

Pedestrian Plan for Utica Avenue between 3rd and 11th Street



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Acknowledgements

The Utica Pedestrian Plan has been developed by Anna Grider and Heloisa Ceccato Mendes from the University of Oklahoma Urban Design Studio. It has been prepared with a group of residents, business-owners and property owners from the area. This committee was invaluable for providing us with a background of the area and their thoughts on the type of pedestrian improvements they would like to see. Many thanks to the following people who volunteered to be on the committee:

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Executive Summary

The Utica Pedestrian Plan has been developed by Anna Grider and Heloisa Ceccato Mendes from the University of Oklahoma Urban Design Studio. It has been prepared with a committee formed by a group of residents, business-owners and property owners from the area.

This plan has been prepared to describe and illustrate a comprehensive vision for the pedestrian using Utica Avenue between 3rd Street and 11th Street, in the heart of the City Tulsa. It includes an assessment of the current conditions in the area and the opportunities for improvement by those who live and work in this area. The plan is centered on the following four goals: promoting pedestrian safety; pedestrian access; encouraging pedestrian friendly streetscaping and compatible land uses; and outlining policies to ensure a pedestrian friendly environment can thrive in Tulsa. Under each of these goals a variety of physical and policy recommendations have been outlined.

“Streets that once served vehicles and people equitably are now designed for the sole purpose of moving vehicles through them as quickly as possible. They have become in effect, traffic sewers.” (DUANY, A. et al. 2000, p. 64)

“We shape our cities and then our cities shape us”
(DUANY, A. et al. 2000, p. 83)

1. Introduction and Goals

Walking is both a form of transportation and recreation; it is economical and broadly available to all, helping to create a healthy, equitable society. In recognition of this the pedestrian plan is an urban design document aimed at creating a comfortable, walkable arterial in the City of Tulsa and allowing for the convenient use of the existing public transit system.

The purpose of this plan is to highlight the changes that need to happen and provide some guidance on what these changes could look like. It begins with an outline of the character and existing pedestrian elements of this area, culminating with a series of recommendations for pedestrian improvements to the area. The plan is based on research of the existing conditions in the area and outreach to the steering committee. This provided an essential picture of the current circumstances and the prospects and limitations of the area. The plan is centered on the following four goals: promoting pedestrian safety; pedestrian access; encouraging pedestrian friendly streetscaping and compatible land uses; and outlining policies to ensure a pedestrian friendly environment can thrive in Tulsa. It is important to note that strategies for implementation are not within the scope of this document. However, if this plan were to be implemented it is hoped that it would help broadly to:

- reduce pollution and dependence on the automobile in this area;
- establish a walkable and attractive urban environment;
- raise property values and invigorate the economy of the area with new pedestrian-friendly developments;
- create a distinctive identity and sense of place;
- encourage healthy activity

Each member of the steering committee has received a copy of this document. It will be with their effort and enthusiasm that this plan will come to fruition.

2. Methodology and Community Outreach

The committee for this project was formed by contacting the presidents of both neighborhood associations. The presidents then recommended a small number of area business and property owners and residents. A number of the participants had experience in community development and citizen planning. This small group was assembled and for three months has worked collectively to develop this plan. In planning with the community this document is felt to reflect their knowledge of the area and to support their interests.

Two meetings were held with the group; the first on March 14th, 2007 and the second on April 11th, 2007. Both meetings were held at Murdoch Villa, an apartment complex for the disabled located to the east of Utica Avenue. The meetings ran for approximately an hour and a half and were used mainly for discussion of the area and review of potential recommendations.



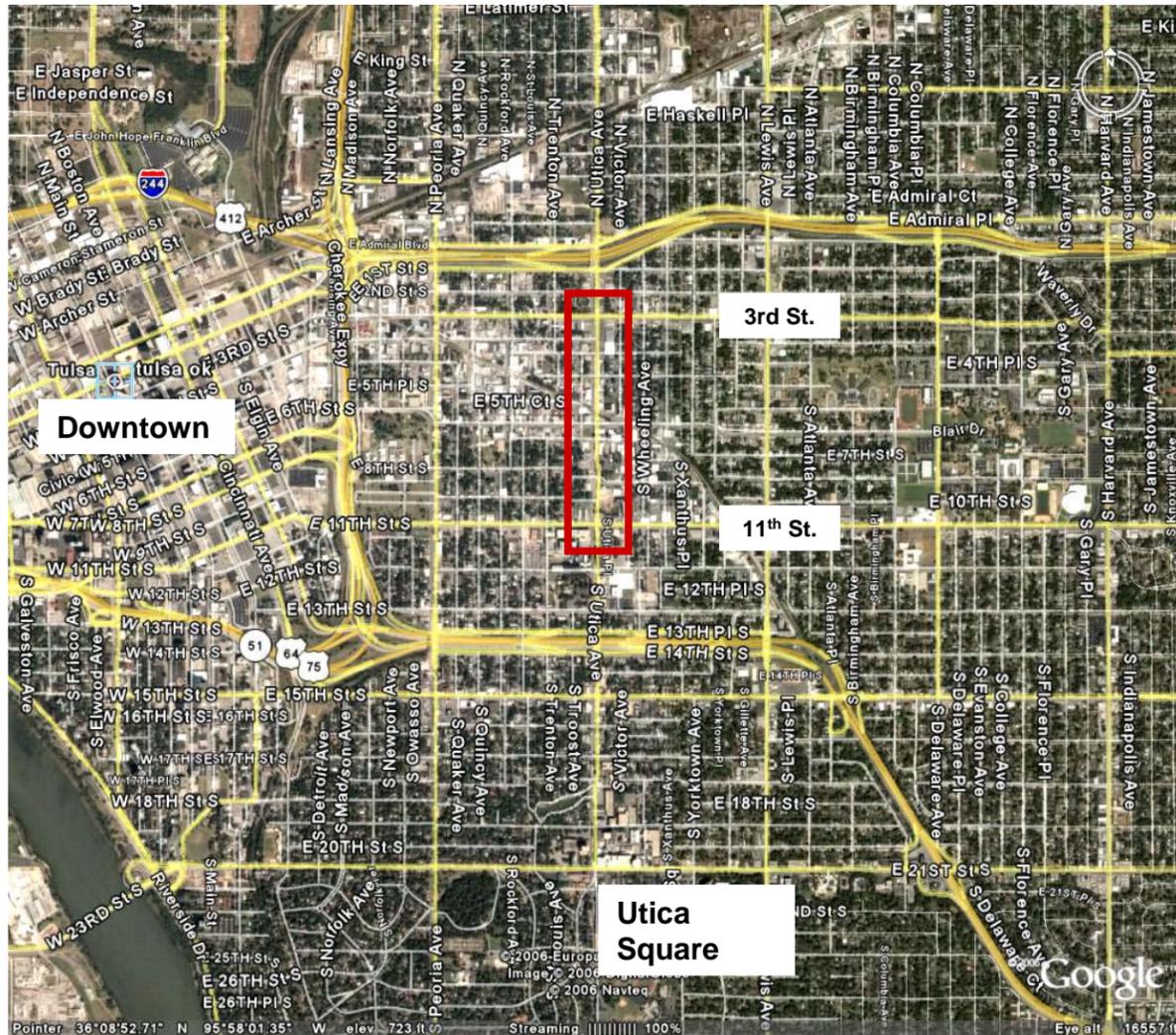
First Meeting: March 14th, 2007



Second Meeting: April 11th, 2007

3. Research

3.1. History and Relevant Plans



Location of the area.
Picture Source: Google Earth

 Area

This is one of the oldest areas in the City of Tulsa. From its establishment in the early 1900s to the 1950s most residents of the area had no need for a car. Within walking or transit distance of their home was all they needed: employment, goods, services and entertainment. As a result the blocks are short with regular crossings and the area remains well served by public transportation. The committee hopes to eventually see a return to this traditional neighborhood and the pedestrian plan is one aspect of this desire. The benefits, particularly in terms of cost, of implementing such a plan in this area should not be underestimated given that much of the required infrastructure is already in place despite its poor condition in certain sections.

