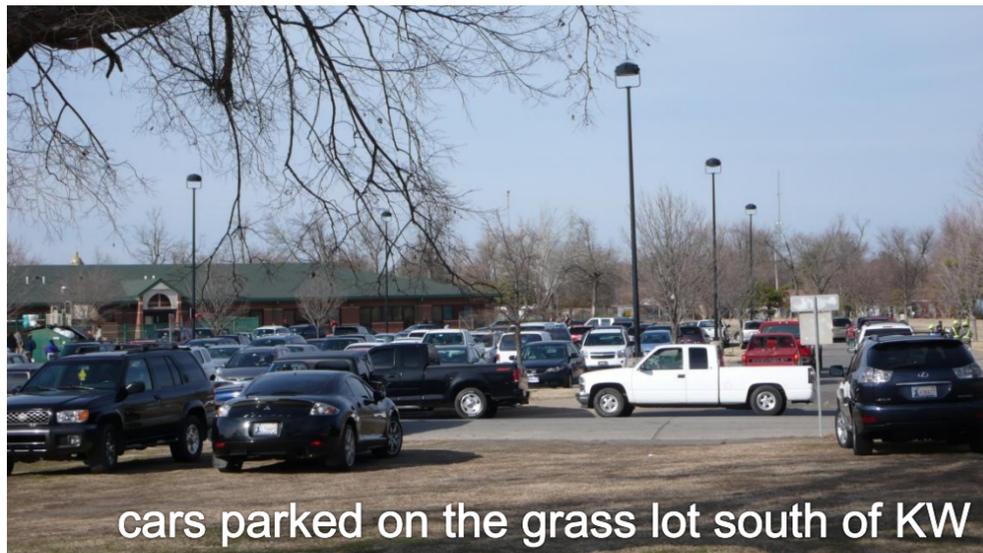
## Kendall-Whittier Changes



construction barrier in KW Park



KW construction in KW Park



cars parked on the grass lot south of KW

A school expansion project started in January on the north side of the school which changed the dismissal procedures. Instead of being let out the rear of the school into Kendall-Whittier Park, students were dismissed through the eastern door, into the parking lot and through the gymnasium on the southwest side of the school, on to 5<sup>th</sup> place. At the same time, another construction project began on the blocks west of the school and eventually to the south west. Congestion times grew significantly during afternoon dismissal.

To combat dismissal congestion, 5<sup>th</sup> Place was turned into a one-way street running east to west ending at Atlanta Avenue. Ropes were put up throughout the parking lot to prevent cars from parking. A numbered tag system was implemented in which a parent were issued a numbered tag corresponding to their child's in order to pick up their child from the school. This process included keeping all children queued in the building which parents lined up in their vehicles and presented their tag to a teacher volunteer when they reached the front of the car line.

Dismissal times grew significantly, reportedly backing cars up mile north along Delaware Avenue for the first few days, the dismissal process took about one hour and fifteen minutes. After the new process was adopted by the parents, transaction times were reduced significantly and the process only took about a half hour, closer to the original times.

A survey was conducted by the school to gauge parent reaction, over 100 were distributed and collected. Reportedly, parents reacted positively to the security aspect of the process and the longer process was an issue for about half of the parents.

The numbered tag system was abandoned in spring, not because of parent complaints, but because teachers were feeling burnt out by the process. The new release process has students exiting through the gym and cafeteria at the same time. They can play in the park until their parent arrives.

## Field Observations

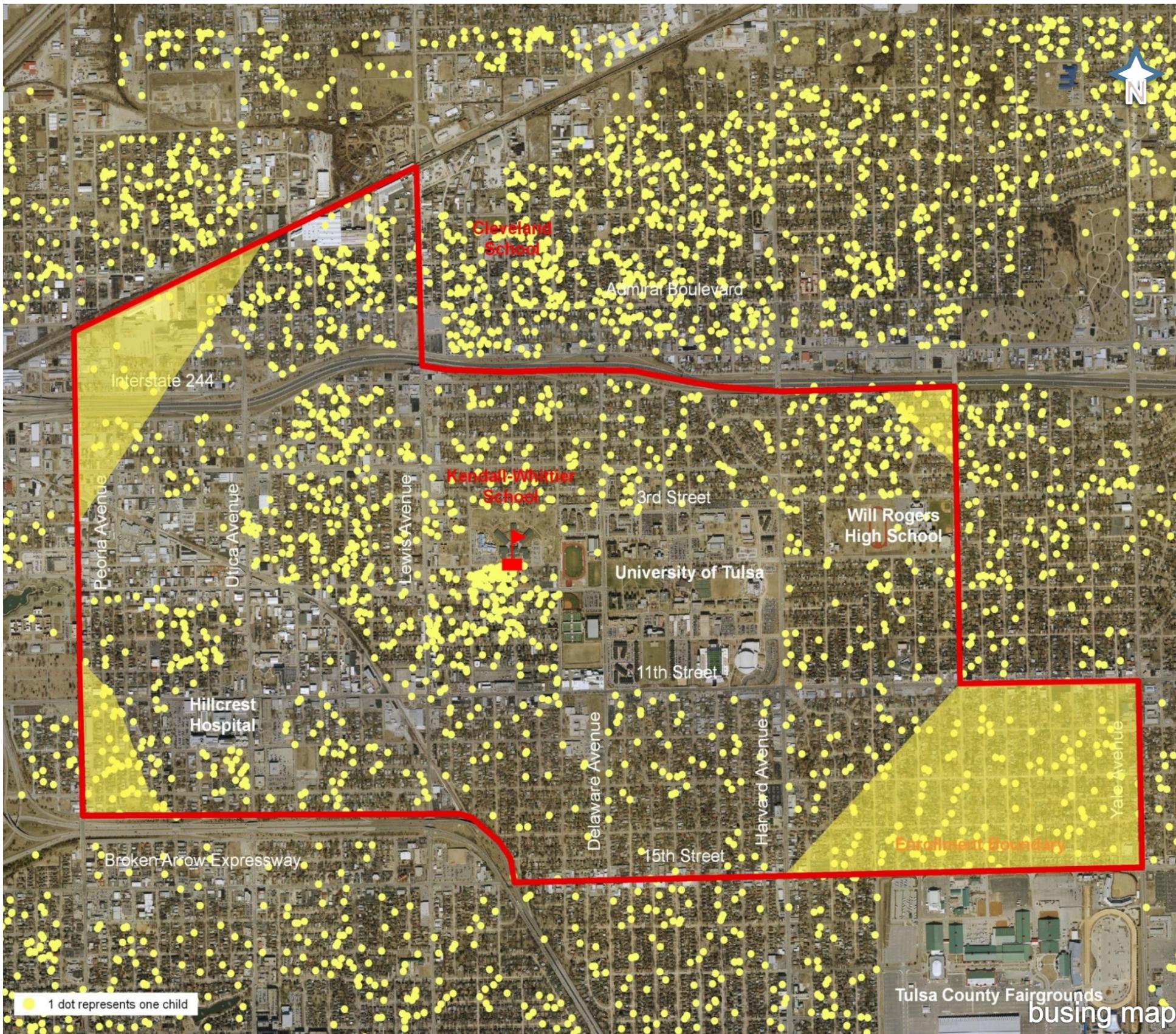
### Notes

Though changes were made to the release process, this does not impact our survey. The original transaction times act as a base on which additional surveys can be recorded and compared to the new and future transaction times.

# Kendall-Whittier ...on the go

Research





## Field Observations Busing

Tulsa Public Schools will only provide busing for students who live within the school enrollment area and live more than 1.5 miles from the school.

This map illustrates The Kendall-Whittier busing services. The yellow dots mark the homes of school-aged children according to the U.S. Census data of 2010, which are potential Kendall-Whittier students. The dots are accurate to the census blocks but are randomized to protect privacy. The school enrollment area is outlined in red. Only students residing in the yellow shaded areas qualify for busing.

There are two bus stops, the east stop is at Will Rogers High School and the west stop is on Oswego Avenue, two blocks west of Hillcrest Hospital. These bus stops are not within the yellow shaded areas. Students must commute to the bus.

### Additional Information

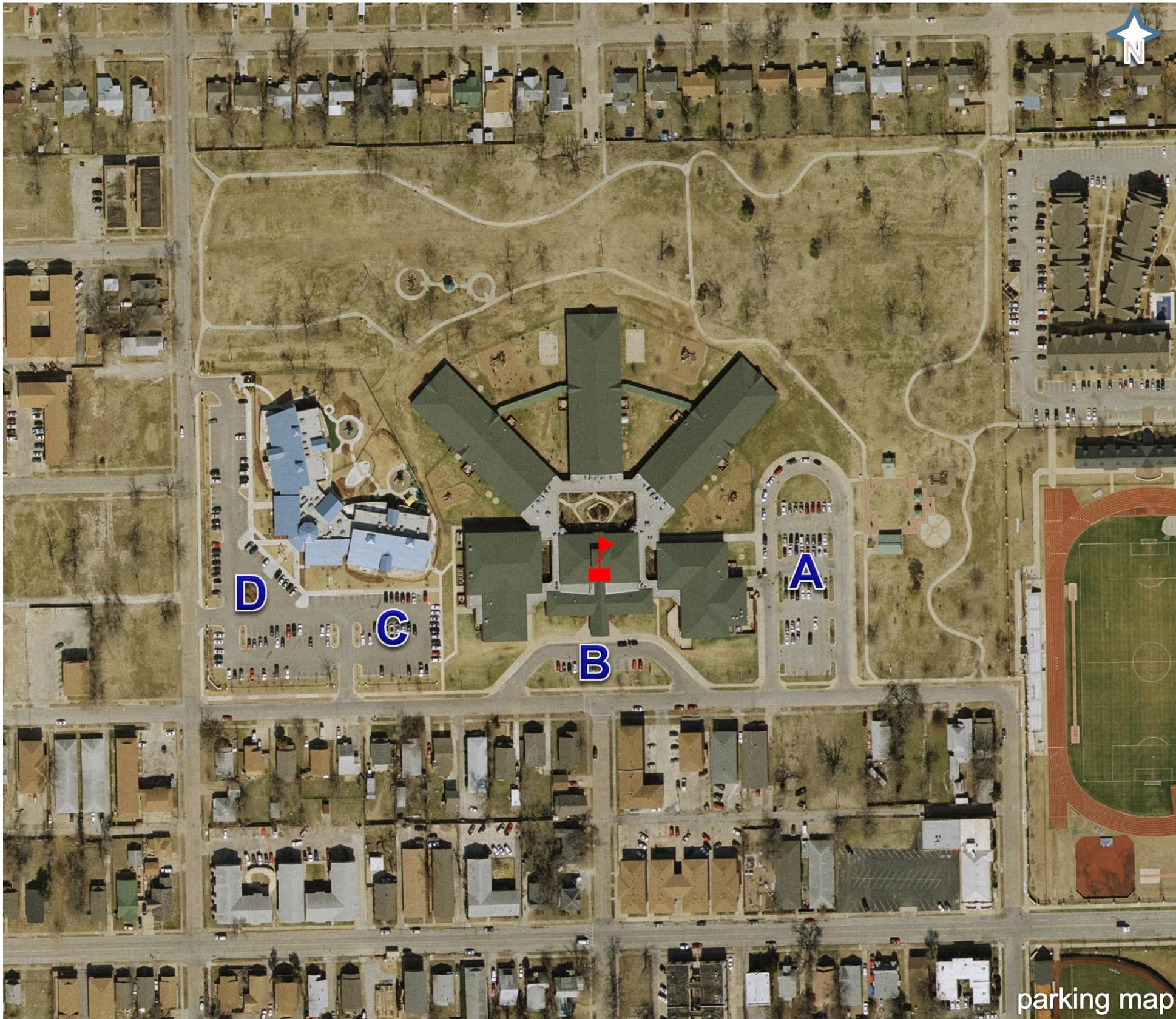
Information obtained from Tulsa Public Schools shows that only 3% of students are eligible for bus service.

Field observations shows less than .5% utilize bus transport. (about 6 students)

# Kendall-Whittier ...on the go

Research





# Field Observations

## Parking Study

### Off-Street Parking:

Kendall-Whittier East Lot (A):	55 spaces
Kendall-Whittier South Drive (B):	13 spaces
Educare Lot on TPS Property (C):	54 spaces
Remainder of Educare Lot (D):	116 spaces

### Drop-off Zones:

U-shaped Drive East of KW (A):	38 spaces
South Drive of KW (B):	19 spaces
EduCare (C)	4 spaces

Kendall-Whittier has 122 parking spaces on school property, not including the drop-off spaces. The zoning ordinance requires one space per 1,200 square feet of building area. We estimate the area of Kendall-Whittier to be 130,000 square feet including the proposed additions, therefore the parking requirement would be 108 spaces and the school is in compliance. The 122 spaces also would meet the practical needs of the staff of 120 assuming that every staff person drives to work. Educare also has adequate spaces for its needs (lot D) without including Kendall-Whittier's lot (lot C). Whether or not parents and visitors find the parking convenient, it is proven to be sufficient.

# Kendall-Whittier ...on the go

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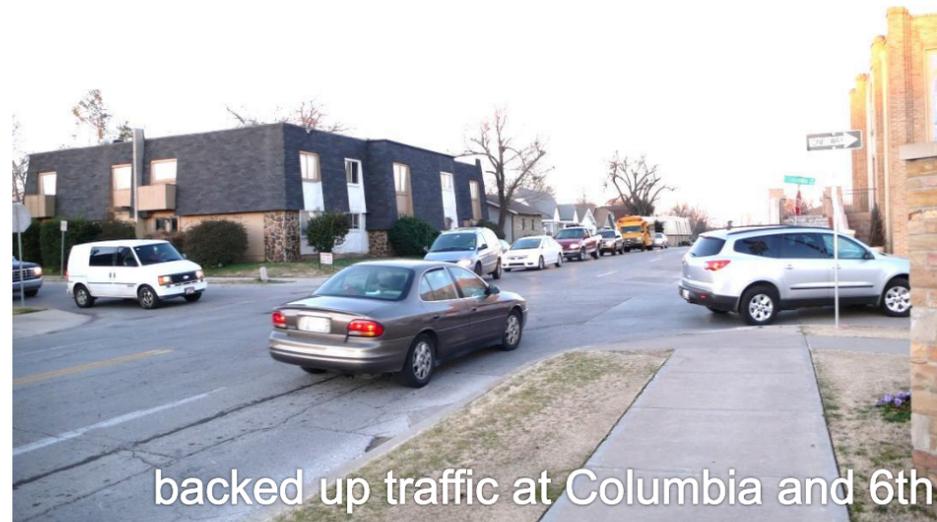




teacher and safety patrol directing traffic at Birmingham and 5<sup>th</sup> place



parking in street to drop off student



backed up traffic at Columbia and 6th



handicapped arrival bus

## The Findings Concerns

- Congestion and average transaction times during arrival and dismissal are limited; indicating that the perception of chaos is exaggerated.
- Street/sidewalk connectivity immediately adjacent to the school is compromised by a number of closings that occurred during the urban renewal process.
- Parents observed picking up students 20 minutes early from by taking them out of class.
- School faculty are directing traffic, against TPS policy.
  - They also do not wear safety vests
  - Safety patrol students do wear reflective vests.
- Few students are currently walking or biking to school.

