

## **Proposed Sidewalk Guidelines**

Proposed to Sidewalk Committee by Bill May

### **Preface**

These recommendations represent a synthesis of my research with respect to regulations, pedestrian and transportation guidelines of other municipalities, planning and development pattern theories, pedestrian mobility, recommendations of arborists, urban foresters and city planning professionals as well as personal experience, observations and concepts.

Guidelines for implementation of sidewalks should establish a pro-active position on pedestrian mobility and accessibility. These recommendations should be long term; intended to serve the entire community beyond the term of the “sidewalk bonds”, establishing a starting point for enhanced pedestrian mobility. They are not censored to accommodate individual self-interests, those of specific “neighborhoods” or those who do not endorse pedestrian accessibility or enhanced pedestrian mobility.

### **Goals**

- Enable pedestrian accessibility to and from all properties<sup>1</sup>
- Encourage pedestrian activity by increasing pedestrian safety, connectivity, convenience and comfort <sup>11</sup>
- Enhance pedestrian safety by eliminating pedestrian hazards and minimizing conflict with vehicular traffic<sup>11</sup>
- Enhance utility and beauty of city right-of-ways
- Establish integrated long-range plan with guidelines for future improvements incorporating streets, sidewalks, pedestrian street trees, traffic calming, signage and city planning

## Background

On 7 November 2000 voters approved a proposition “AUTHORIZING THE ISSUANCE OF \$5000,000 IN BONDS FOR SIDEWALKS AND RELATED STREET IMPROVEMENTS”. The specific proposition was similarly vague, as follows:

SHALL THE CITY COUNCIL OF THE CITY OF WEST UNIVERSITY PLACE, TEXAS, BE AUTHORIZED TO ISSUE AND SELL AT ANY PRICE OR PRICES THE BONDS OF THE CITY IN THE AMOUNT OF \$ 5,000,000, MATURING SERIALLY OR OTHERWISE WITHIN 40 YEARS FROM THEIR DATE OR DATES, AND BEARING INTEREST AT SUCH RATE OR RATES, NOT TO EXCEED THE MAXIMUM INTEREST RATE NOW OR HEREAFTER AUTHORIZED BY LAW, AS SHALL BE DETERMINED WITHIN THE DISCRETION OF THE CITY COUNCIL AT THE TIME OF ISSUANCE, FOR THE PURPOSE OF THE CONSTRUCTION AND IMPROVEMENT OF CITY SIDEWALKS, INCLUDING RELATED STREET IMPROVEMENTS, AND TO LEVY TAXES UPON ALL TAXABLE PROPERTY WITHIN THE CITY ANNUALLY SUFFICIENT TO PAY THE INTEREST ON THE BONDS AS IT ACCRUES AND TO CREATE A SINKING FUND TO PAY THE PRINCIPAL OF THE BONDS AS IT MATURES?

Because there was no plan associated with the approval of bonds, a new council is tasked with deciding how best to utilize bond funds.

Right-of-ways are property of the City to be used for vehicular and pedestrian circulation and utilities that serve all residents. Sidewalks have been the responsibility of the abutting property owner, but there has been a history of inconsistent oversight and enforcement of the installation or maintenance of sidewalks or of planting and construction in right-of-ways. As a result, some have felt that trees, structures or planting in the right-of-way now precludes the use of right-of-way for sidewalks. Residents of Mercer, Sewanee, Westchester and Rutgers streets north of Rice Boulevard fought to be exempted from having sidewalks and negotiated the narrowing of the streets with installation of a single 4-foot sidewalk close to the street<sup>27,32</sup>

This compromise, with sidewalks on only one side, could serve as a precedent for streets bordered by side yards only or where houses front streets on only one side. My research would indicate that the 4-foot sidewalk and limited buffer from the street would discourage pedestrian mobility and pedestrian activity and therefore, would not be recommended for locations meeting the qualifications for sidewalks on only one side. I would hope that the results of initial sidewalk efforts will demonstrate the ability to provide enhanced pedestrian mobility with little deleterious effect, and that all residents will voluntarily embrace standards that encourage pedestrian mobility convenience, comfort and safety.