There are a number of plans that influence this area. The following is a list of three of those that should be reviewed:

Comprehensive Plan/District 4 Plan

The Comprehensive Plan is the overall planning document for the City of Tulsa. It is broken down into Districts, and the study area is located in District 4. The plan for District 4 was adopted in 1980 and has subsequently been updated and amended through the years. Currently, Tulsa is going through the Comprehensive Plan Update process and thus there may be some significant changes to the existing document. However, the District 4 plan is the current plan that guides overall development in this area.

6th Street Infill Plan

Adopted by the Tulsa City Council in 2006 this is a comprehensive infill plan for an area that includes the whole western portion of the Utica study area. A plan developed together with the City of Tulsa and the neighborhood it outlines a vision for future development in the area. Many of the concepts and recommendations of the infill plan go hand in hand with the ideas and recommendations outlined in this pedestrian plan.

Kendall-Whittier Master Plan

Completed in 1991 this Master Plan was a joint effort between the City of Tulsa and Kendall-Whittier neighborhood to develop a neighborhood plan. Kendall-Whittier is the neighborhood to the east of Utica. For the plan the neighborhood was divided into sub districts and a series of eleven goals were outlined. A number of these goals have since been achieved. This Master Plan is currently undergoing a thorough update.

Census Tract 22

Per Capita Income (1999) - \$10,611
 Percentage of population below poverty level (1999) – 27%
 Occupancy Status: Total: 954
 Occupied: 812
 Vacant: 142
 Percentage Owner Occupied – 38%
 Percentage Renter Occupied – 61%

Total Population	2,122
White	1227
Black or African American	239
American Indian	250
Hispanic or Latino	402

Source: US. CENSUS BUREAU, 2000

Census Tract 23

Per Capita Income (1999) - \$15,432
 Percentage of population below poverty level (1999) – 37%
 Occupancy Status: Total: 725
 Occupied: 630
 Vacant: 95
 Percentage Owner Occupied – 17%
 Percentage Renter Occupied – 83%

Total Population	1,179
White	712
Black or African American	146
American Indian	117
Hispanic or Latino	402

Source: US. CENSUS BUREAU, 2000

3.2. Demographics

The study area is divided by the railroad tracks into two census tracts; Tract 22 and Tract 23. The following is summary data on the general demographics of these two tracts.

As this data shows this is a very diverse area of the City of Tulsa with a mix of White, Hispanic, Black and American Indian populations. Income levels of residents in this area are predominantly low to moderate compared to the City average which is \$21,534. Renters dominate the property market and a significant number of homes in the area are vacant. This data generally suggests a greater economic need to walk or use public transit comfortably.

3.3. Walking Rates and Vehicular Ownership

Figures on walking rates in the City of Tulsa do not exist. However, the data that is available suggest that the rate of walking in Tulsa is low. The US Census has data on the number of vehicles available at households and also data on methods of commuting to work.

VEHICLES AVAILABLE	Total housing units = 182,184
No vehicles available	13,016
1 vehicle available	67,222
2 vehicles available	60,330
3 or more vehicles available	19,754

Source: US. CENSUS BUREAU, 2005

This table shows that the vast majority of households have at least one vehicle available. Higher rates of vehicle ownership suggest a lower rate of walking and transit use. This is reinforced in the following table which shows that by far the majority of workers in the City of Tulsa commute alone in their own vehicles. 144,645 workers drove alone in a car truck or van compared to 3,440 who walked and 1,801 who used public transportation. These statistics show the great disparity in transportation usage in the City of Tulsa. It is hoped that with the promotion and implementation of plans like this one there will be a rise in walking rates and those using public transit.

COMMUTING TO WORK	Workers 16 years and over 175,483
Car, truck, or van -- drove alone	144,645
Car, truck, or van -- carpooled	16,104
Public transportation (excluding taxicab)	1,801
Walked	3,440
Other means	4,947
Worked at home	4,546