# Kendall-Whittier ...on the go

Research

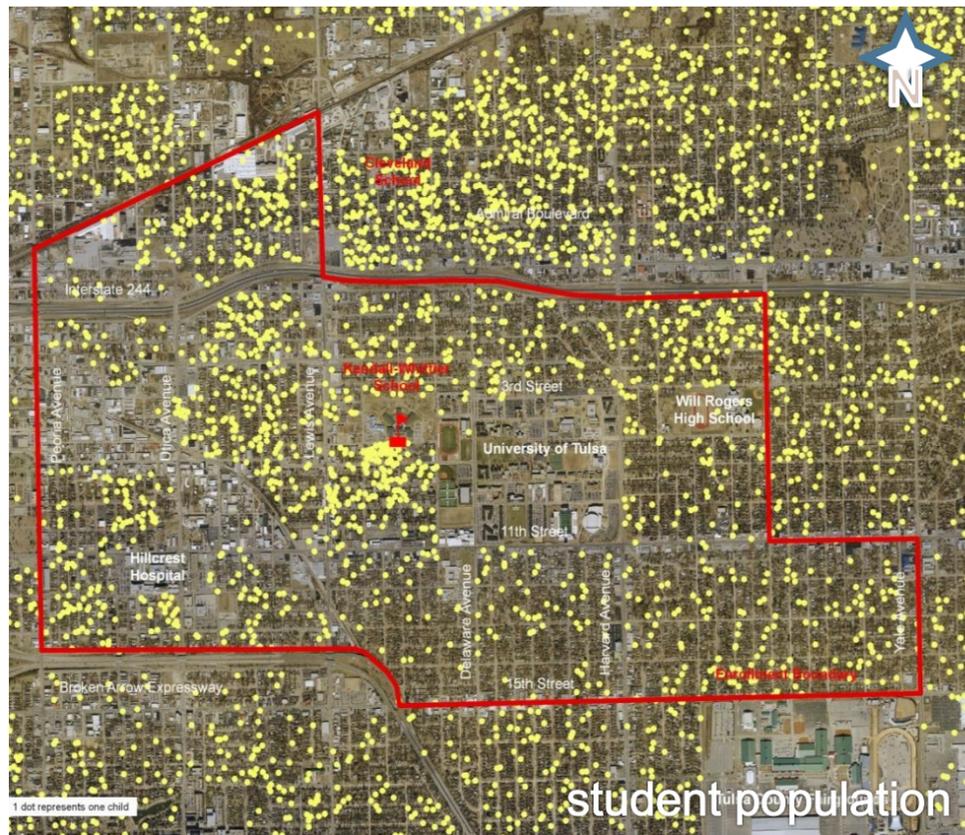


# KWGO: Walking & Biking

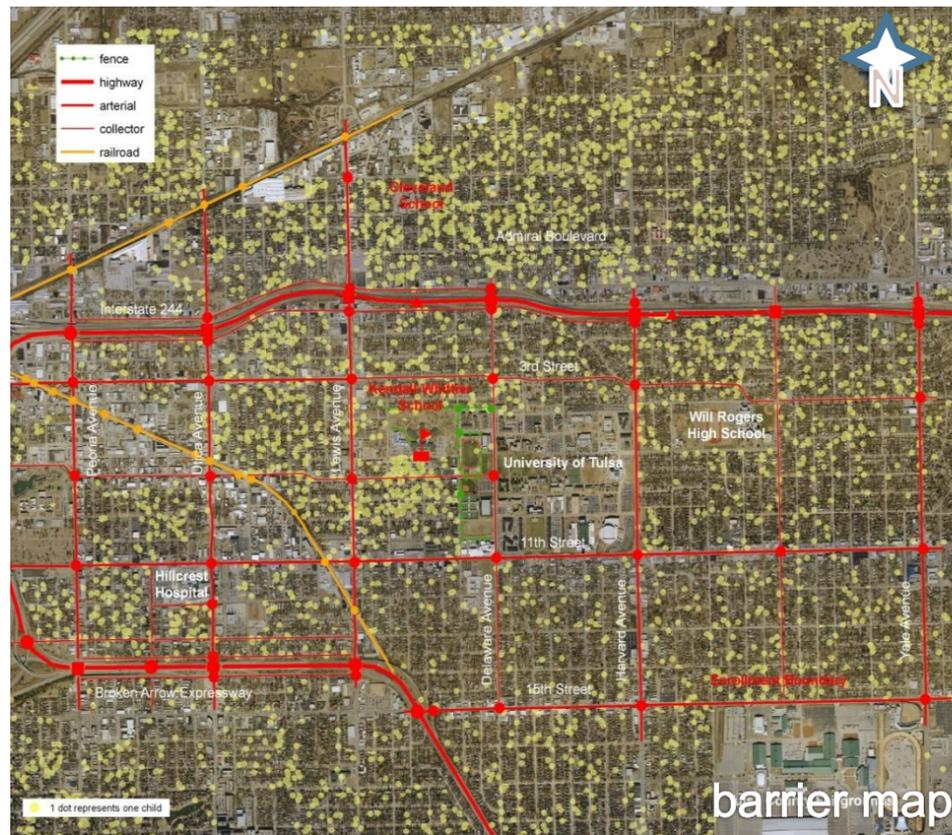
Estimates of the amount of time we voluntarily idle each day we drive range from 5 to 10 minutes per car. In just 5 minutes of idling we can burn between a half and a whole cup of gasoline, depending on engine size.

Over the course of a year this adds up to as much as 10 to 20 gallons of gas. By not voluntarily idling 5 minutes per day, the total annual benefits could range from \$30 to \$60, up to \$85 in a mid-sized SUV.

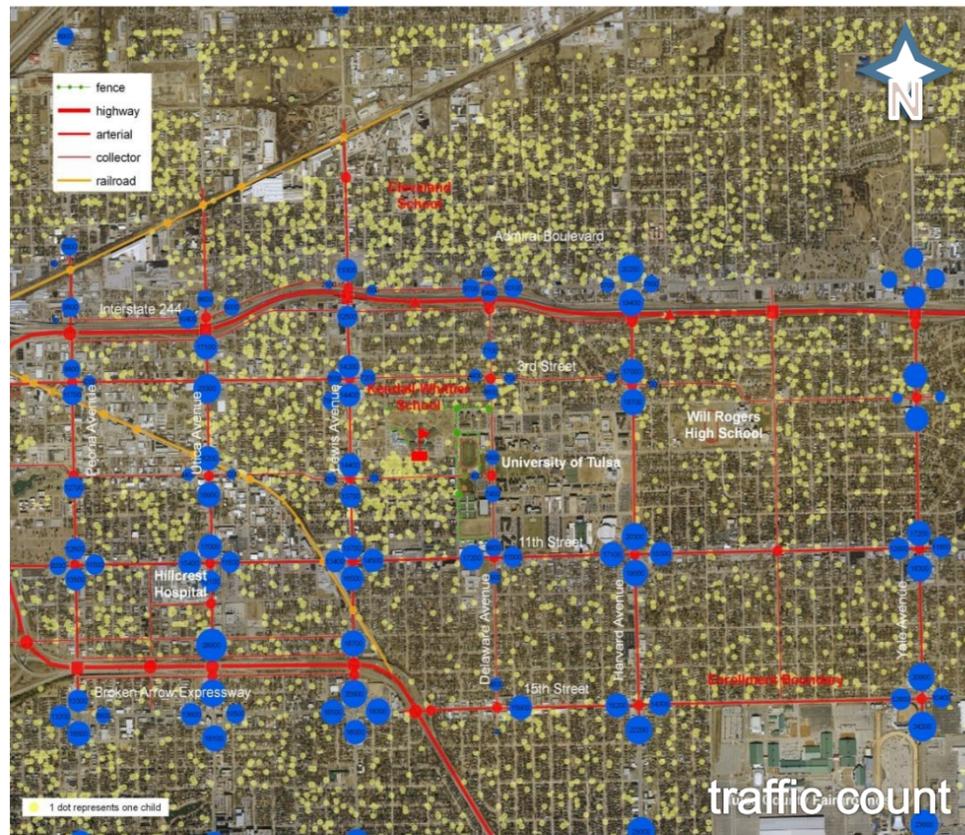
- EPA.gov



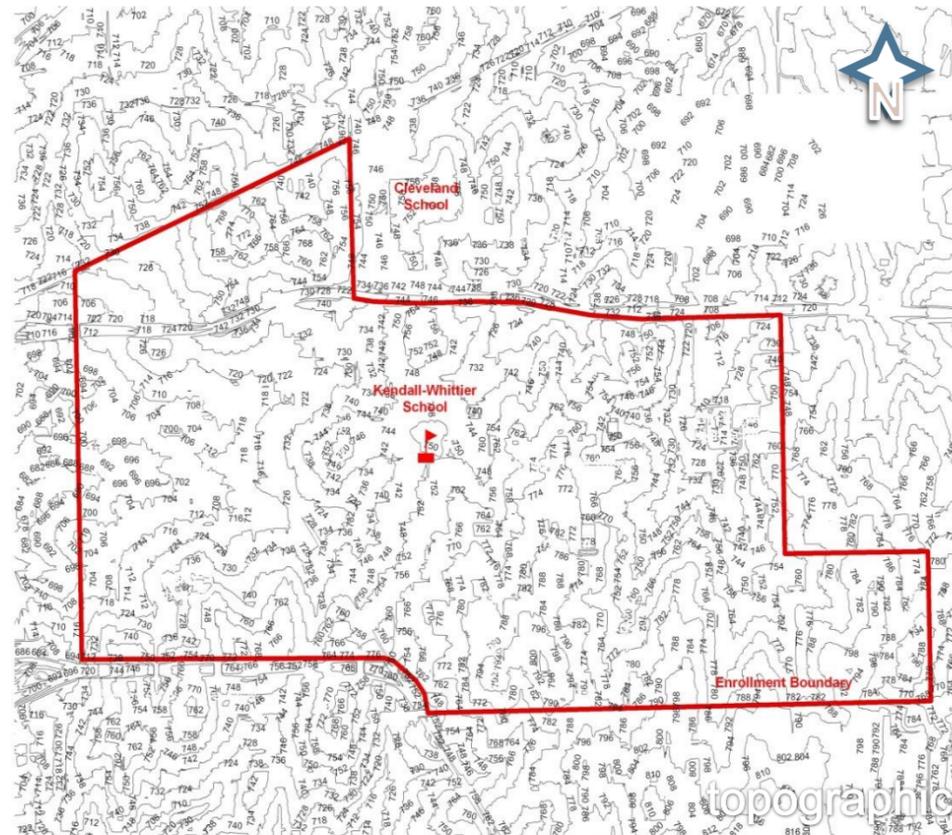
student population



barrier map



traffic count



topographic

## Area Information Commute Factors

The yellow dots represent school aged children around Kendall-Whittier. Each of the other three maps illustrates a different factor calculated in the active commute to school.

The second map, a barrier map, shows fences, different roadways and railroad tracks. Using these a route with the least resistance can be determined.

The traffic count map shows a blue dot at the intersections on the third map. The larger the blue dot the more traffic throughout the day. For example, Harvard Avenue and 11<sup>th</sup> Street, southeast of TU, has about 20,000 cars per day traveling north and south and the intersection northwest of the school at 3<sup>rd</sup> Street and Lewis Avenue has about 7,000 traveling east and west.