## **Recommendations**

The City of West University Place should hire a registered landscape architect with appropriate project and community relations experience to finalize sidewalk project guidelines, to serve as project manager for the design and implementation of the sidewalk program, to liaison with arborist/urban forester consultants, engineers and staff, to specific provide design guidance as required and to work with residents as the program progresses.<sup>35</sup> It is imperative that this professional be allowed to gather information from residents, then be insulated from pressure that would compromise his professional opinion. Appeal could be to council.

Consulting Urban Forester's right-of-way inventories should be reviewed and augmented with respect to recommended grade changes, and coordinated with engineer's as-built drawings for the infrastructure replacement program.<sup>36</sup>

All work must comply with requirements of Americans with Disabilities Act and Texas Accessibility Standards.<sup>1</sup>

It should be a long term goal to bring grade elevations of all right of ways to the level of the curb with minimum reasonable slope to ROW line to reduce the number and severity of ramps required to provide accessibility and to enhance mobility. This would also serve to ease driveway transitions to prevent "bottoming out", and to increase the area available in public right-of-ways for retainage of floodwaters, thus lessening the impact on homes.<sup>1</sup>

## **Sidewalk Requirements**

To encourage pedestrian activity, the literature generally recommends sidewalks on both side of streets, but the city has compromised on one instance to allow sidewalk on only one side where only side yards abut the right-of-way. This compromise sets a precedent, but is not a mandate for sidewalks on only one side of a street.<sup>6,9,11</sup>

Blocks with front lots facing street on both sides should have sidewalks on both sides.  
Blocks with front lots facing street on only one side may have sidewalks on one side.  
Blocks with only side lots facing street may have sidewalks on one side.

Should strive for continuous path of travel where possible.

## Sidewalk width

- 60-inch wide in residential areas to encourage pedestrian activity and mobility. The majority of experts recommend 5 feet as a minimum in terms of pedestrian mobility. This width allows two pedestrians to comfortably walk adjacent to each other and afford the opportunity to pass another.<sup>2,6,8,9,11,12,15,32,37</sup> Would only add new and replacement at this width and not tear up good 4' sidewalks at this time, but rather, replace them as part of future maintenance or new construction.
- 36-inch wide on dead ends of one block or less. (ADA minimum is 36" and only residents of these dead-ends are likely to use them.<sup>1</sup>
- 6-8 foot wide at schools, parks and commercial areas where pedestrian traffic is to be greater. This is wide enough for two groups of two to pass comfortably and is widely recommended.

## Sidewalk location

Sidewalks should be buffered from vehicular traffic. Most residential sidewalks can be separated from traffic with parking, planting and street trees. Sidewalks should not be located at the street edge. If this is unavoidable, consider on-street parking on this side with extended curbs at block ends to move traffic away from pedestrians.<sup>9,10,12,15,19</sup>

## Recommended Material

Even the most progressive municipalities still recommend concrete as the preferred material for sidewalks. There are relatively few alternatives and many new materials are as yet untested.<sup>2,6,37</sup>

- Investigate scoring patterns (ADA compliant).
- Investigate pre-cast panels, 5x5 module, possibly scored; set in approved sub-base so that they could be simply adjusted in the probable event there is movement.<sup>35</sup>
  - This system of large loose pieces has been used in the past. A college in Denver uses similar old stone slabs, recycled from the City of Denver.<sup>35</sup>
  - Some exposed aggregates, such as granite, would provide excellent slip resistance. And "natural" look.
  - This type of system would be beneficial in the case of new construction. A new sidewalk would not be destroyed, but simply removed and replaced after construction.
  - Engineer should specify, thickness, reinforcing, base, etc.
  - Could achieve some economy of scale in fabrication and installation.

- Consider small “in-line” test applications of un-proved alternate materials in initial priority area to investigate applicability for long-term usage in our conditions.
- Consider recycling concrete removed from existing broken sidewalks to be crushed and used as sub-base and aggregate.