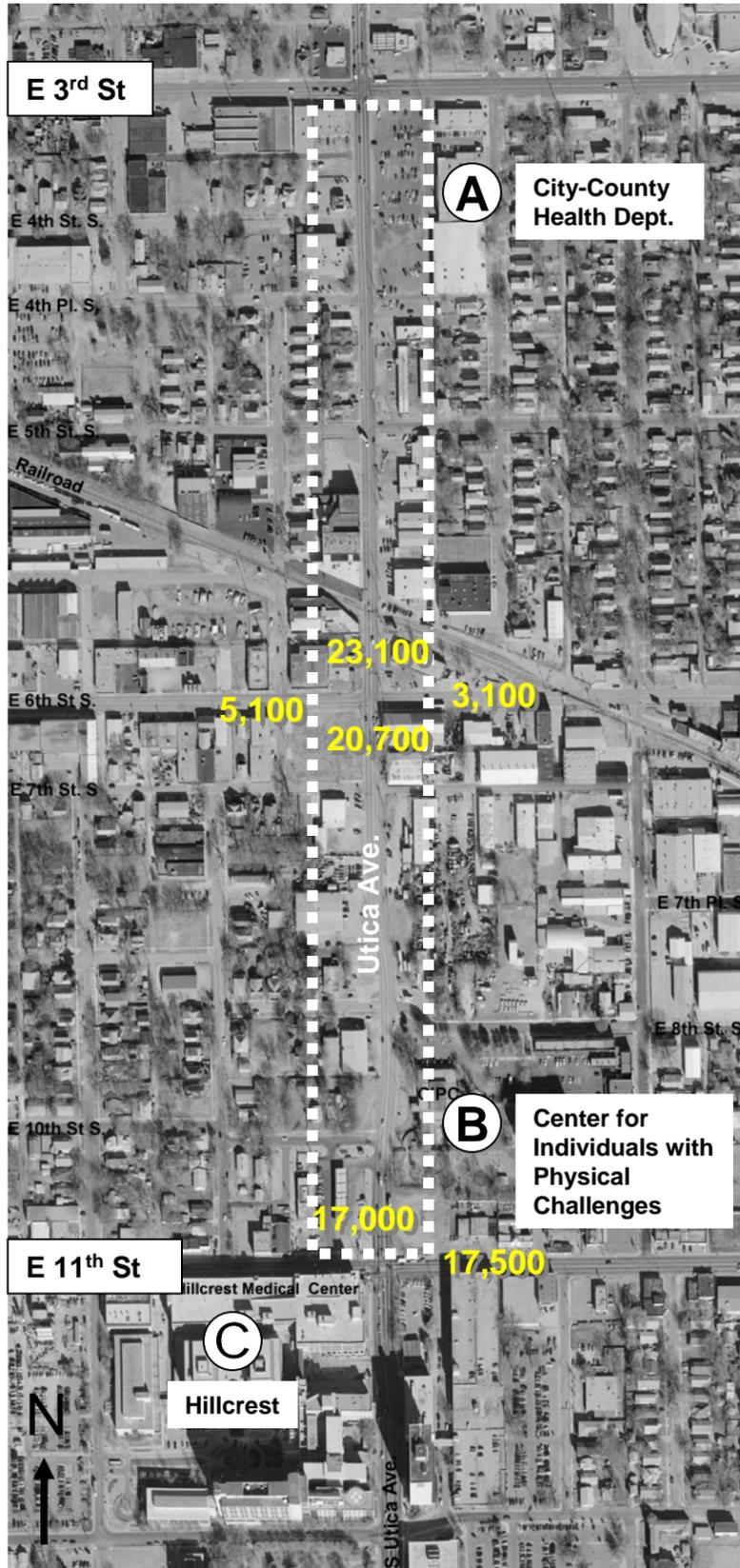
Source: US. CENSUS BUREAU, 2005

4. Results

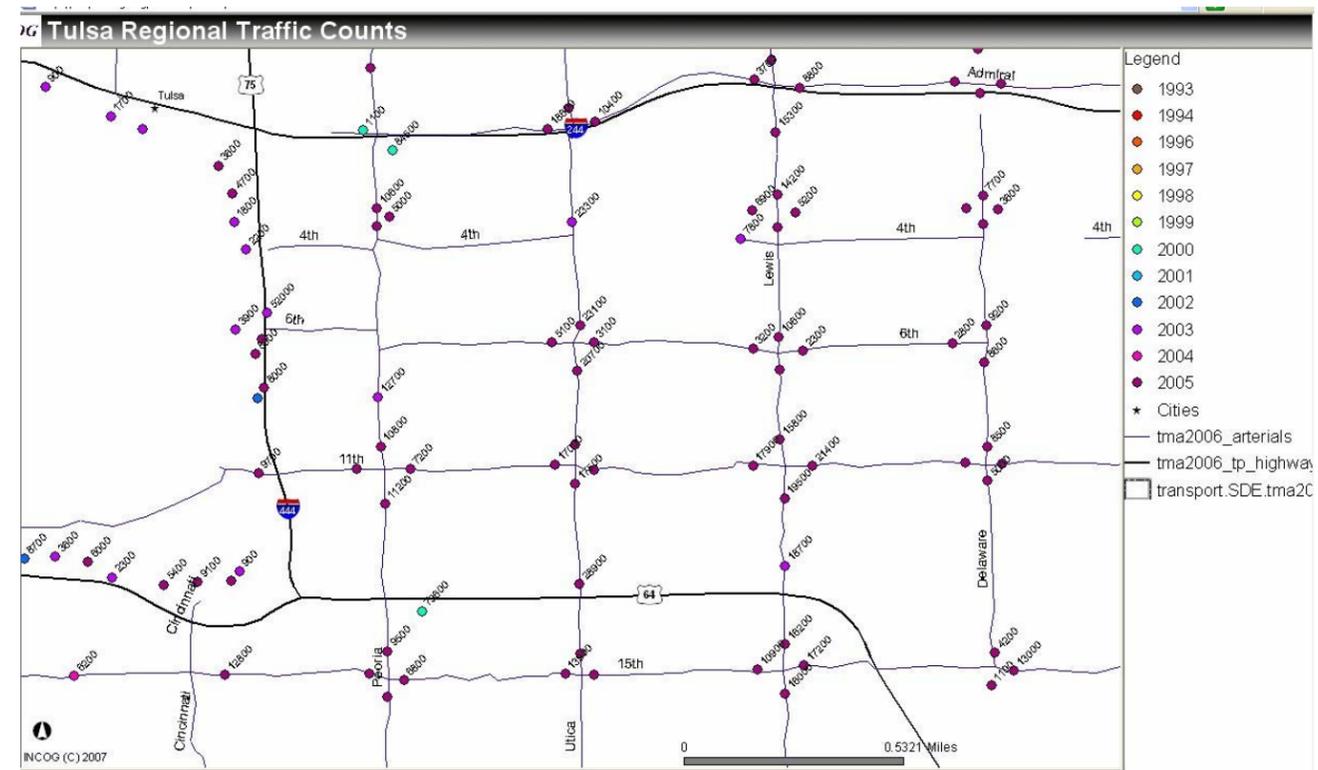
4.1. Existing Conditions – Overview

Utica Avenue is an arterial street that runs North-South across Tulsa. This particular stretch of Utica is four-lanes wide and very close to downtown. The high speed and volume of traffic along Utica is of great concern to those who live, work and walk in this area. As the traffic count data clearly shows, compared to other arterials in the area this stretch of Utica receives by far the largest amount of vehicular traffic (23,100 vehicles compared to 12,700 on Peoria and 10,800 on Lewis at similar points). Not only can the volume and speed make pedestrians feel unsafe but it also makes crossing the street very difficult.

Utica Avenue forms the boundary between two very well established and active neighborhoods in the City of Tulsa: Kendall-Whittier and the Pearl District. Overall the study area is approximately three-quarters developed consisting of a diverse mix of residential, commercial, industrial, healthcare and social services. Unfortunately, there are a number of vacant lots and buildings which create an uncomfortable and unattractive environment in which to walk. Healthcare and social services are predominant and include the City-County Health Department and the Center for Individuals with Physical Challenges on this stretch of Utica, with Hillcrest Hospital, St John's Hospital and OU Physicians in very close proximity. East of Utica at approximately 10th Street is Murdoch Villa, the only apartment complex in the City of Tulsa that caters to the disabled. One result of having these facilities in this area is the above average amount of pedestrian use from residents, employees and service users. Many of these pedestrian are using the public transit system to reach their destinations. As such there is a significant need to ensure that the environment is pedestrian friendly and safe and accessible to all.



Traffic Count (2005). Based on Data from INCOG, 2005.



Traffic Count (2005). Source: INCOG, 2005.



4.1. Photo Survey

The photo survey was completed to cover the following topics:

- Main Attractors in the area
- Bus Stops
- Sidewalks
- Pedestrian Safety

The captions point out the main issues regarding pedestrian infrastructure.

A
City County Health Dept.



Utica Ave. and 3rd St. intersection

B
Center for Individuals with Physical Challenges

C
Murdoch Villa

D
Hillcrest



Utica Ave. and 11th St. intersection

4.1.1. Photo Survey: Main Attractors



A
City County Health Dept.