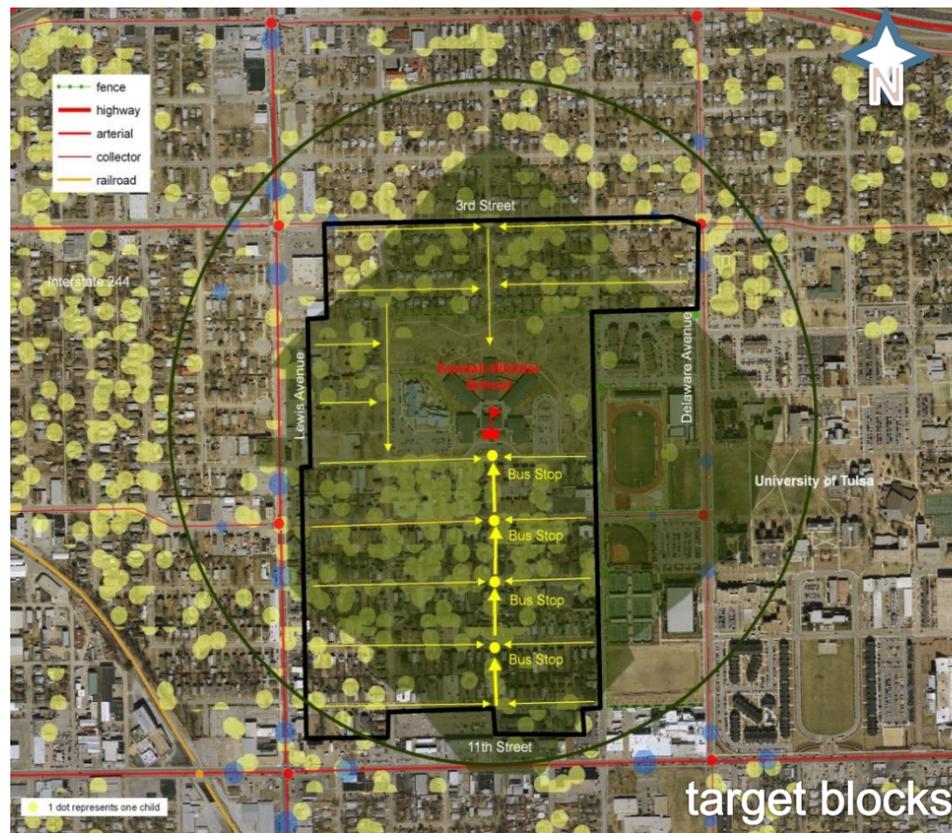
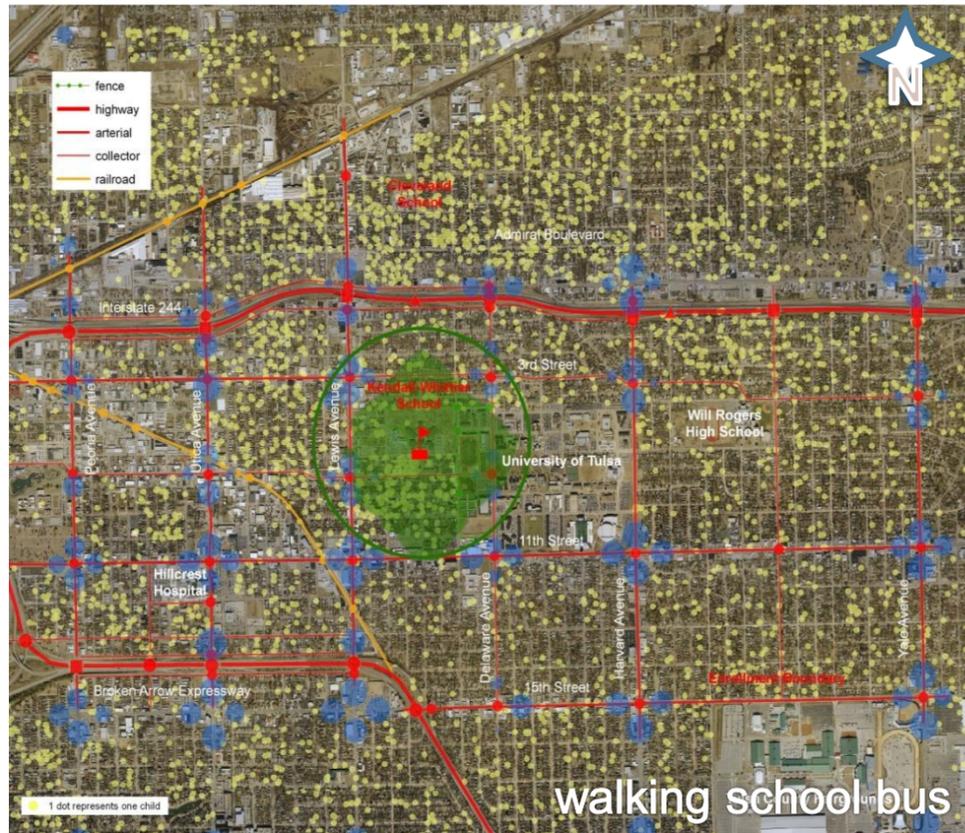
Lastly, a topographic map shows the changes in elevation. This area is relatively flat, gradually sloping to the west.

The next step is to calculate routes for students to walk or bike to and from school. These routes are designed to cross as few barriers as possible and to cross them at the least trafficked area.

# Kendall-Whittier ...on the go

## Walking & Biking





# Walking School Bus Concept

A walking school bus is a group of children walking to school under adult supervision. Part of the beauty of the walking school bus is its simplicity. It can be as informal as two families taking turns walking their children or as structured as a route with meeting points, a timetable and a regularly rotated schedule of trained volunteers. (SafeRoutesInfo.org)

Kendall-Whittier Elementary can take advantage of a walking school bus, encouraging 85 students in the target area to walk to school.

The green circle and diamond are a .38 mile radius from the school and by roadway network, respectively. The black box is the area of concentration for Kendall-Whittier Elementary. With the yellow lines representing the walking school bus route.

The main walking school bus route has stops along Birmingham Avenue and proceeds north directly into the school.

When designing the target area, we chose not to cross arterial streets and limited the route to one collector. We focused our attention to the south of the school because of the student density. A few extra blocks were added that were not in the diamond, but were within the circle. All other parameters were met except the distance of .38 miles by road.

Walkers will be released 5 minutes before students being picked up by car.

# Walking School Bus Schedule

<b>Morning South Birmingham</b>	<b>Afternoon South Birmingham</b>
7:15 – E 10 <sup>th</sup> Street	2:45 – Kendall-Whittier
7:18 – E 8 <sup>th</sup> Street	2:48 – E 5 <sup>th</sup> Place
7:21 – E 7 <sup>th</sup> Street	2:51 – E 6 <sup>th</sup> Street
7:24 – E 6 <sup>th</sup> Street	2:54 – E 7 <sup>th</sup> Street
7:27 – E 5 <sup>th</sup> Place	2:57 – E 8 <sup>th</sup> Street
7:30 – Kendall-Whittier	3:00 – E 10 <sup>th</sup> Street

Walking school bus stops will feature a walking school bus sign with the meeting time posted.

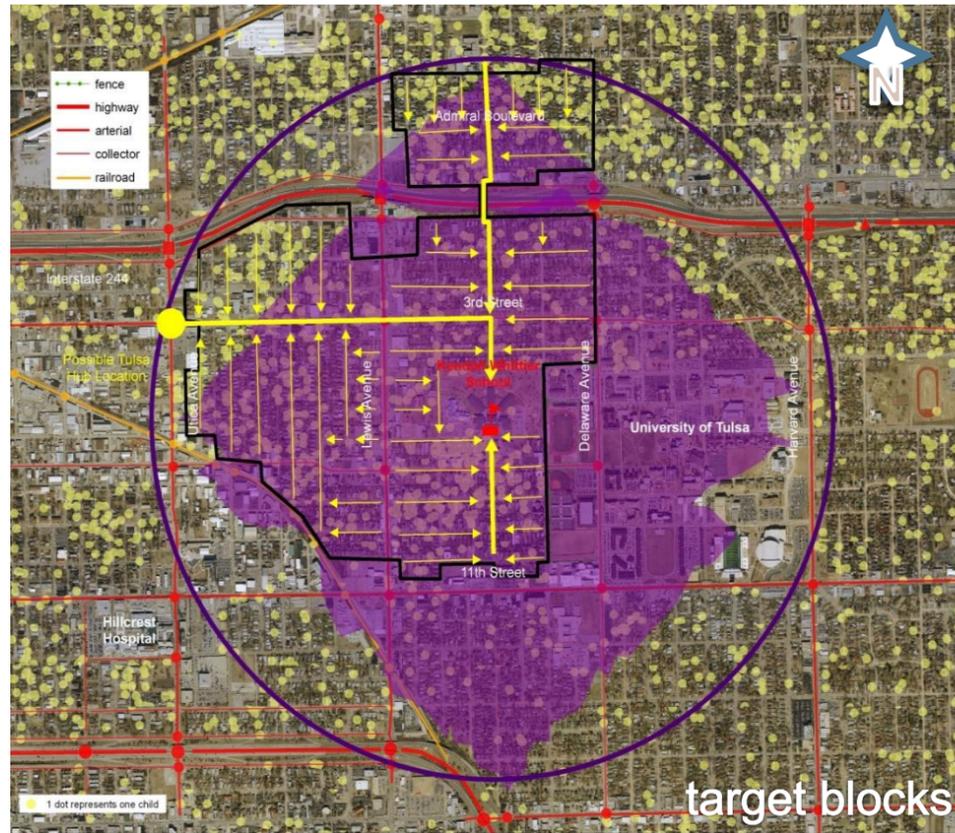
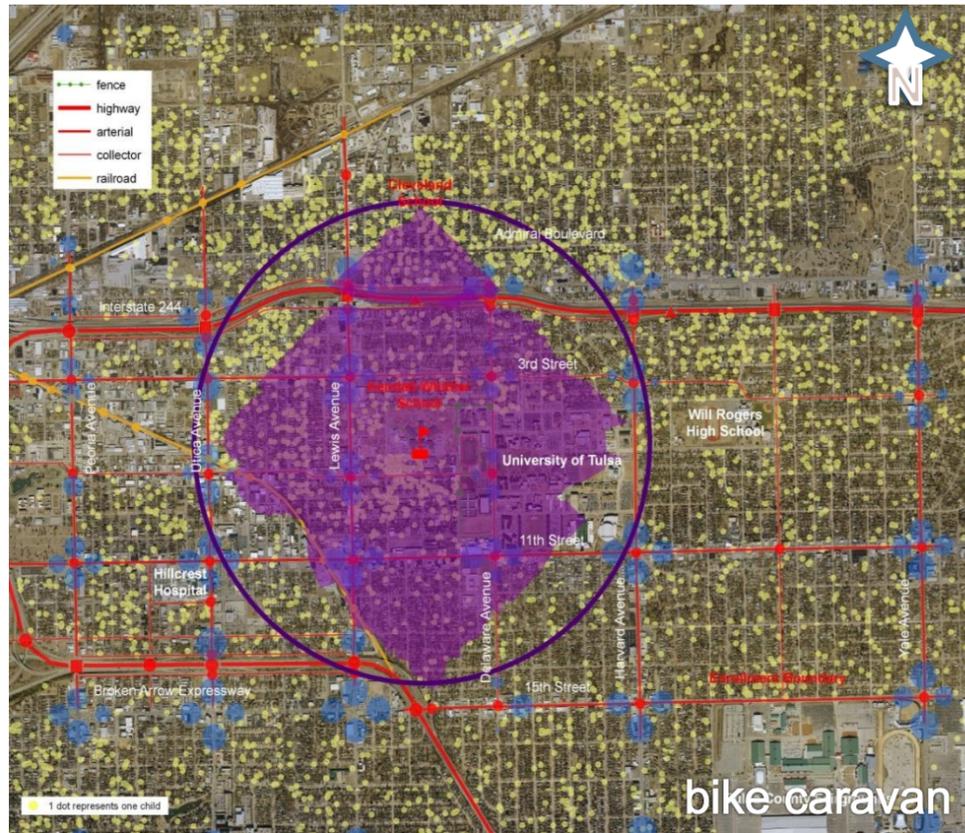


walking school bus

# Kendall-Whittier ...on the go

Walking & Biking





# Bike Caravan Concept

Similar to a walking school bus, a bike caravan is a group of bicyclists commuting to school under adult supervision. At Kendall-Whittier over 120 students can take advantage of a bike caravan.

Research shows that .8 miles is a feasible walking distance for 3-6th graders and takes 15 minutes. The purple circle and diamond are a .8 mile radius from the school and by roadway network, respectively. The black box outlines the blocks of concentration, with yellow lines representing the bike route. The main route begins at a possible HUB satellite location, marked with a large yellow dot, continues east down 3<sup>rd</sup> Street then turns south on Birmingham. The 3<sup>rd</sup> and Birmingham stop is a major stop because a potential future route from the north merges there.

The bike caravan route has been focused to benefit the denser population to the northwest and will also help to benefit families who may see a greater economic impact. When designing the target area, we allowed for one arterial to be crossed at a safe location. A Tulsa designated bikeway, 3<sup>rd</sup> Street, is a logical course for the caravan. Blocks were added to the northwest because they met all parameters except .8 miles by roadway. A section was added to the north where many students transfer into the school. A pedestrian bridge crosses I-244 and connects to Birmingham. Biking students would be released five minutes before students being picked up by a vehicle. This not only provides incentive for the students to walk or bike, but it also gives the volunteers the opportunity to group the children together before the mass dismissal.

# Bike Caravan Schedule

- Morning 3<sup>rd</sup> Street
- 7:15 – Tulsa HUB
- 7:16– Victor Ave
- 7:18 – Wheeling Ave
- 7:19 – Xanthus Ave
- 7:20 – Yorktown Ave
- 7:22– Zunis Ave
- 7:23 – Gillette Ave
- 7:26 – Atlanta Ave
- 7:28 – Birmingham Ave
- 7:30 – Kendall-Whittier Park

- Afternoon 3<sup>rd</sup> Street
- 2:45 – Kendall-Whittier Park
- 2:47 – Birmingham Ave
- 2:49 – Atlanta Ave
- 2:53 – Gillette Ave
- 2:54 – Zunis Ave
- 2:55 – Yorktown Ave
- 2:56 – Xanthus Ave
- 2:57 – Wheeling Ave
- 2:59 – Victor Ave
- 3:00 – Tulsa HUB

Walking school bus stops will feature a walking school bus sign with the meeting time posted.



# Kendall-Whittier ...on the go

Walking & Biking



# KWGO: Implementation



20-25% of morning rush hour traffic is due to parents driving their children to school.

- Safe Routes to School



KW/HUB bike club



KW/HUB bike club



KW/HUB bike club

## Tulsa HUB Parents

As part of the Tulsa Area Community School Initiative (TACSI) program, parents are encouraged to take part in the education process of their children. Parent involvement in formal education has been proven to improve a child's learning experience, encourage children to stay in school and to attain educational success.

Tulsa HUB has been working at Kendall-Whittier, running bike clubs for the last three years and has received a great reception and enthusiasm from the students. At times there has even been too many students for the volunteers. KWGO will encourage greater parent participation in programs. Parents are strongly encouraged to participate in the program with their students.

Before parents can chaperone a walking school bus, bike caravan, or bike club, parents will be required to pass background checks to ensure safe participation. Parents will also be HUB trained and educated on rules of the road, child/bike safety, and best practices. This is part of the process in educating the whole family on how they can lead healthy lives, and to teach that bicycle transportation works for children to get to and from school as well as for parents to get to and from work.

Parents not volunteering with HUB will be able to check on their student's safety online. HUB will be employing GPS technology to track students in real time and alert parents of safe arrivals via text messages.

Kendall-Whittier ...on the go  
Implementation





OU and HUB at KW parents night



KW/HUB bike club



KW/HUB bike club



KW/HUB bike club

## Tulsa HUB Education & Training

The Tulsa HUB program will provide bicycles to children who otherwise may not be able to participate in the program due to lack of funds for the purchase of a bicycle and helmet.