### **Alternate materials**

Alternate materials might be allowed for whole blocks or for specific needs as in installations over tree roots if they meet the criteria in terms of ADA compliance, performance and maintenance. Costs above those for concrete should be borne by residents or block on pro-rata basis. Strict criteria for maintenance should be developed and rigidly adhered to. Alternate materials might include:

- brick pavers<sup>2,6</sup>
- textured galvanized steel plate
- stone slabs
- colored concrete
- stabilized decomposed granite (polypavement)
- recycled rubber tiles or mats

### **Driveways**

Driveways must comply with accessibility standards at sidewalk zone<sup>6,12</sup>

- Existing driveways are problematic and should be modified to accommodate sidewalk system rather than sloping sidewalks, etc. to accommodate drives.
- Driveways in right-of-way should be designed as curb ramps to accommodate access from street parking. This is another t another
- Should be designed not to park on right-of-way, ie: no parking on sidewalk. On street parking has been found to be a legitimate traffic calming strategy, parking over sidewalk denies pedestrian mobility. Resident options include cleaning out garage to park inside, parking on street, or planning with adequate setback from right-of-way to allow parking in front of garage without blocking sidewalk.<sup>6</sup>

### **Intersections**

- Provide accessible curb ramps to connect to sidewalks<sup>1,12</sup>
- Provide curb extensions where possible to:<sup>3,6,10,12,15,34</sup>
  - Reduce pedestrian crossing distance
  - Improve visibility for pedestrians and drivers
  - Prevent illegal parking at corners
  - Slow the speed of turning vehicles
  - Increase available area for curb ramps
  - Serve to visually narrow street, slowing vehicles through intersections
- Employ small corner radii to slow speed of turning vehicles<sup>10,12</sup>

## On Street Parking

Parked cars are said to be an effective buffer between pedestrians and vehicular traffic and are encouraged by proponents of traditional planning.

## Trees

Street trees should be an integral part of the sidewalk program. The literature points to many benefits of street trees including many such as speed reduction which would not be intuitively obvious. The recommended landscape architect/project manager include guidelines for street trees as part of his scope of work in order to create a coordinated streetscape plan as part of the sidewalk guidelines.<sup>2,6,7</sup>

Hazardous trees on public right-of-way constitute a liability risk and should be removed and replaced in accordance with “street tree guidelines. There are many dying water oaks and willow oaks at the end of the typical life span in the area that constitute a public hazard.

Trees in public right-of-ways should not dictate expensive and non-complying measures in implementation of an accessible system for pedestrian mobility. TAS 1.3.1 Minimum Requirements states:

“It is not the intent of these standards to prohibit or discourage the development and use of sites with extreme conditions. However, excavation or other site modifications, even contrary to natural terrain, may be necessary to comply with the intent of the law”.<sup>1</sup>

A tree is a renewable resource and should not be viewed as a reason to preclude pedestrian mobility or accessibility. There are many options available when the presence of a tree in the right-of-way interferes with the implementation of sidewalks. The proposed landscape architect/project manager, working with an updated Forester’s right-of-way inventory, site observation, and the abutting property owner should perform an analysis to recommend the optimal solution. The following represents some of the many available options for installation of sidewalks in close proximity to trees:<sup>7</sup>

If a tree is at a grade, outside the sidewalk zone and would not seriously impact the slope or require a change in grade for installation of sidewalks, the following options and combinations are available.

- Concrete sidewalks can be installed at grade above roots without cutting and fill added either side of walk to transition to grade. Installation of drainage board beneath the concrete allows air and moisture to reach even the area under the sidewalk and “bridges” the surface roots.<sup>36</sup>
- Approved alternate materials can be installed over the root area.
- The path of the walk can be altered within the right-of-way to lessen the impact<sup>7</sup>

If a tree is within the sidewalk zone at grade:

- The path of the walk can be altered within the right-of-way to lessen the impact<sup>7</sup>
- The tree can be relocated (up to 10 inch diameter with tree spade)<sup>7,36</sup>
- The tree can be removed (and another planted in a suitable location)<sup>7</sup>

If a tree is in or near the right-of-way in a location and at an elevation that would be impacted by grade cuts to facilitate accessible sidewalks and accessory curb ramps:

- Property owner can grant an easement to relocate the walk to private property if this option would facilitate access to curb ramps<sup>7,8</sup>
- Roots can be pruned in accordance with good arborist practices, grade cut to required elevation for walks and grade change accommodated with slope or retaining walls. Should maintain 4 1/2" clearance for each inch of trunk diameter.<sup>7,36</sup>
- Tree wells built as required for tree. Well should be 9 inches in diameter for each inch of trunk diameter<sup>8,36</sup>
- Trees up to 10" can be relocated with tree spade<sup>36</sup>

### **Implementation**

Initial implementation should be those sidewalks which connect primary destinations within and adjacent to the city. These destinations include schools, city offices, recreational facilities, parks and retail areas. Priority of areas of subsequent development will follow.

Inventory of existing sidewalks will be conducted and value analysis performed to determine extent of new sidewalks and those consistent with stated goals to be retained. Areas with no existing sidewalks, those in need of replacement and those that need to be replaced to facilitate complete accessibility will be replaced.

The project manager will manage coordinate inventories and analyses, provide design guidance, coordinate with residents and engineers to develop construction documents.

An analysis of the initial implementation project will document lessons learned and information to be incorporated in future implementation.

### **Maintenance**

With completion of the sidewalk system, maintenance of sidewalks should revert to property owners. Staff should formalize a system of review and enforcement to insure that the condition of sidewalks is not allowed to deteriorate once again.<sup>12</sup> We should insure that vertical and lateral clearance is maintained to make sidewalks passable. Many now are overgrown to a point where you can't use the sidewalk, or hit your head on branches.

**New Construction**

Sidewalks at new construction should be carefully inspected to insure compliance with guidelines, TAS, etc. If existing sidewalks are damaged during construction, they must be replaced.



## Observations

There is much discussion in the literature concerning pedestrian mobility, traffic and planning about traditional vs. conventional patterns of development. Traditional neighborhoods, prior to World War II were characterized by different uses in close proximity, narrow streets, short interconnected blocks, and much pedestrian activity. A driver or pedestrian had many route options due to the connectivity of the streets. Traffic moved slowly, but due to the many options available, the layout could accommodate the volume easily.<sup>11,15,16,20,22,29,33</sup>

In conventional developments, different uses are strictly separated. Large lots with deep set-backs border wide, long residential streets with few connections to feeders designed to move higher volumes of traffic faster.<sup>11</sup>

With few exceptions, West University is the essence of a traditional neighborhood. Over the years, “conventional” theory has been employed in an effort to eliminate traffic from some of the grid, channeling traffic to other streets. These new collectors were often widened in accordance with traffic planning theory of the time, to accommodate the newly increased volume of traffic and enhance traffic flow. In fact, our most recent comprehensive plan makes reference to “traffic flow” and “discouraging street parking to prevent impeding the easy flow of traffic” despite the fact that much of the literature about traditional planning, pedestrian mobility and traffic calming recommend on street parking as a companion with wide sidewalks, and buffer space with street trees as beneficial to pedestrian safety and traffic calming. Our neighborhood is small enough that perhaps we should open all blockage and impede all flow equally, consistent with traditional pattern of development. This would allow us to go many routes, but none very fast.<sup>12,22,23,27,33</sup>

It is evident, upon observation and research that traffic, pedestrian and quality of life issues are interrelated. In the past we have sought to address individual issues with little reference to this interrelationship. It is our recommendation that we make every effort to consider the total from a planning perspective when we next consider our comprehensive plan and when we address any zoning, traffic, pedestrian or quality of life issues.

A return to traditional planning principals could be beneficial to West U. The literature shows a relationship between the widths of streets, parking, right-of-ways, corner design and set-backs with vehicular speed. We should look closely at set-backs and the possibility of allowing low pedestrian scale front yard fences typical in old traditional neighborhoods.<sup>12,15,22,30</sup> This might be good for those who want their toddlers to be safe from traffic while playing in the front yard. (narrow streets, street parking, wide sidewalks with ample buffers, street trees short setbacks and pedestrian scale fences are all part of an overall traditional pattern which is designed to calm traffic and encourage pedestrian activity.

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