Tulsa City – County Health Department



The Center for Individuals with Physical Challenges

B
Center for Individuals with Physical Challenges

C
Murdoch Villa



Murdoch Villa

D
Hillcrest



Hillcrest Hospital

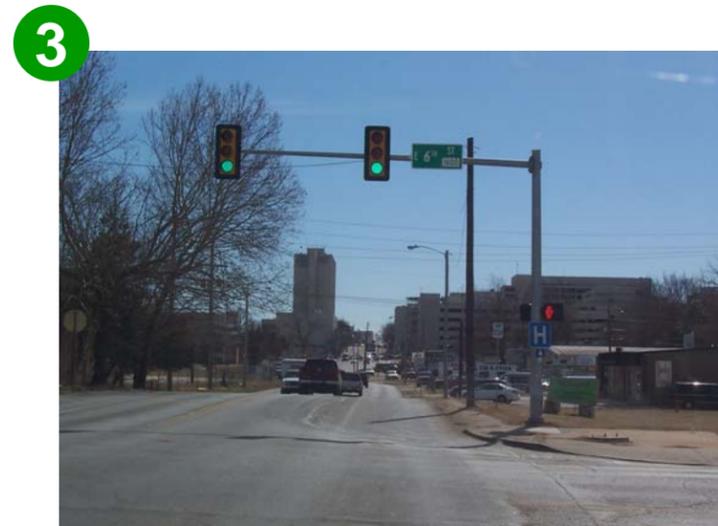
4.1.2. Photo Survey: Bus Stops



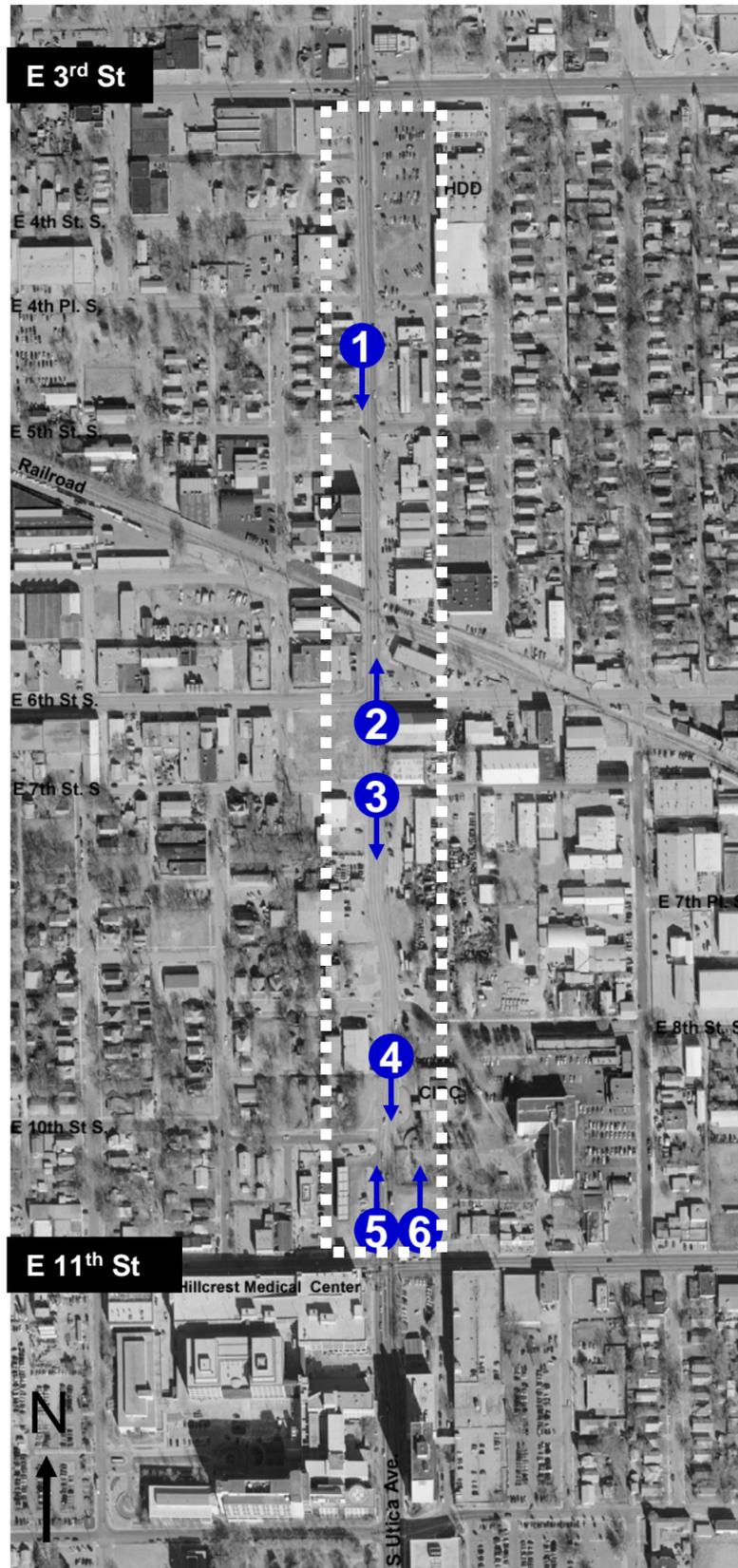
Bus Stop on Utica Ave. across the street from the Health Department



Bus Stop on 3rd St. close to the Health Dept: no shelters, no sidewalks



Bus Stop on Utica Ave. & 6th St: no shelter, no sidewalk



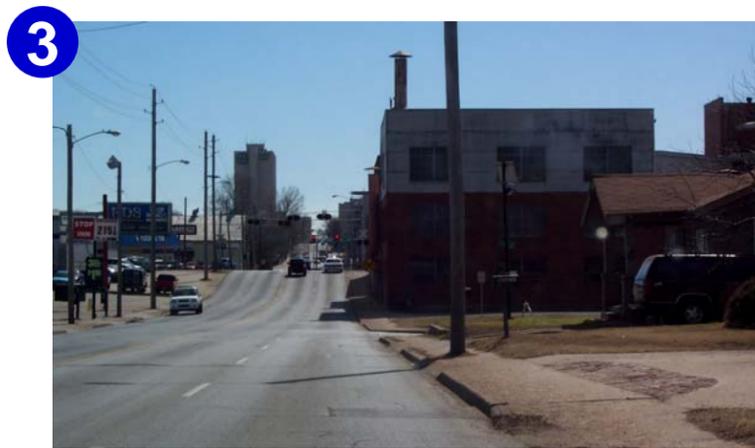
4.1.3. Photo Survey: Sidewalks



1 No Sidewalks. Sign indicating 35 mph speed limit.



2 No Sidewalks close to the Railroad, a significant barrier for pedestrians.



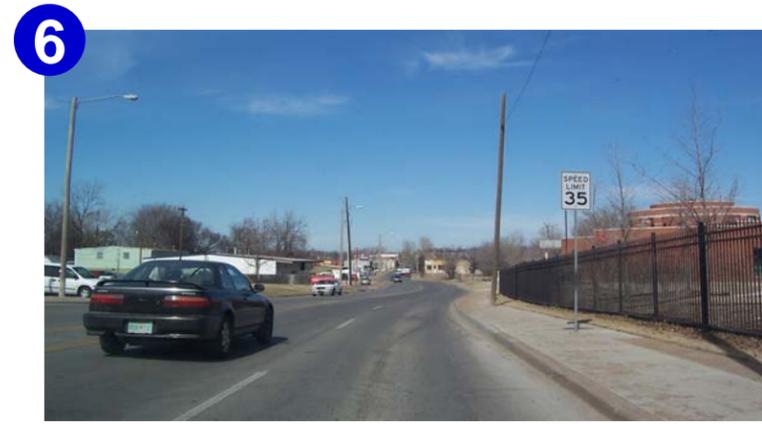
3 Light poles in the middle of the sidewalk create difficulties for the disabled.