As long as the student is participating in the program, the bike would be theirs to use and store at their home. If a child outgrows a bike, they would have the opportunity to return the outgrown bike to the HUB in exchange for a larger bike.

Students and their parents will have to sign a contract with the HUB, securing the bike and equipment from resale or neglect. Should anything happen to the bicycle or safety gear, the parents will be responsible for replacing them. This contract is also part of the education process for the student, teaching the child responsibility. Once a student has shown their commitment to the program, having biked 100 days to school, they will actually own their bicycle.

Though HUB will be chaperoning the caravans, they will not act as escorts for children under 3<sup>rd</sup> grade. HUB encourages parents whose children would still like to participate in the active transportation to join the program with their student. The more parent involvement, the more of a community school Kendall-Whittier becomes.

Every officer in the Gilcrease Police Division should participate in a caravan once or twice over the next year. This will help them learn about and experience the bike program firsthand and educate them on bike safety.

Kendall-Whittier ...on the go  
Implementation



## Education & Training

Only once a student completes bike club, they will be invited to join the bike caravan.

## Capacity

The Tulsa HUB will run six-week bike clubs every semester which can support around 35 students depending on volunteer involvement. Depending on volunteer involvement, this number could be as high as 50.

## Incentives

Once enrolled in the bike caravan students will begin to earn points based off of participation. Points may be used to redeem rewards such as handle bar tassels or KWGO shirts.

## Phasing

Through this progression from bike club to bike caravan, the program will be able to grow slowly. The KWGO program is set up to get 5% of the school enrollment area each year over the next 3 years walking and biking to school. Since Tulsa HUB has been conducting bike clubs at Kendall-Whittier since 2008, there are already students who qualify to participate.

## Tracking

The biking caravan will include chaperones carrying GPS tracking technology. Parents will be able to follow the bike caravan online to ensure safety along the way. Parents can also enroll in an texting service where once their student arrives at the Kendall-Whittier, they will receive a message affirming their safe arrival.

## Parent Involvement

Parents are encouraged to join their student throughout the whole process. Parents can participate with their student while they volunteer with the HUB.



# Tulsa HUB

## Goals

To address parent and police concerns regarding safety, Tulsa HUB will be sponsoring the programs through volunteer efforts. The Tulsa HUB is a grassroots, non-profit organization that encourages the use of bikes as transportation. For the last three years, Tulsa HUB has been conducting bike clubs at Kendall-Whittier. They teach the children how to safely ride their bicycle, how to identify and mediate obstacles, and how to lead a healthy life.

Tulsa HUB will be with the students every step of the way. From educating in the bike clubs, to chaperoning the walking school buses and shepherding the bike caravans.

# Kendall-Whittier ...on the go

## Implementation





KW/HUB bike club



KW/HUB bike club



student earning certificate



KW/HUB bike club

## Tulsa HUB Education & Training

KWGO students will earn the bikes through participating in a specific number of rides to and from school and a six-week bike training course which will equip them with the skills they need to ride safely in a caravan. The Tulsa HUB will provide free bikes and helmets for them to use under a HUB/parent contract. This contract will convey that the bike is property of the HUB and that the parents are responsible for the bicycle and helmet if lost, stolen, or damaged.

The six-week course is designed for all adults and children. It is designed to engage advanced users and novices alike.

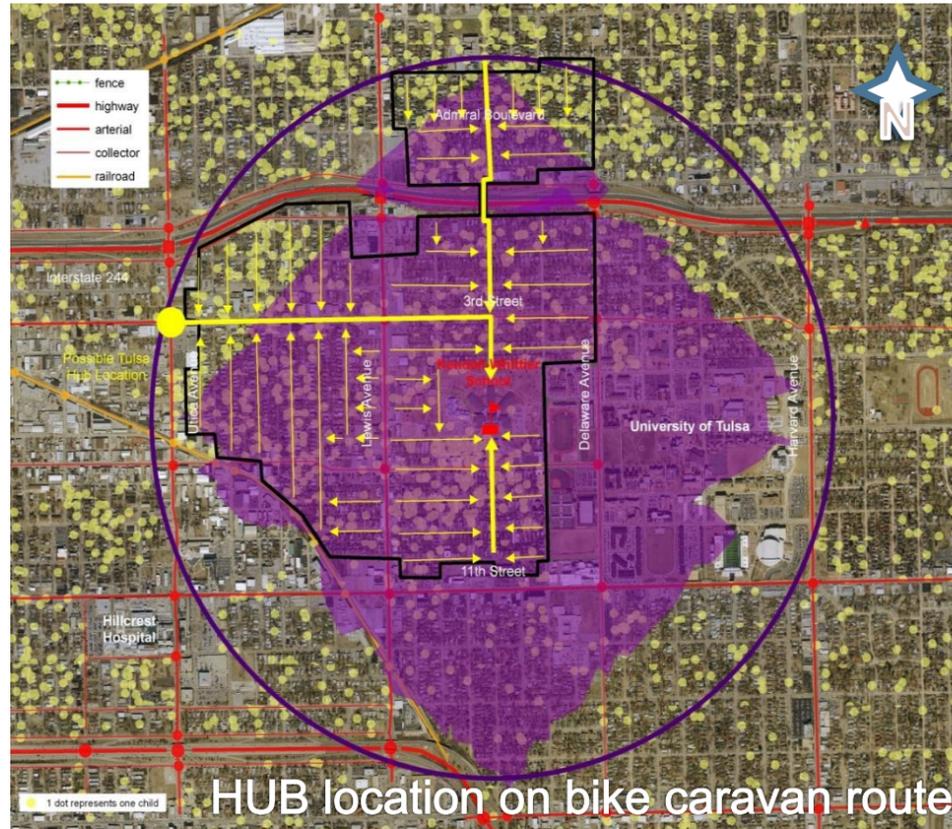
Starting with proper bike and helmet fit, The Hub's bicycling education would also include bike parts and maintenance, fitness, and nutrition. They teach how to prepare for a ride, pre-ride safety checks, dressing appropriately for various weather, and route planning. The HUB covers on the road education like traffic laws, safety, and how to ride in a group setting. See Appendix for more information.



potential HUB location



**TULSA HUB**



HUB location on bike caravan route

## Tulsa HUB Satellite Location

The Tulsa Hub has been looking for a new location for several months now. They need ample bike storage, a shop for their mechanics, as well as a classroom space, and a resale shop open to the public.

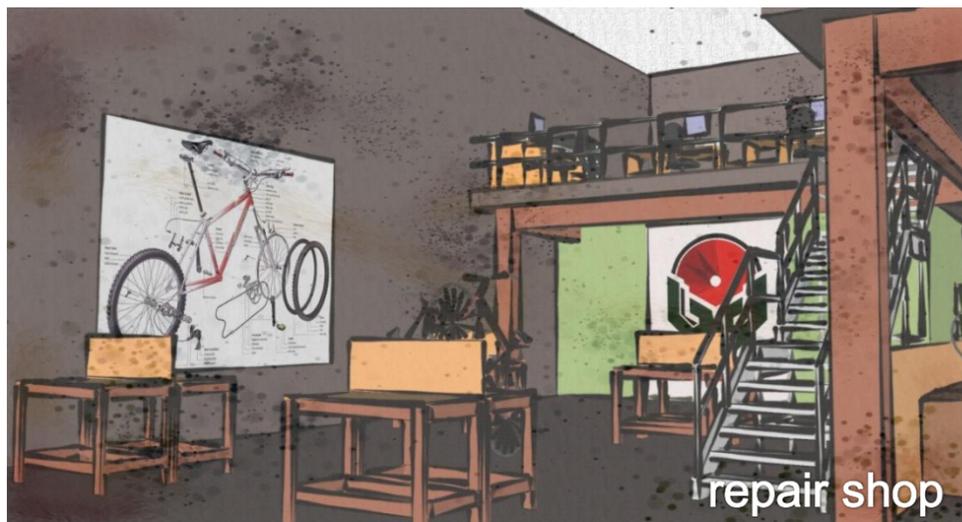
The ideal location is marked on the bike caravan map with a large yellow dot at Utica Avenue and 3<sup>rd</sup> Street. This location was chosen because it is on the 3<sup>rd</sup> Street, one of Tulsa's few designated bike routes, and is .8 miles from the school, the termination point for the bike caravan. Other nearby sites would be acceptable.

This space can also be used in the mornings where students can be dropped off, so they can ride in the bike caravan. Students who are dropped off will be able to store their bike at the HUB. Volunteers will meet here in the morning as well.

After school dismissal, the bike club can meet here as the final stop on the caravan. Students will participate in shop activities, learning how to maintain their bikes and the fundamentals of bike mechanics.

A large parking lot adjacent to the building will serve as a training space where students can learn to ride and test repaired bicycles.

The HUB prefers an open feel with sustainable features and a utilitarian design. The perfect design layout would provide ample space to store and move around a large number of bicycles.



repair shop



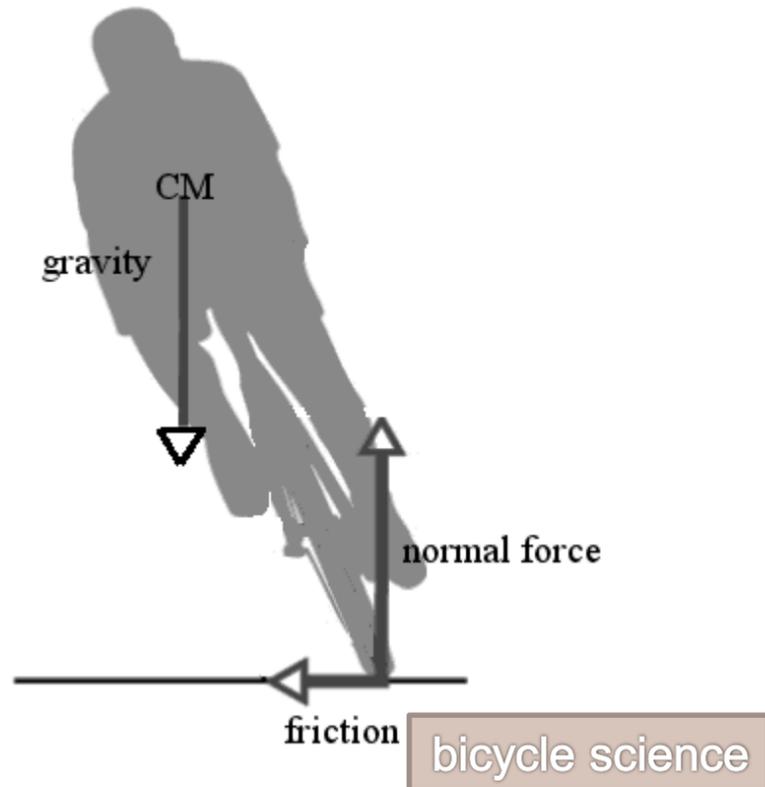
bike shop

# Kendall-Whittier ...on the go

Implementation

Space program in appendix page 46.





# Curriculum

## Kendall-Whittier Elementary

As part of the active transportation program, bicycle education will be incorporated into the academic curriculum for the students. Kendall-Whittier will adopt a school wide week of bike-themed learning. History class might teach the students about the invention of the bicycle and series of innovations that has led to today's modern bicycle. Social Studies might teach the children about how bikes are used in other cultures. Advanced curriculum could also be provided to students. For example, Science class in first grade may learn the wheel and axle as a simple machine, and by sixth grade, the students might learn about the mechanics of gears and torque and the physics of biking.

Since stray dogs were a major concern of police and parents, dog safety and awareness should be covered in the school. The police K9 unit could hold demonstrations in school assemblies teaching students what to do if they encounter an aggressive dog. This type of skill is an invaluable life skill for elementary students to possess.



# Kendall-Whittier ...on the go

## Implementation





# Physical Improvements Kendall-Whittier Elementary

Kendall-Whittier will be installing additional bike racks to accommodate the potentially 100 bicycles arriving at the school within the next three years.

Bike lockers are the most secure and weatherproof form of bicycle storage. While these would be ideal, they are sizable and costly. Installing several new bike racks under an awning may be a more feasible solution. The school is approaching its 20<sup>th</sup> anniversary and will be able to make proposals to TPS for renovations. One request will be the erection of a simple roofing structure over the eastern walkway from the cafeteria to the parking lot. This will serve to protect the new bike racks and the teachers to monitor the dismissal in the afternoon who are stationed at the parking lot.

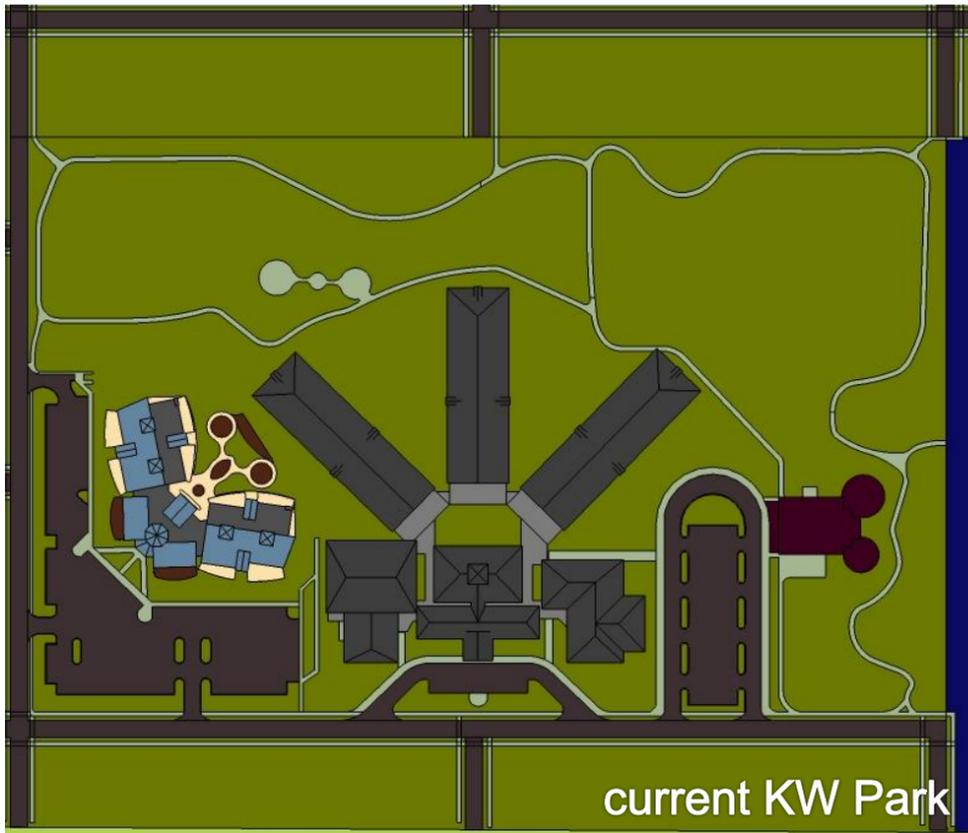
We propose a new arrival and dismissal process for the school. We believe this component is highly important and could potentially yield the most measurable results.

Designing a new arrival and dismissal system should include:

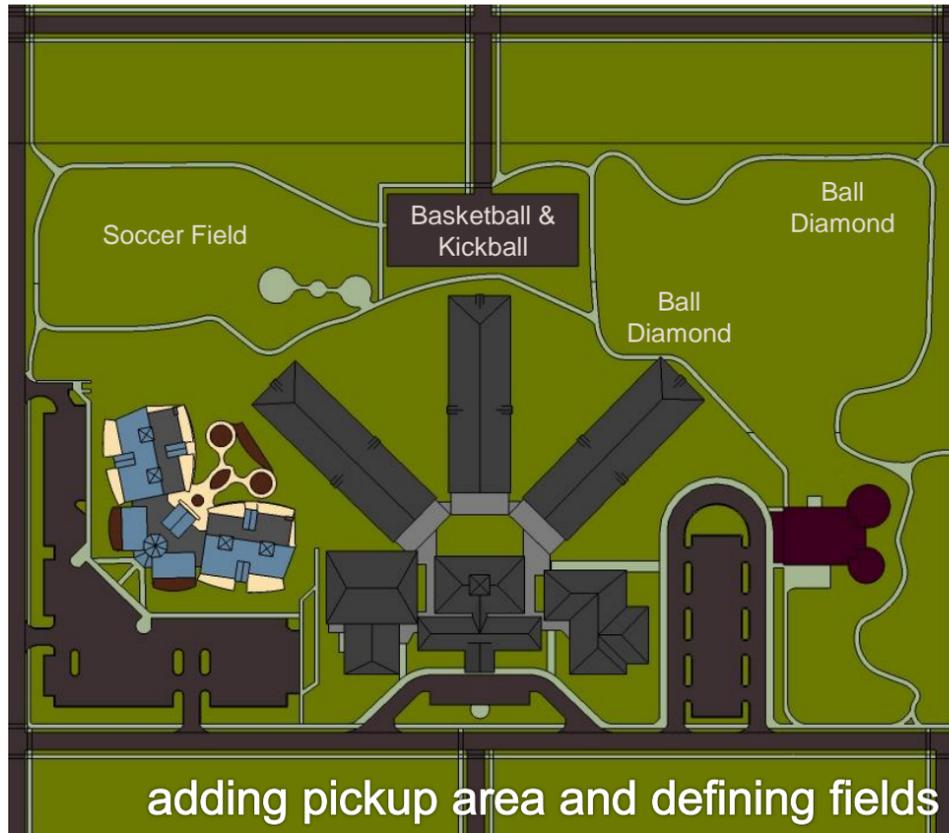
- Road signage and painting
- Creating a intuitive queue line for parents
- Creating a safe way for children to cross the street.
- Develop a queue line to best utilize the parking lot the way it was designed.

## Kendall-Whittier ...on the go Implementation





current KW Park



adding pickup area and defining fields



paved drop off for utility & ascetics



proposing purposed areas for park

## Physical Improvements Kendall-Whittier Park

Connectivity to the school- sidewalks on the north and west side will provide enhanced access to the school.

To help define Kendall-Whittier Park, defining the fields within the park, may encourage greater use. An option for better connectivity to the street network is a blacktop area on the north side of the school on Birmingham Avenue to increase functionality for arrival and dismissal on school days and serve as a play area during recess.

Another more drastic option is to extend 4<sup>th</sup> Place and make the park area feel safer by building a row of homes on the north side 4<sup>th</sup> Place. Creating an “Eyes on the Street” atmosphere as well as a Neighborhood Watch Association to engage the neighborhood and heighten awareness. Conversely, expanding the park by removing the homes along the north edge would put more eyes on the park and offer a larger park space for the neighborhood and the school.

A final intervention may be to create an entrance to tie the school closer to the neighborhood. Demolish run down housing off of Birmingham between 6<sup>th</sup> and 5<sup>th</sup> Place to create an entry way to the school unifies the area and gives the school a presence on 6<sup>th</sup> Street.

# Kendall-Whittier ...on the go

Implementation





empty church lot that is misused by parents



dilapidated apartment housing across from school



add and redo biking symbols, lanes, & signs



good example of labeled bike line on TU campus

## Physical Improvements Kendall-Whittier Neighborhood

With a proper arrival and dismissal process in place, we hope to eliminate parent parking occurring on private property. The top left photo shows an empty lot owned by a local church after a rainy week when parents parked here waiting for their kids at dismissal time in the afternoon.

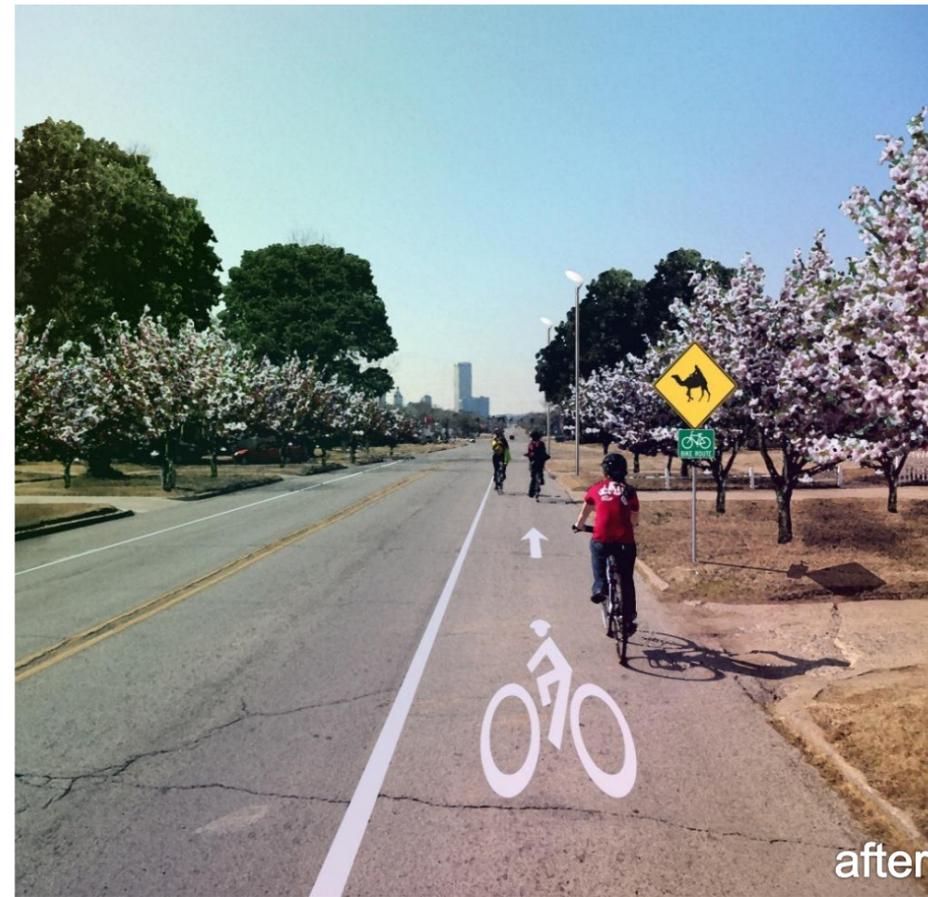
We propose that the City of Tulsa makes some traffic calming modifications to the area such as new street signage, new striped crosswalks, and labeled bike lanes. This will make the area safer and more functional for pedestrians and bicyclists.

By clearing out dilapidated buildings, an entrance or front lawn could be created as a welcome mat from the neighborhood to the school. We want to create a unified feeling between the neighborhood and its community school.

# Kendall-Whittier ...on the go

Implementation

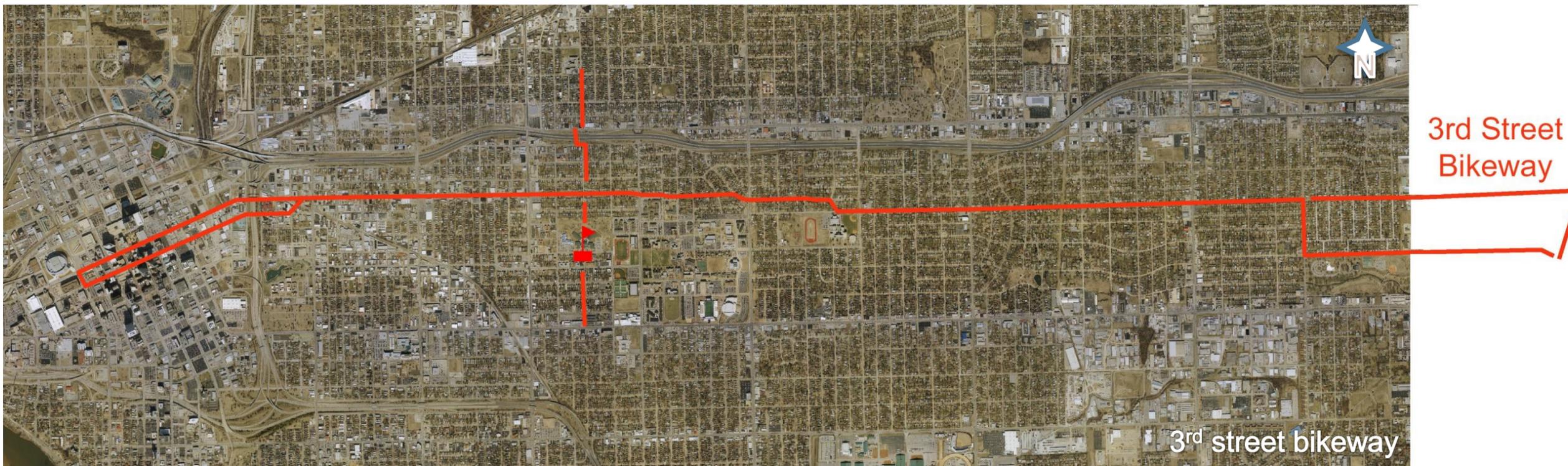




## Physical Improvements 3<sup>rd</sup> Street Bikeway

The 3<sup>rd</sup> Street Bikeway is an important factor in the KWGO plan. This bikeway connects downtown to the Mingo Creek Bikeway and will allow commuters to travel safely to and from work and improve access to recreational locations around the city.

The KWGO plan has redesigned The 3<sup>rd</sup> Street Bikeway to include designated bike lanes, bike caravan signs and proper street lighting to ensure bike and pedestrian safety.



Kendall-Whittier ...on the go  
Implementation





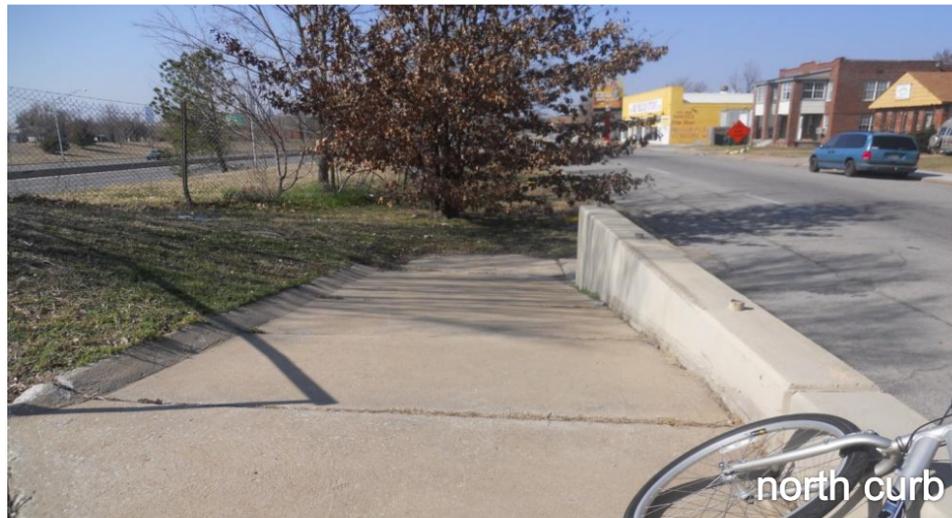
south of bridge



I-244 pedestrian bridge



south of bridge



north curb



litter next to bridge



north curb

# Physical Improvements Interstate 244 Pedestrian Bridge

In addition to the 3<sup>rd</sup> Street bike caravan route, we are proposing that a second bike caravan also be implemented coming from the north over the I-244 Pedestrian Bridge. The execution is based on the same principles; however, we will propose some modifications to the bridge itself.

Based on our observations, we feel that this area needs some improvements for bike accessibility. Although this bridge provides connectivity for those students and families of Kendall-Whittier living north of Interstate 244, there are several factors that need to be addressed. First, there is a raised curb with inadequate sidewalks to the south of the bridge. This makes it difficult for walkers and bikers and near impossible for meeting the American Disability Act design standards. The ramps on both sides are extremely steep, and the north side has a 4-5 inch drop off along with a 90 degree sidewalk turn with a steep incline. Under these current conditions, we will propose that cyclists walk their bicycles across the bridge. The Oklahoma Department of Transportation (ODOT) should make these improvements.

Other hazards include litter, such as broken bottles and glass fragments, overgrown plants along the chain-link fencing that encloses the bridge, and lack of visibility to the other end of the bridge. A protected crosswalk with signage and striping is also recommended for both sides of the bridge. These are all areas that need to be address with a supplementary action or physical modification.

# Kendall-Whittier ...on the go

Implementation



# KW/GO: Highlights

Active transportation is emissions-free, making it a powerful tool in the fight against climate change and air pollution.