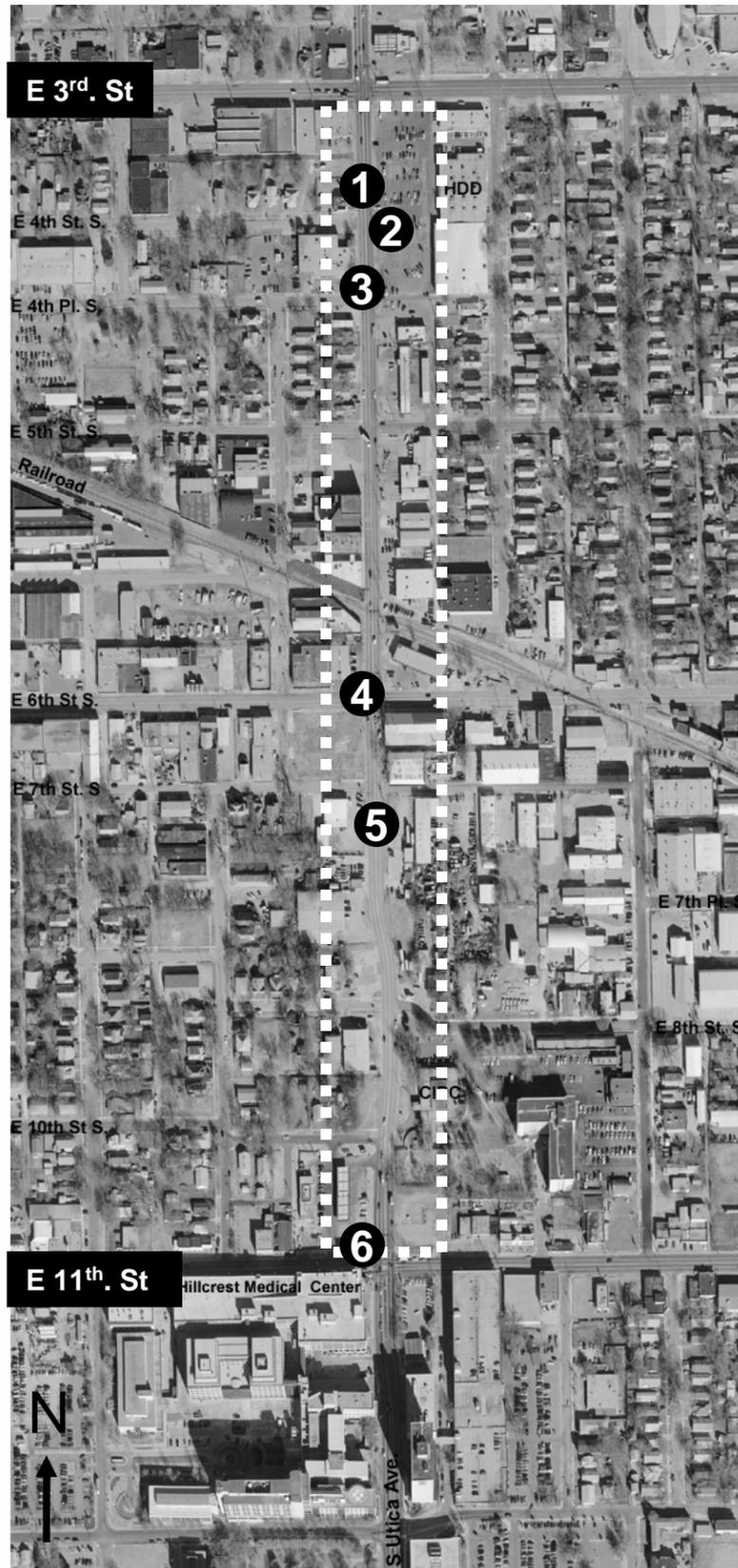


4 Sidewalks close to 11th St. and Handicap sign.

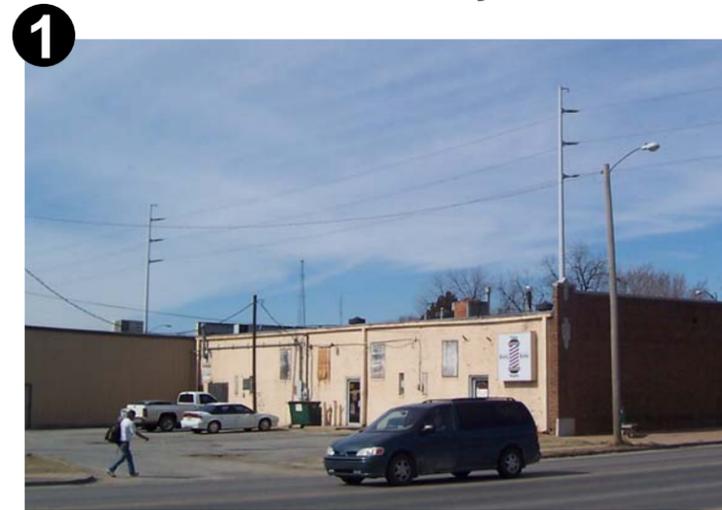


5 Sidewalks on both sides of Utica Ave. close to 11th St. intersection. Pedestrian connection between 11th Street and The Center for Individuals with Physical Challenges.





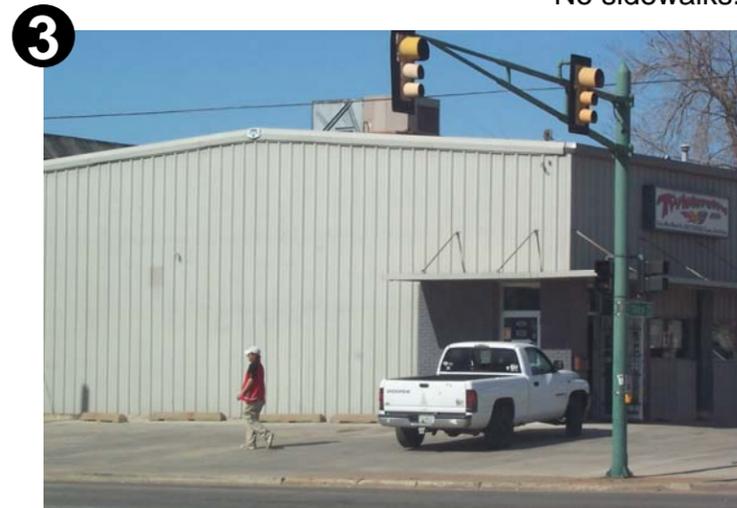
4.1.4. Photo Survey: Pedestrian Safety



No sidewalks.



No sidewalks and unsafe crossing.



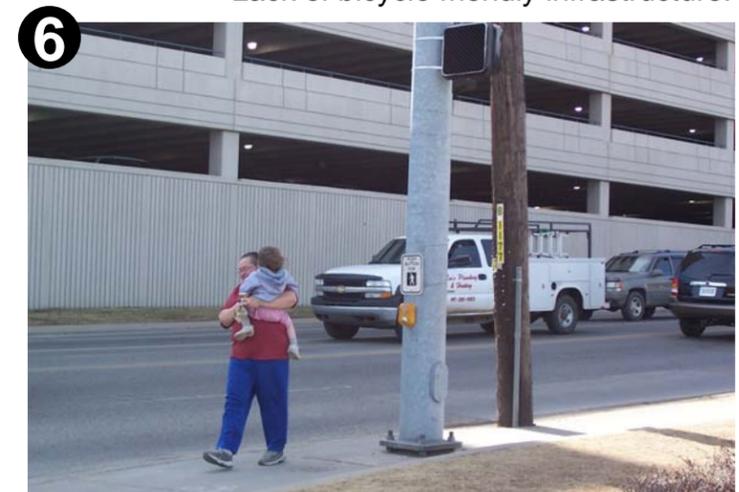
No sidewalks.



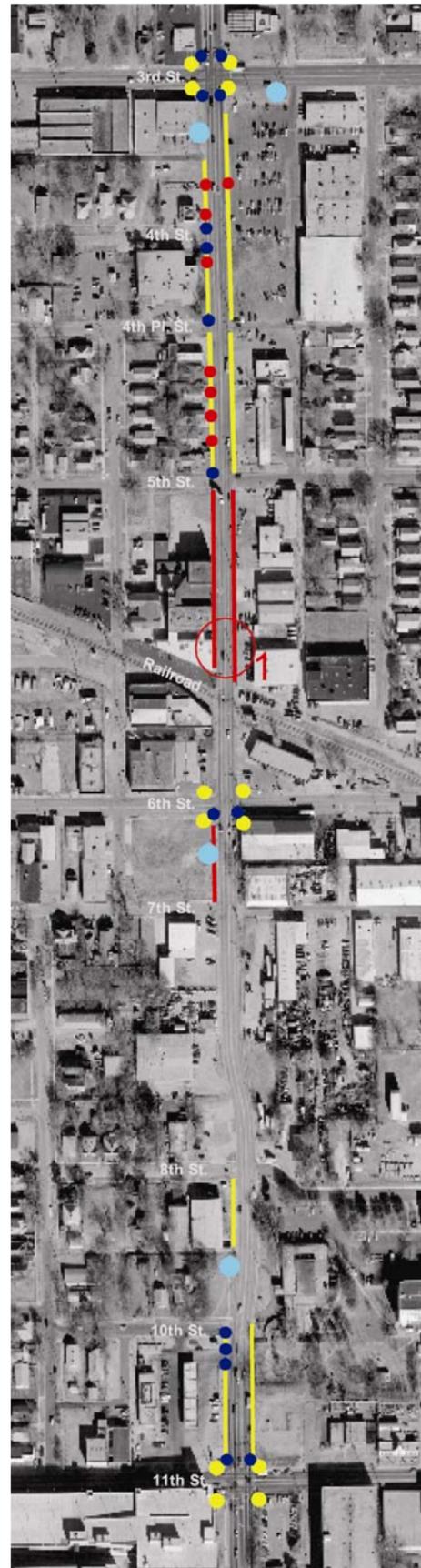
Lack of bicycle friendly infrastructure.