- Safe Routes to School





fall 2011 dismissal observation



fall 2011 dismissal observation



spring 2011 dismissal observation

## The Research Observations & Surveys

- **Arrival Transaction Times: 4-7 minutes**  
mostly between 7:30-7:36am
- **Dismissal Transaction Times: 2.5 – 5.5 minutes**  
mostly between 2:45-3:00pm
- **Busing is not a significant factor, only 3% of students qualify and .5% utilize.**
- **Parking is not an issue because there are enough spaces for the faculty of Kendall-Whittier and EduCare.**
- **Parent concerns are mostly traffic and weather related when questioned about active transportation. Fifty seven percent of parents surveyed felt that it is not safe for their child to walk or bike.**
- **Neither parents or police were overtly concerned about crime or abductions (15% by parent survey), a factor that the school believed was greater than traffic (54% by parent survey).**
- **About half of the parents replied that their child would be interested in a bike program and they would be interested in helping.**
- **Police concerns were mostly traffic and stray dog related.**

# Kendall-Whittier ...on the go

Highlights





KW/HUB bike club



morning arrival



afternoon dismissal

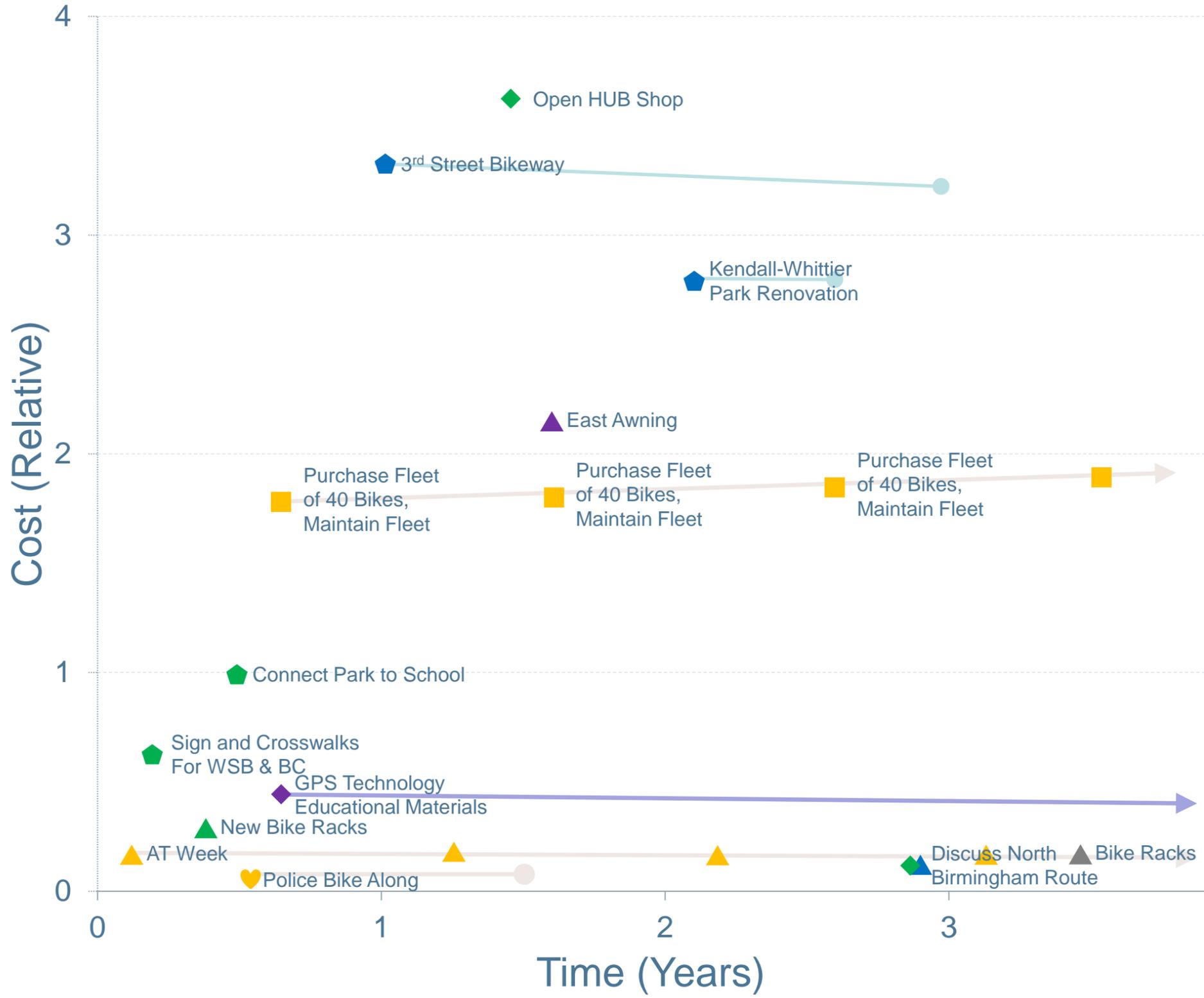
## The Plan Design Solutions

- Over the next three years, we want to encourage 15 % of students to walk or bike to school.
  - 5% each year of student population
  - 85 total walking, about 30 per year
  - 120 total biking, about 40 per year
- Students participating in the bike caravan are sufficiently trained by the HUB through the afterschool Bike Club program
  - Bikes are provided by the Tulsa HUB at no cost to students
  - Encourage parent participation in the program
- Departments in school help to promote bike education
  - Science class teaches bike physics
  - History class teaches bike history
- Establish a program that has “Active Transportation Days” similar to snow days, where television/radio news will broadcast the ATD information
- Promote the 3<sup>rd</sup> Street bikeway
  - Install new bike caravan signs
  - Repave roadway where necessary
  - Paint bike lanes on roadway in commercial areas
- Encourage parent involvement in the program as well as the active transportation process, supporting the concept of Community Schoolhouses

# Kendall-Whittier ...on the go

Highlights





## The Design Timeline

This timeline shows the progress in the KWGO plan over the next three years.

The vertical axis shows the estimated cost of the project. Color represents the importance to the KWGO proposal.

Some of the items are reoccurring. Every year the HUB will have to purchase a new fleet of 30 bikes, while maintaining their inventory fleet.

High  
Medium  
Low

# Kendall-Whittier ...on the go

Highlights



# KW/GO: Appendix

Adolescents who bike are 48 percent less likely to be overweight as adults.

- Safe Routes to School



## PARENT SURVEY FOR TULSA HUB

Dear Parent or Guardian,

This is a voluntary survey, which will provide important information in developing a safe bike route from your neighborhood to the school. Tulsa HUB would like to build an active transportation system (walking, biking, etc) for children. Please take a few minutes to complete this survey (only one child per form).

- Name of school: **Kendall-Whittier Elementary**
- What is the closest intersection to your home? \_\_\_\_\_
- What is the approximate distance from your home to the school?  
(Circle the best choice)
 

¼ Mile or less	½ - 1 Mile	Over 2 Miles
¼ - ½ Mile	1 - 2 Miles	I do not know
- How long do you think it takes to walk to the school? (Circle the best choice)
 

5 minutes	15 minutes	25+ minutes
10 minutes	20 minutes	I do not know
- About your child:
  - Boy / Girl / Do not want to share
  - Grade: \_\_\_\_\_
  - Age: \_\_\_\_\_
- Do you feel your child is safe biking in your neighborhood?  
(Circle the best choice)
 

Very Safe	Safe	Neutral	Not safe	Dangerous
-----------	------	---------	----------	-----------
- Which of the following exists that prevents you from feeling safe in your neighborhood?  
(Circle all that apply)
 

Gangs	Burned out lights	Bad sidewalks
Traffic	Roads	No road signs
Bullies	Dogs	None of the above
Other _____		
- Which of the following inconveniences might prevent your family or child from walking/biking in your neighborhood? (Circle all that apply)
 

Weather	Lack of cross-walk guards
Too far to walk	Traffic
Convenience to drive	Child irresponsible
None of the above	
Other _____	

Revised: 9/14/11

- Approximately, how many other Kendall-Whittier families live in your neighborhood? (Circle the best choice)
 

0	1	2	3	4+
---	---	---	---	----
- 9a. What is the distance from your home to the closest student? (Circle the best choice)
 

1 Block	3 Blocks	¼ Mile - ½ Mile
2 Blocks	4 Blocks	More than ½ Mile
10. Would you feel comfortable allowing your child to get to school on his/her own?  
(Circle the best choice)
 

Yes	No	Maybe
-----	----	-------
11. Do you think your child would be interested in an after school bike program? (Circle the best choice)
 

Yes	No	Maybe
-----	----	-------
12. If there was an after school bike program at your child's school, would you be interested in helping? (Circle the best choice)
 

Yes	No	Maybe
-----	----	-------
13. Does your child know how to ride a bike? (Circle the best choice)
 

Yes	No	A little
-----	----	----------
14. How does your child **get to** school currently? (Circle all that apply)
 

School Bus	Rollerblades	Walking
Family Car	Carpool	Scooter
City transit	Bike	Other: _____
15. How does your child **leave** school currently? (Circle all that apply)
 

School Bus	Rollerblades	Walking
Family Car	Carpool	Scooter
City transit	Bike	Other: _____
16. Have you encountered problems when trying to get your child to school?  
(Circle the best choice)
 

Yes	No	Maybe
-----	----	-------

 If so, please describe a problem you've encountered.  
 \_\_\_\_\_  
 \_\_\_\_\_
17. What benefits do you see in your child biking to school?  
(Circle all that apply)
 

Exercise	Health	Commitment
Trust	Responsibility	Other: _____

Revised: 9/14/11

**Thank you for your time!!**

## TU Surveys Parent Surveys

University of Tulsa received 26 completed surveys from the parents. Thirty-Seven children were represented in the study; 30% boys, 27% girls and 42% not specified.

Surveys were also conducted in Spanish

# Kendall-Whittier ...on the go

Appendix



# Tulsa Hub Police Survey

This survey will provide important information in developing a safe bike route for children and their families in the Kendall-Whittier neighborhood. Tulsa HUB would like to build an active transportation system (walking, biking, etc.) for children. Please take a few minutes to complete this survey; your participation is voluntary.

1. In general, do you view biking as a feasible mode of transportation for Tulsans?

Yes No

2. In general, do you view biking as a feasible mode of transportation in the **Kendall-Whittier neighborhood**?

Yes No

3. Do you view biking as a feasible mode of transportation for **children** in Tulsa?

Yes No

4. Do you view biking as a feasible mode of transportation for **children** in the **Kendall-Whittier neighborhood**?

Yes No

5. How often do you see children walking to/from school?

Never Monthly Weekly Daily

6. Approximately how many children do you see walking to/from school?

0 1-5 6-10 10+

7. How often do you see children using other forms of active transportation (biking, rollerblading, scooter, skateboard) to/from school?

Never Monthly Weekly Daily

8. Approximately how many children do you see using other forms of active transportation to/from school?

0 1-5 6-10 10+

9. Where is it appropriate for children to ride their bikes?

Streets Sidewalks Both Neither

10. Are there any intersections or other specific locations in the Kendall-Whittier area where you feel it is dangerous or inappropriate for children to be riding bikes? If so, please explain.

---



---



---

11. Which of the following issues do you view as problems in the Kendall-Whittier neighborhood that would prevent children from biking to school? (Check all that apply)

- Bullying
- Gangs
- Neighborhood dogs
- Child predators
- Weather
- Distance to school
- Condition of roads/sidewalks/bike routes
- Speed of traffic along route
- Amount of traffic along route
- Adult supervision
- Crossing guards
- None
- Other (please list) \_\_\_\_\_

Thank you for your time!

## TU Surveys Police Surveys

Forty-seven officers completed the survey from the Gilcrease Division of the Tulsa Police Department, which includes the Kendall-Whittier school district.

Question 2, which asks, if they felt biking was a feasible mode of transportation in the Kendall-Whittier area, 75% replied Yes. Question 4 asked the same question in regards to children, on 40% said Yes.

In addition to the surveys, a TU student went on a ride-along with an officer of the Gilcrease Division and interviewed the officer during the ride. The officer stated that the area between 3<sup>rd</sup> Street and 11<sup>th</sup> Street, and Lewis and Columbia Avenues is especially dangerous. The officer also stated a large homeless population would be a large factor in the safety of young students walking home from school in the afternoon, noting that Lewis Avenue between 3<sup>rd</sup> Street and Admiral Boulevard is notorious for homeless people.

# Kendall-Whittier ...on the go

Appendix



## Introduction

Tulsa Hub started in 2008 with a vision to advance employment, equip individual mobility, cultivate wellness, and empower self-determination for Tulsa’s disadvantaged adults and youth who have the greatest need for access to vehicles. The Hub’s newest focus has been initiating a Youth Bike Club in the Kendall-Whittier neighborhood for students aged seven to eleven. The Bike Club is a partnership program with the Tulsa Area Community Schools Initiative (TACSI) providing children with bike safety education the opportunity to earn their own bike and helmet. Our goal was to assess the attitudes of parents and police toward creating safe bike/walk routes for students in the Kendall-Whittier district.

## Methodology

Our goal for this project was to work with the OU Urban Design Studio and to evaluate the perceptions of safety and accessibility for children biking and walking in the Kendall-Whittier district. We did so by collecting descriptions of the major intersections in the district, observing arrival and dismissal patterns at the school, conducting an informal interview with police during a “ride-along”, and developing parent and police surveys. We selected the following items for the parent survey: perceptions of safety in neighborhoods, distance from the school, inconveniences that discourage active forms of transportation, and descriptions of parents’ current transportation systems. In order to increase the reliability of our survey analysis, we mainly used questions with clear “yes” or “no” answers, but left one open-ended question to allow parents to fully voice their opinions. The parent survey was then translated into Spanish to engage the large Hispanic population in the Kendall-Whittier district. Police surveys asked officers about the feasibility of biking in Tulsa, about biking in the streets, about how many children they currently see using active transportation as a means of getting to/from school, and about possible obstacles that prevent children from biking to/from school. Analysis of the survey results will be presented in later sections.

## Results

### Parent Surveys

Twenty-six parent surveys were collected to better understand the needs of the neighborhood in an effort to develop a safe bike route for the students of Kendall-Whittier Elementary. Thirty-seven children were represented in the surveys, 30% of which were boys, 27% girls, and 43% not specified. Forty-six percent of these students are considered old enough to participate in the Tulsa HUB bike

club (3rd-6th grade). When asked if the parents believed it was safe for their child to bike in their own neighborhood, 0% responded very safe, 8% felt safe, 35% were neutral, 46% did not feel safe, and 11% responded dangerous. Parents were also asked what prevents them from feeling safe in their neighborhood; 54% selected traffic<sup>1</sup>, 42% dogs, 19% bad sidewalks, 15% bullies, 15% roads, 15% gangs, 12% burned out lights, and 8% indicated no reasons for feeling unsafe. Additional written-in responses included: being new to the area, nearby sex offenders, and presence of drugs. Other convenience issues also prevent children from walking or biking in their neighborhoods. Of the parents surveyed, 65% considered weather an inconvenience, 46% traffic, 23% distance, 19% lack of cross-walk guards, and 8% child’s irresponsibility while 15% acknowledged that it is simply more convenient to drive, and 4% selected no inconveniences. The surveys revealed that 81% of children arrive to school by car and 23% walk, while 77% leave school by car and 19% walk. For this question, parents were able to choose multiple responses because some students may walk on some days and arrive by car on others, for example. Only 27% of parents replied that they did encounter problems when trying to get their child(ren) to school, while 54% had no problems. Some parents added that the problems included traffic, weather, and roads.

When asked if parents felt comfortable allowing their child to get to school on his/her own, 8% said yes, 62% said no, 19% said maybe, and 11% did not provide an answer; not all of these parents, however, had children old enough to participate in the bike program. When asked if their child would be interested in an after school bike program, 42% of parents replied yes, 8% no, 35% maybe, and 15% did not respond. In addition, parents were asked if they would be interested in helping with such a program where 46% said yes, 15% no, 19% maybe, and 19% did not respond. It was reported that 50% of the students already know how to ride a bike while 19% do not know how, 19% have little experience, and 12% of the surveys were missing this information. The final question inquired about the benefits of their children biking to school; the most commonly chosen benefit was “exercise”, then “health”, then “commitment”, then “trust”, and finally the least frequently chosen response was “responsibility”.

### Police Surveys

Forty-seven police surveys were collected from the Gilcrease Division of the Tulsa Police Department, which includes the Kendall-Whittier school district. These surveys were used as a tool to better understand police officers’ perceptions regarding the feasibility of implementing a bike club

<sup>1</sup> Parents could choose as many responses as they deemed applicable; consequently, responses will not total 100%.

# TU Surveys Summary

## Tulsa Hub Evaluation: Potential Kendall-Whittier Bike Program

Dr. Lara Foley

Sarah Bryson  
 Maria Copp  
 Caitlin Dryke  
 Scott Gove  
 Claire Hale  
 Kasey Hughart  
 Becca Stangl  
 Joshua Cox-Steib  
 Nicole Zeringue

# Kendall-Whittier ...on the go

## Appendix



for the students at Kendall-Whittier Elementary School. Officers were asked if they viewed biking as a feasible mode of transportation for Tulsans in general, as well as in the Kendall-Whittier area in particular; for Tulsa in general, 75% said yes and 25% said no, and for the Kendall-Whittier area in particular, 70% said yes and 30% said no. Officers were asked the same questions, but in regards to children as opposed to adults; for the Tulsa area in general, 40% said yes and 60% said no, and for the Kendall-Whittier area in particular, 49% said yes and 51% said no.

Officers were asked where they feel it is appropriate for children to ride their bikes; 2% said on the streets only, 60% said on the sidewalks only, 32% said both, and 6% said neither. Officers were given a list of possible “barriers” that would prevent children from biking to or from school<sup>2</sup>; of these barriers, 57% said amount of traffic, 55% said condition of roads/sidewalks, 53% said dogs, 49% said speed of traffic, 45% said adult supervision, 32% said bullying, 32% said child predators, 30% said gangs, 28% said weather, 13% said crossing guards, and 11% said distance to school, and would all be factors that would make it dangerous or inappropriate for children to bike to or from school. Also, 9% of officers said that there were no barriers, and 24% of officers listed other additional barriers, such as: homeless/indigent/transient population, drunk people, drugs, prostitution, theft of bikes, no bike routes, need safety plan, and parents prefer to drive. Lastly, officers were asked to list any intersections that they felt were particularly dangerous or inappropriate for children to be riding their bikes: nine wrote “all”, seven listed Lewis Ave., five listed 3<sup>rd</sup> and Lewis, four listed Admiral and Lewis, three listed 3<sup>rd</sup> Street, two listed 6<sup>th</sup> and Lewis, two listed 11<sup>th</sup> Street, one listed 5<sup>th</sup> Street, one listed 6<sup>th</sup> Street, one listed Atlanta Ave., and one listed West of Lewis.

In addition to the forty-seven police surveys, one of the students went on a police ride-along with an officer in the Gilcrease Division, and interviewed the officer during the ride. The ride-along took place between 2:00-10:00 pm on a Friday. The officer told the student that on that very day, a burglary had taken place in the Kendall-Whittier area during school hours; also, during the ride-along, there was an attempted breaking and entering by an intoxicated male, a domestic disturbance at 10<sup>th</sup> and Atlanta, and a burglary at 6<sup>th</sup> and Atlanta. The officer said that the area between 3<sup>rd</sup> Street and 11<sup>th</sup> Street, and Lewis Avenue and Columbia Avenue is especially dangerous. The officer explained that one of her biggest concerns regarding children biking to and from school would be the large homeless population in the area; she said that Lewis Avenue, especially between 3<sup>rd</sup> Street and Admiral Boulevard, is notorious for homeless people, as is the northeast corner of Lewis Avenue and

<sup>2</sup> Police could choose as many responses as they deemed applicable; consequently, responses will not total 100%.

I-244. She told the student a story about an intoxicated woman at the bus stop at 3<sup>rd</sup> and Lewis who, when approached by an officer, proceeded to pull down her pants and urinate on the sidewalk in the middle of the afternoon.

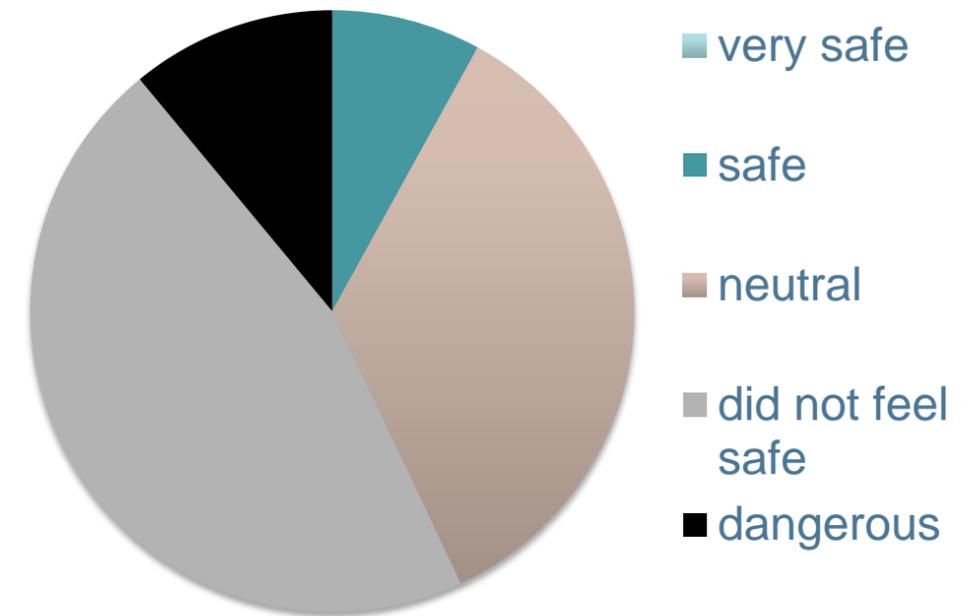
On a more positive note, the officer said that she was unaware of any issues with child predators in the Kendall-Whittier area; she said that the station occasionally receives calls about “creepy vans” driving around slowly, but that nothing significant has ever happened that she can recall. The officer said that the most common calls received are reports of suspected child abuse; she said that in the past month she had been to the school three times. The last time the officer went to the school in response to one of these calls, the child was taken away from his mother; she said that the mother was visibly under the influence of methamphetamines when she came to the school, that the house had no electricity or food, and that this was not the first time this child had been taken from his mother.

**Literature Review**

Based on a cursory review of literature, it would appear that while there are great positive effects derived from an active transportation program, implementing such a program faces significant challenges, primarily in the area of parental concern over student safety. It’s true that active transportation has a positive impact on students: one survey showed that implementing a walking school bus program led to increased walking even on non-bus/program days<sup>i</sup> while another showed that daily walking increased some measures of health (back endurance, hamstring flexibility, balance, and cardiovascular fitness)<sup>ii</sup>. However, parental beliefs about the safety of active transportation indicate an uphill battle. In one report, “the majority of parents incorrectly perceived the risk of pedestrian injury to be less than...bicycle-related injury”<sup>iii</sup>, while another pointed out that most parents view the risk of accident and other threats as outweighing the possible benefits of active transportation even for many walkers), the activity was prohibited by parents due to safety concerns.<sup>v</sup> An interesting side-note: other Oklahoma active transportation programs have approached the issue of safety on walking bus routes by providing “safe houses”, homes in which everyone has had a background check, and which function as places students can go if they perceive danger—if a dog starts to chase a child for example or if they encounter strangers.<sup>vi</sup> Clearly, there are creative ways to approach the issue of parental concern over child safety when using active transportation, and addressing these concerns is of high importance.

# TU Surveys Summary

Perceived Safety



# Kendall-Whittier ...on the go

## Appendix



## Conclusion

While we do not have enough data to constitute a representative sample of the target population, there are definitive patterns within the data that we do have. The majority of police respondents said that the sidewalk is the appropriate place for children to ride their bikes while many parent respondents listed sidewalks as a travel barrier for their children. Beyond this difficulty, the most apparent of these patterns is that while there seems to be a great target group at Kendall-Whittier with which to start a bike program, there is also great barrier of social perception – parents seem to be both for and against such a program. While 42% of the parents surveyed said that their child(ren) would be interested in an after school bike program, and only 2% said that they wouldn't be, the majority (62%) of parents surveyed also said that they wouldn't be comfortable with allowing their children to get to school on their own. There are a number of reasons given for not being comfortable with the children travelling on their own; for both parents and police surveyed traffic and dogs were among the most prominent of these reasons. A large number of parent respondents (46%) said that they would be interested in helping with the bike program. If these adults can be utilized and organized in such a way as to address the fear of children travelling on their own then implementing the bike program has the potential to work, but without adult supervision it seems unlikely to be accepted by the parents.

## Next Steps

Where to go with this project next depends on the parents of the children at Kendall-Whittier. If enough parents can be found who will truly give of their time and energy to participate by escorting the children before and after school then the next step should be a series of follow up surveys looking into the effects of the program. If, on the other hand, this adult supervision cannot be adequately provided then one of two things needs to happen – either the main problems preventing the parents from allowing their children to travel without adult supervision get removed, or the parents perception of these problems has to be changed. While it may not be possible to remove the physical presence of these problems a project comprised of awareness-raising and education centered on them would be a logical next step, and would serve to empower the Kendall-Whittier community. Such a project would likely include objective safety ratings of intersections and information such as actual recorded incidents in the target area involving dog attacks and other problems perceived by the parents.

- <sup>i</sup> Mendoza, Jason A., David D. Levinger, and Brian D. Johnson. 2009. "Pilot Evaluation of a Walking School Bus Program in a Low-Income, Urban Community". *BMC Public Health*, Vol. 9:122.
- <sup>ii</sup> Monness, E. and A.N. Sjölie. 2009. "An Alternative Design for Small-Scale School Health Experiments: Does Daily Walking Produce Benefits in Physical Performance of School Children". *Child Care Health Dev.* Vol. 35 (6): 858-67.
- <sup>iii</sup> Rivara, Frederick P., Abraham B. Bergman, and Christina Drake. 1989. "Parental Attitudes and Practices Toward Children as Pedestrians". *Pediatrics*. Vol. 84 (6): 1017-1021.
- <sup>iv</sup> Kearns, Robin A., Damian C. A. Collins and Patricia M. Newbolt. 2003. "The Walking School Bus: Extending Children's Geographies?". *Area*. Vol. 35(3): 285-292.
- <sup>v</sup> Ibid.,
- <sup>vi</sup> "Lawton, Oklahoma: Walking school buses build community" from [www.saferoutesinfo.org](http://www.saferoutesinfo.org)

# TU Surveys Summary

# Kendall-Whittier ...on the go

## Appendix





# HUB

## Satellite Location & Curriculum

The Tulsa HUB curriculum is available upon request. Please contact the HUB at [TulsaHUB.org](http://TulsaHUB.org) or [TulsaHUB@live.com](mailto:TulsaHUB@live.com).

### Forecasted Hours of Operation

Youth Program: M-F 6am-9am; 2pm-5:30pm  
 Adult Program: Tues./Thurs. 5pm-9pm; Sat. 8am-5pm  
 Office hours: Tues./Thurs. 9am-7pm

<b>Interior:</b>		<b>Parking Lot:</b>			
Bench space	360 sq ft	Bike riding training area	1600 sq ft		
Parts wash/ sink	50 sq ft	Ten-car minimum for parking spaces	3500 sq ft		
Metal Fabrication	150 sq ft	Pick-up & drop off zone	2000 sq ft		
Restrooms	300 sq ft	Long-Term Storage:			
Meeting room - accommodates 20 people	300 sq ft	100 long-term bikes	500 sq ft		
Office	250 sq ft	70-90 youth fleet bikes	400 sq ft		
Ten projects-in-progress (PIP's)	100 sq ft				
Office-isolation area	25 sq ft			<b>Total:</b>	<b>Interior</b>
Parts Storage	75 sq ft				<b>Exterior</b>
Storefront	400 sq ft				<b>Storage</b>
					<b>2010 sq ft</b>
					<b>7600 sqft</b>
					<b>900 sq ft</b>

# Kendall-Whittier ...on the go

Appendix





**BEFORE**  
TRAFFIC BACKED UP ON THE A ONE WAY STREET SOUTH OF THE SCHOOL.



**AFTER**  
BIKE CLUB STUDENTS COMMUTE TO SCHOOL UNDER HUB SUPERVISION.

# KENDALL-WHITTIER ...ON THE GO

A VISUALIZATION OF AN ACTIVE TRANSPORTATION PROGRAM FOR KENDALL-WHITTIER ELEMENTARY SCHOOL, ENCOURAGING 15% OF THE STUDENT POPULATION TO WALK OR BIKE TO SCHOOL.