Unsafe pedestrian crossing.



An example of pedestrian friendly device: pedestrian call buttons.



Existing Conditions

- Bus Stops
- Pedestrian Call Buttons - some not working
- Disabled Access Ramps
- Car Ramps
- Existing Sidewalks - good condition:
- Existing Sidewalks - poor condition:
 1. Steep topography

4.2. Windshield and Foot Survey

On March 8th, 2007 a windshield survey of the area was undertaken. A number of photographs were taken and the survey was completed to gain the perspective of a driver moving through the area. This was followed on April 10, 2007 by a foot survey. The whole area was walked, photographed and documented. Both these surveys were vitally important in this planning process. They highlighted a number of the concerns the steering committee had raised and outlined the opportunities and constraints of the area to be considered when finalizing the recommendations.

Examples:



Pedestrian Call button on 11th & Utica



Time count device on 11th & Utica



Area with no sidewalks. Trail shows there is pedestrian traffic in the area



No buffer between cars and pedestrians



Cars parked in the sidewalks



No curb ramp



Sidewalk in good condition



No sidewalks and barriers for disabled



Sidewalks in poor condition

5. Results

5.1. Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

A SWOT analysis, focusing on the pedestrian, was completed at the first meeting of the committee to survey the current conditions in the area and discuss ideas for the future. This self-assessment survey was vitally important for establishing a picture of the area from a diverse group of interested participants. A number of points of discussion were broadly known, however a number of others were new to many of the participants. In particular this was the case in regard to a number of disabled access issues that others had not had cause to consider. This analysis identified the numerous, interacting issues that impact the pedestrian here allowing for a comprehensive look at the area. As a result the recommendations made are also multi-layered and should be taken as a group rather than individual remedies. Out of this process came a shared vision for the future and the willingness to work as a team. Below is a list of the topics and issues that were raised during the SWOT analysis.

Strengths

- Location: proximity to downtown, to highways (IDL, B.A. Expressway, I-244), to TU, Hillcrest and other large establishments results in unprecedented access to infrastructure and large populations of workers and visitors;
- Traditional buildings: pedestrian scale buildings are built to the street creating an environment that can slow traffic down;
- Public transit facilities: well served by Tulsa Transit;
- Proximity to other revitalizing areas: for example:
 - Pearl District to the west
 - TU and Kendall-Whittier to the east
 - Cherry Street to the south
 - East Village, Brady Village, OSU Tulsa and Greenwood downtown;
- Community: willing, engaged, educated and passionate community;
- Population: diversity;
- Appropriate Timing: upcoming comprehensive plan update, rising societal awareness of health issues and sustainability.

Weaknesses

- Aging infrastructure: particularly the poor condition of streets and sidewalks;
- Abandoned and neglected buildings: create eye sores and an uncomfortable environment in which to walk;
- Unattractive pedestrian environment: at certain stretches the pedestrian is forced to walk by blank walls and fences, other stretches the pedestrian is sandwiched between the busy street and large parking lots;
- Sidewalks: missing or incomplete in some parts and generally inadequate;
- Utility easements: in the front of property creates not only an eyesore in the form of utility poles, but are also an impediment to disabled access;
- Bus stops: provide little shelter from the elements and are uncomfortable to wait at;
- Lack of commercial development: for those who live and work in this area. For example, there are few restaurants or retail services;
- Traffic: high speed and volume;
- Crosswalks: do not provide enough crossing time for pedestrians, particularly for the disabled and those crossing with young children;
- Curb ramps: at a number of points are either in disrepair or do not exist;
- Light: the area is not adequately lit for the pedestrian;
- No sense of place.

Opportunities

- Low cost of land and buildings: opportunity for new and improved development, preferably restaurant and retail establishments;
- Attractive bollards;
- Tree planting;
- Create an environment that encourages drivers to slow down;
- Blinking lights to highlight the speed limit;
- Paving changes or strips to warn drivers to slow down;
- Enhance the railroad crossing;
- Covered bus stops: attractive and safe;
- Adequate timing for wheelchair crossing and all other crossings on Utica;
- Campaign for public transit use;
- Implement bike racks;
- Engage property owners to take care of their property.

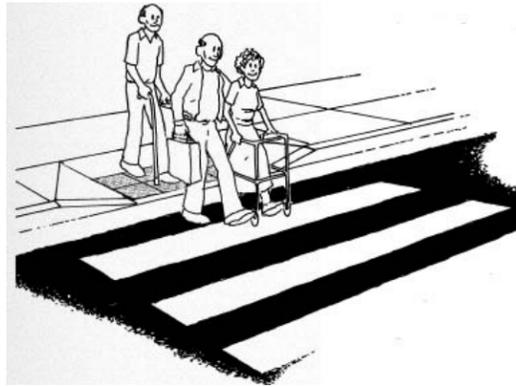
Threats

- Suburban model of development: beginning to spread from the North end of this stretch of Utica could negatively impact the pedestrian environment if it continues to move southwards;
- Zoning code: does not encourage new developments to be at a pedestrian scale;
- Off-street parking: in front of buildings leading to a “sea of parking lot”

6. Recommendations

Currently the pedestrian is treated as secondary to the automobile in this area. This plan calls for at the very least a leveling of the playing field. Ultimately the steering committee and the research show that this stretch of Utica is already well used by the pedestrian and well served by public transit. These assets should be built on to make the environment more attractive for these uses and to encourage new development and infrastructure improvements that enhance the area and bring new populations. The area is diverse socially, physically and economically and with these recommendations we believe that a vibrant walking community can flourish.

The result of the research and the input of the steering committee are the following 16 recommendations. These recommendations have been broken down into the four goals of this plan: pedestrian safety, pedestrian access, streetscaping and land use and policy. They are listed below:



Curb Ramps

Source: <http://www.fhwa.dot.gov/environment/sidewalk2/figure214.jpg>



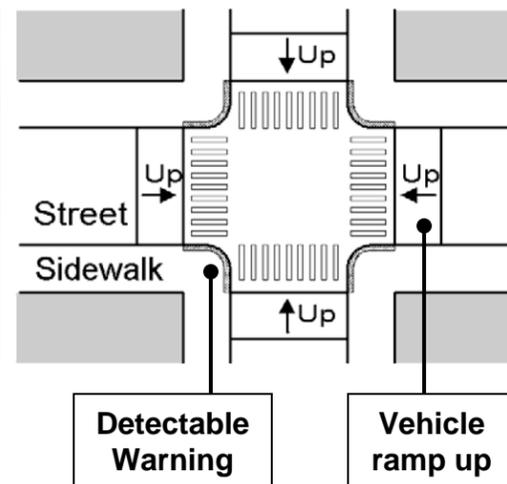
Raised Intersections

Sources:

Picture:

<http://www.students.bucknell.edu/projects/trafficcalming/Library/International/Sale-RaisedInt2big.jpg>

Scheme: Adapted from <http://www.access-board.gov/research/DWSynthesis/DWs6-10.gif>



PEDESTRIAN SAFETY

Lighting - implement pedestrian scale lighting on the street and buildings so the focus is not solely on lighting the road for the automobile. Certain stretches of the area, particularly between 7th and 8th streets, are extremely dark.