This project explores the feasibility of an active, sustainable transportation program for a prototype primary school, Kendall-Whittier Elementary in Tulsa, OK. Founded on census data and Safe Routes to School guidelines, this program seeks to promote physical activity, including walking and biking to and from school. Uncovering obstacles, myths, and perceptions associated with sustainable transportation are main objectives. Target goals on which to measure results, outcomes, and benefits to the student population are used to quantify the success of the program. The study provides a usable format that is replicable in other primary schools across the country to promote a healthier youth and a cleaner environment.

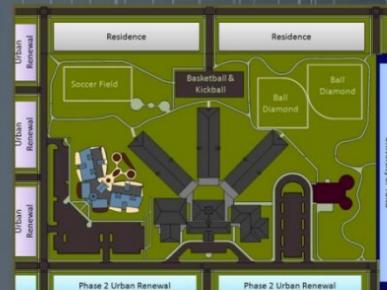
Kendall-Whittier is a large, K-6<sup>th</sup> grade elementary school with 1 200 students. It was designed as a neighborhood school to promote education using community school principles. Through parent and Tulsa Hub volunteers, active transportation will serve as a catalyst for neighborhood development.

Tulsa Area Community Schools Initiative is a project partner who builds stronger families and healthier communities through neighborhood school engagement.

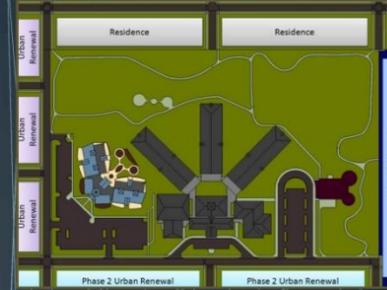
Our studies show that the Kendall-Whittier area has excellent street connectivity and is an outstanding candidate for such a program.



KENDALL-WHITTIER SITS IN THE MIDDLE OF A RESIDENTIAL NEIGHBORHOOD WITH A 7 ACRE PARK TO THE NORTH AND EAST, A PRESCHOOL ON THE WEST AND THE UNIVERSITY OF TULSA AS THE EAST BOUNDARY.



WITH SOME SMALL MODIFICATIONS TO THE PARK, A NEW BLACKTOP AREA WOULD ALLOW FOR AN ADDITIONAL LOOP DURING HIGH TRAFFIC TIMES AS WELL AS A RECESS PLAY SPACE.



THE CURRENT DESIGN OF THE SCHOOL AND PARK ONLY ALLOWS FOR PARENTS AND STUDENTS TO ENTER THROUGH THE SOUTH SIDE OF THE BUILDING ON A ONE WAY STREET.



BY REESTABLISHING THE CITY GRID, PARENTS CAN UTILIZE MORE ENTRANCES TO THE BUILDING FOR PICK-UP AND DROP-OFF, MAKING THE PROCESS MORE EFFICIENT.

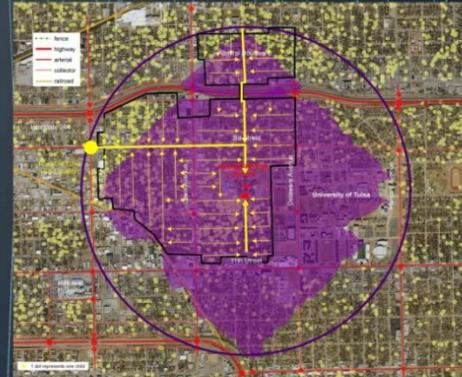


## WALKING SCHOOL BUS

A WALKING SCHOOL BUS IS A GROUP OF CHILDREN WALKING TO SCHOOL UNDER ADULT SUPERVISION. PART OF THE BEAUTY OF THE WALKING SCHOOL BUS IS THE SIMPLICITY. IT CAN BE AS INFORMAL AS TWO FAMILIES TAKING TURNS WALKING THEIR CHILDREN OR AS STRUCTURED AS A ROUTE WITH MEETING POINTS, A TIMETABLE AND A REGULARLY ROTATED SCHEDULE OF TRAINED VOLUNTEERS. KENDALL-WHITTIER ELEMENTARY CAN TAKE ADVANTAGE OF A WALKING SCHOOL BUS, ENCOURAGING 85 STUDENTS IN THE TARGET AREA TO WALK TO SCHOOL. RESEARCH SHOWS THAT .38 MILES HAS BEEN DETERMINED TO BE A FEASIBLE WALKING DISTANCE FOR 3-6<sup>TH</sup> GRADERS. THE GREEN CIRCLE AND DIAMOND ARE A .38 MILE RADIUS FROM THE SCHOOL AND BY ROADWAY NETWORK, RESPECTIVELY. THE BLACK BOX IS THE AREA OF CONCENTRATION FOR KENDALL-WHITTIER ELEMENTARY. WITH THE ORANGE LINES REPRESENTING THE SCHOOL BUS ROUTE.

## BIKE CARAVAN

SIMILAR TO A WALKING SCHOOL BUS, A BIKE CARAVAN IS A GROUP OF BICYCLISTS COMMUTING TO SCHOOL UNDER ADULT SUPERVISION. PARTNERING WITH THE TULSA HUB, A LOCAL NON-PROFIT BIKE PROGRAM, WE CAN PROVIDE BICYCLES AND HELMETS FOR THE STUDENTS AND A SIX-WEEK COURSE ON RIDING SAFETY. AT KENDALL-WHITTIER OVER 120 STUDENTS CAN TAKE ADVANTAGE OF A BIKE CARAVAN, ENCOURAGING KIDS TO BIKE TO SCHOOL. THE PURPLE CIRCLE AND DIAMOND ARE A .8 MILE RADIUS FROM THE SCHOOL. RESEARCH ALSO SHOWS THAT .8 MILES HAS BEEN DETERMINED TO BE A FEASIBLE BIKING DISTANCE FOR A 3-6<sup>TH</sup> GRADER. THE BLACK BOX IS THE AREA OF CONCENTRATION FOR KENDALL-WHITTIER ELEMENTARY. WITH THE YELLOW LINES ILLUSTRATING THE BIKE CARAVAN ROUTE.



# OUUDS Poster design

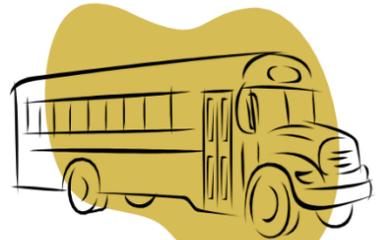
This Kendall-Whittier ...on the go poster won first prize at The American Association for the Advancement of Sciences, South West and Rocky Mountain division competition in the engineering and community science category.

# Kendall-Whittier ...on the go

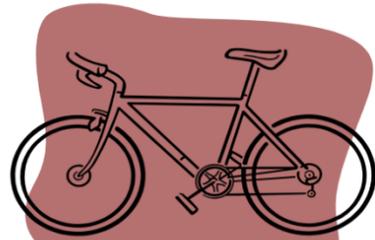
Appendix



How would you like to get to school?  
¿Cómo te gustaría llegar a la escuela?



bus autobús



bike bicicleta



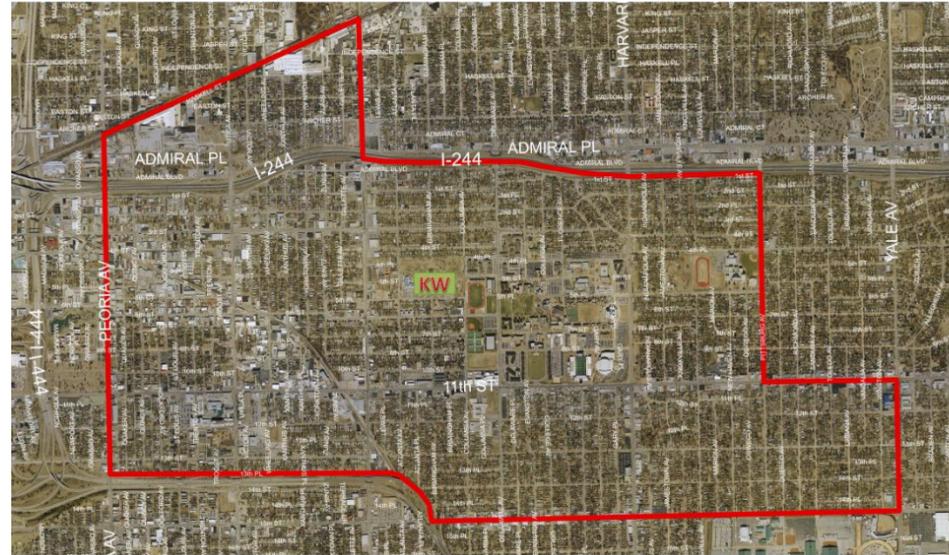
walk caminar



car auto



Where do you live?  
¿Dónde está tu casa?



# OUUDS Poster design

Student facilitators from the Institute of Quality Communities' Urban Design Studio, Kurt D'Amour and Rebecca Caldwell work with students and parents at Kendall-Whittier Elementary School on December 8, 2011. The Urban Design Studio is working with the Tulsa Area Community Schools Initiative and several other community partners to develop Kendall-Whittier on the GO, a program to encourage kids to walk and bike to school.



OU and HUB at KW parents night



OU and HUB at KW parents night

# Kendall-Whittier ...on the go

Appendix



The success of Safe Routes to school Programs is largely dependent on the engagement of parents. Please help us make this a success!

**Volunteer to Walk or Bike!**

- Sign up to:
- Lead a Walking School Bus in the MORNING
  - Lead a Walking School Bus in the AFTERNOON
  - Lead a Bike Caravan in the MORNING
  - Lead a Bike Caravan in the AFTERNOON

Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 E-mail \_\_\_\_\_  
 Phone \_\_\_\_\_

**Contribute to the Project!**

Make a tax-deductible contribution to Tulsa Hub

- Method of Payment
- Check
  - Cash
  - Visa
  - MasterCard
  - American Express

Credit Card # \_\_\_\_\_ Exp. date \_\_\_\_\_  
 Signature \_\_\_\_\_

You can also make a contribution online at [Razoo.com](http://Razoo.com)

Submit completed form to the following address:

Tulsa Hub  
 601 W 3rd St  
 Tulsa, OK 74127  
 Phone: 918-813-0028  
 E-mail: [tulshub@live.com](mailto:tulshub@live.com)



**HUB  
 Bike Club**

The HUB has designed and printed pamphlets that will be distributed to parents in the target areas to start to fill their spring 2012 bike club.

**Kendall Whittier on the GO!**

The Kendall-Whittier on the GO! (KWGO) project seeks to serve the Kendall-Whittier Elementary School community by providing an option that can alleviate some of its current problems:

- \* **Traffic Congestion**
- \* **Prolonged Drop-off & Pick-up Cycles**
- \* **Physical Activity**
- \* **Community Engagement**
- \* **Safer Streets**

And provide some valuable benefits:

**KWGO gives an alternative to parents' early morning traffic jam** because it provides an alternative mode of transportation! With the support of the Kendall-Whittier community, KWGO will provide a program through which students within a reasonable distance from school can walk in a "Walking School Bus" or bike in a "Bike Caravan" under the supervision of Tulsa Hub staff and volunteer adult chaperones.

**Background**

For 3 years a Tulsa non-profit, The Tulsa Hub, has conducted after-school Bike Club programs for Kendall-Whittier students. Participating students have been provided with the skills to use a bicycle for transportation, while receiving mentorship and the empowerment of transportation independence. KWGO is an extension of this program that will work within a national walking and biking to school program—the Safe Routes to School partnership. OU-Tulsa Urban Design Studio, TU Sociology Department and OSU Graduate College; Tulsa Hub, TACSI and Kendall-Whittier faculty and community members have collaborated to organize this project. The trust and engagement of parents will be vital to the project's success.

**Active Transportation**

Fifty years ago, over half of students in the U.S. were walking or biking to school, while less than 15% of students currently do so (Federal Highway Administration). The subject of active transportation (walking and cycling) has recently become increasingly relevant because of the wide range of benefits it offers a community. Children who participate in Safe Routes programs and therefore exercise regularly have been proven to enjoy many advantages over those who do not:

- \* **Improved Health Condition**
- \* **Improved Academic Performance**
- \* **Decreased Behavioral Problems**

Communities that allow for more walking and cycling tend to be more livable—the streets are safer because more neighbors know each other and more eyes are watching the streets, local businesses flourish because more citizens are shopping near their homes, and road maintenance is cheaper because less cars are on the road (Victoria Transportation Policy Institute).



**Bike Caravans**

Students interested in joining Bike Caravans must complete one of the following tasks:

- ♦ **Participate in an after-school Bike Club and receive loan of a Tulsa Hub bicycle and training;**
- Or
- ♦ **If the student has a bicycle, he or she must complete training from the Tulsa Hub**



**INTERESTED IN BIKE CARAVANS?!**  
 Contact Ren Barger of the Tulsa Hub at:  
[tulshub@live.com](mailto:tulshub@live.com)  
 918-813-0028

**Walking School Buses**

A Walking School Bus (WSB) is a group of students led by one or two adults that walk a specific route to school each day. Generally, the WSB will begin the walk along a street that leads directly to the school and students can join the bus when it passes their street.



**INTERESTED IN WALKING SCHOOL BUSES?!**  
 Contact Matt Flynn of the Tulsa Hub at:  
[mflynn84@gmail.com](mailto:mflynn84@gmail.com)  
 918-289-8550

**Track the Bike Caravans and Walking School Buses LIVE @**  
[www.MapMyFitness.com/KWGO](http://www.MapMyFitness.com/KWGO)

**Kendall-Whittier ...on the go**



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## References

# Kendall-Whittier ...on the go

## Appendix





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- 25 Tulsa HUB
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# Kendall-Whittier ...on the go

Appendix