Crosswalks and Raised Intersections - should be safe and convenient. The intersections at 11th, 6th and 3rd streets should be raised. Raising the intersection elevates the pedestrian to the level of the sidewalk giving them a sense of safety and enabling drivers to see the pedestrian more clearly. Driving over a raised intersection also forces the driver to slow down due to the change in grade and material (see appendix for further information about Raised Intersections).

The timing of crossings should be adjusted to allow adequate time for the disabled to cross. The cycling of the lights should be shorter so pedestrians are not waiting a long time for the opportunity to cross. Audible pedestrian signals and a difference in paving could be implemented to assist the visually impaired. At 8th and Utica and 4th and Utica new crosswalks should be placed with pedestrian lights.

Curb Ramps - should be built or repaired at each crossing location.

Buffering/Screening - provide ample buffering throughout the area to protect the pedestrian physically and psychologically from vehicles. This can be in the form of landscaping, trees, planting strips and bollards. Implementation of landscaping can provide shade and other benefits to the pedestrian.

Speed Limit - the limit of 35 miles per hour is acceptable through much of the area except where there is a jog in the road. Here the recommendation is that the speed limit be reduced to 25 miles per hour both for pedestrian and motorist safety. Lights could be placed around the speed limit sign for emphasis.

In general this road is built for a much faster speed which encourages drivers to speed up. All of the recommendations are designed to create an environment that is attractive and in which drivers are aware of pedestrians. It is hoped that this will help to reduce speeding.

6. Recommendations



Brick Pavers

Source: http://www.soundtransit.org/images/working/artist/projects/sammamish/sammamish_detail4.jpg



Concrete Pavers

Source: <http://www.stgriswold.com/images/main/pavers2.jpg>

PEDESTRIAN ACCESS

Infrastructure Upgrades - the area should have a complete and attractive sidewalk network. This will require street resurfacing and sidewalk infill and repair. Surfaces should be smooth to ensure wheelchairs and strollers can move along easily.

Utility Placement - policies and standards for utility placement in the pedestrian right-of-way should be reviewed. Although underground utilities reduce the eyesore as well as the inconvenience it is realized that a more cost-effective strategy may be to relocate the poles out of the sidewalk.

Bus Stop Improvements - shelters should be built to protect the passenger from the elements. They should be well-lit for night time use.

Textured Pavement - smooth surfaces like asphalt encourage drivers to drive faster than rough streets. Changing the texture of the street using bricks, concrete pavers or cobblestone, among others can help slow traffic down (see pictures and appendix for further information).



Landscaping as Buffer between pedestrian and cars

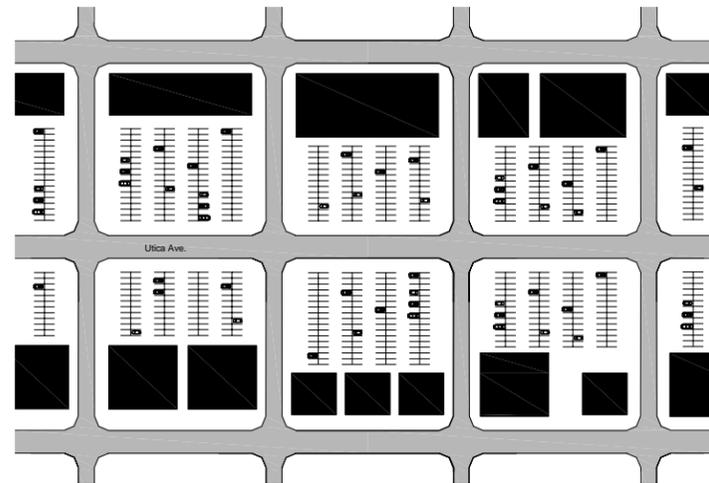


Cobblestone

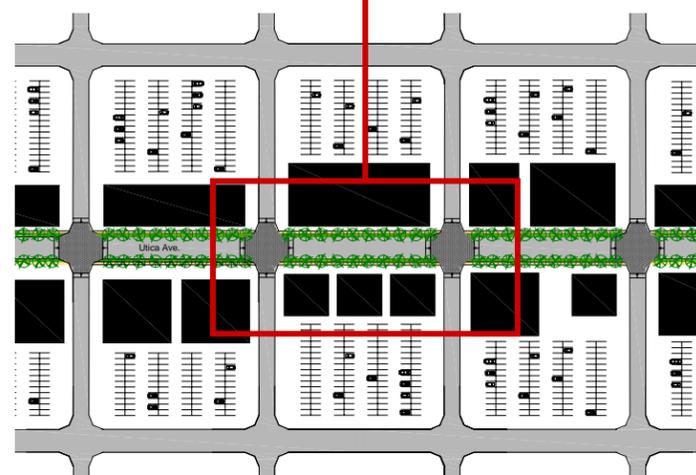
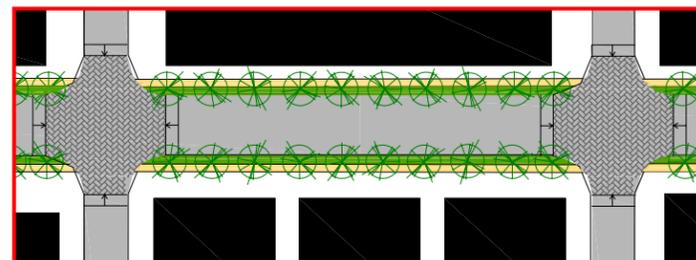
Source: <http://www.walkingboston.com/images/Cobblestone3.jpg>



6. Recommendations



- NOT RECOMMENDED**
- Parking close to streets
 - Buildings built away from streets:
 - no relationship with the street,
 - no sense of place, no enclosure
 - No landscaping:
 - . unpleasant environment for pedestrians
 - No disabled access



- RECOMMENDED**
- Parking in the rear
 - Buildings close to street:
 - . relationship with the street,
 - . sense of place, enclosure
 - Landscaping:
 - . creates shade for a more pleasant environment
 - . buffering from street / safety for pedestrians
 - Sidewalks
 - Disabled access
 - Elevated Crosswalks:
 - . pedestrian visibility
 - . slow down vehicles

STREETSCAPING AND LAND USE

Building and Zoning Codes - setbacks should ensure new buildings are built close to the street with parking in the rear or to the side and/or shared parking with other uses. Design guidelines should be implemented to ensure buildings have attractive and interesting facades, wide and abundant windows and pedestrian-oriented entrances. Zoning should encourage active uses like retail or restaurants (see schemes opposite).

Streetscape Amenities - beautifying the streetscape is important, this effort could include brick or patterned sidewalks, benches, trash cans and decorative lighting

POLICY

Comprehensive Pedestrian Plan - a comprehensive pedestrian plan for the City of Tulsa should be developed. This could be incorporated into the transportation element of the comprehensive plan update. From this a Capital Improvement Program for pedestrian projects could be developed.

Funding Sources - sources of funding for pedestrian enhancements and livable communities are growing and should be thoroughly researched. Specifically, Vision 2025 funds should be explored for some of these recommendations.

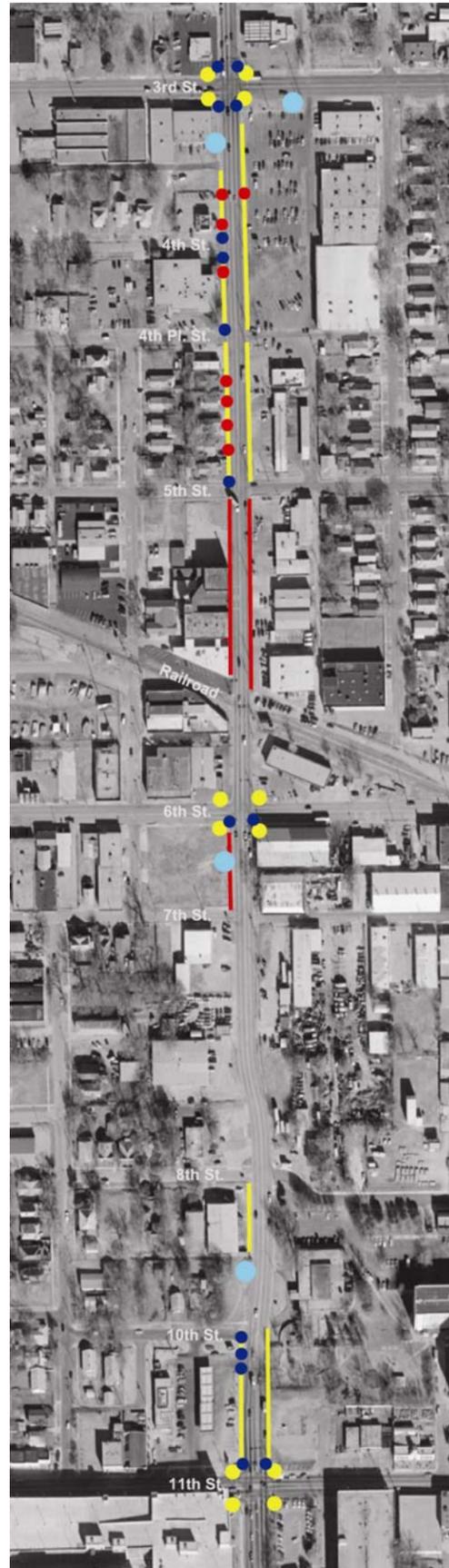
Tulsa Police Department - priority should be placed on the work of the police to enforce those laws that support the safety of pedestrians.

Citywide Program for Education - education of the general population on the numerous benefits of walking and how to be safe as a pedestrian should be developed. For example, there could be a citywide Pedestrian Week and a program for education in schools.

Citywide Promotion of Alternative Transportation - this promotion could include incentives for those who use alternative transportation to reach their destination.

These recommendations do not call for the removal of the automobile from the area. Rather they call for the altering of the behavior of traffic to suit the pedestrian friendly environment it is moving through. The recommendations will need to be prioritized by the community, the city and its partners. They have not been surveyed by traffic or civil engineers; this would have to occur prior to implementation to clarify the specific placement and characteristics of each recommendation.

This plan covers a small section of a revitalizing neighborhood close to downtown Tulsa. It is hoped that the implementation of this plan would link with the surrounding environment to create a system of walkable streets in the heart of Tulsa.



Existing Conditions

- Bus Stops
- Pedestrian Call Buttons - some not working
- Existing Curb Ramps for Disabled Access
- Car Ramps
- Existing Sidewalks - good condition
- Existing Sidewalks - poor conditions



Proposal

- Bus Stops Shelters
- Pedestrian Call Buttons - maintenance
- Raised Intersections
- Crosswalk and Pedestrian Light
- Textured Pavement
- Existing Sidewalks - in good condition
- Enhance existing Sidewalks
- New Sidewalks
- Landscaping
- Bollards
- Proposed Curb Ramps for Disabled Access
- Improve Existing Curb Ramps for Disabled Access



Proposal

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- New Sidewalks
- Landscaping
- Bollards
- Proposed Curb Ramps for Disabled Access
- Existing Curb Ramps for Disabled Access

6. Bibliography:

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Date of Research: 04/19/2007

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All Aerials from City of Tulsa – Development Services

7. Appendix - Raised Intersections

The entire contents of this page is taken from:
Source: <http://www.trafficcalming.org/raisedintersections.html>

Raised intersections are flat raised areas covering an entire intersection, with ramps on all approaches. The flat section is often made of brick or other textured materials. They usually raise to the level of the sidewalk, or slightly below to provide a "lip" that is detectable by the visually impaired. By modifying the level of the intersection, the crosswalks are more readily perceived by motorists to be "pedestrian territory". Raised intersections are good for intersections with substantial pedestrian activity, and areas where other traffic calming measures would be unacceptable because they take away scarce parking spaces.

Advantages:

Raised Intersections improve safety for both pedestrians and vehicles.

If designed well, they can have positive aesthetic value.

They can calm two streets at once.

Disadvantages:

They tend to be expensive; cost varies by the materials used.

Their impact on drainage needs to be considered.

They are less effective in reducing speeds than Speed Humps, Speed Tables, or Raised Crosswalks.

Effectiveness:

Average of 1% decrease in the 85th percentile travel speeds, or from an average of 34.6 to 34.3 miles per hour (from a sample of 3 sites).

Similar Measures:

By raising only a single crosswalk, you have a Raised Crosswalk.

By raising only a short section to a flat level (without a crosswalk), you have a Speed Table.

By raising an even shorter section and constructing it without a flat top, you have a Speed Hump.

Cost Estimate(s):

\$12,500 (Sarasota, FL)



Beaverton, OR - This raised crosswalk uses asphalt and highly-visible paint.



Eugene, OR - This raised crosswalk uses a unique pattern of concrete and brick. Bollards are provided to assist visually-impaired pedestrians detect the beginning of the crosswalk.



Montgomery County, MD - This raised crosswalk has tapers at the curbs to allow drainage to pass.



Tallahassee, FL - This raised crosswalk has a profile that more closely resembles a Speed Hump than a Speed Table.

7. Appendix – Textured Pavements

The entire contents of this page is taken from:
<http://www.trafficcalming.org/texturedpavements.html>

Textured and colored pavement includes the use of stamped pavement or alternate paving materials to create an uneven surface for vehicles to traverse. They may be used to emphasize either an entire intersection or a pedestrian crossing, and are sometimes used along entire street blocks. Textured pavements are good for "main street" areas where there is substantial pedestrian activity and noise is not a major concern.

Advantages:

Textured Pavements can reduce vehicle speeds over an extended length. If designed well, they can have positive aesthetic value. Placed at an intersection, they can calm two streets at once.

Disadvantages:

They are generally expensive; cost varies by the materials used. If used on a crosswalk, they can make crossings more difficult for wheelchair users and the visually impaired.

Effectiveness:

No data has been compiled on the effectiveness of textured pavements.

Similar Measures:

Textured pavements are often combined with Speed Tables, Raised Crosswalk, and Raised Intersections. Textured pavements are occasionally combined with Speed Humps.

Cost Estimate(s):

Varies by materials used and the amount of area covered.



Gainesville, FL - This textured pavement is combined with diagonal parking and neckdowns at the corners.



Seattle, WA - This textured pavement covers an entire downtown block and the two endpoint intersections. It is also combined with neckdowns, though they are not pictured.



Winter Park, FL - This is a street with textured pavement and parallel parking.



Montgomery County, MD - This textured pavement consists of evenly-placed brick, arranged in both a grid pattern and a diagonal pattern. The result is a smoother ride, less noise, and less of an effect on speeds.