Patterns of Use in Main Street Activity: A Case Study of Downtown Chapel Hill

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With increasing growth in suburban fringes, many downtown areas are faced with challenges to maintain their vitality. A thriving business district, a center focus for the community, and the opportunity to walk from shop to shop are common features that help maintain such vitality. While many of these features are dependent upon larger and more complex factors such as economic conditions, coordinated planning efforts, and striking the correct mix of retail, other aspects, including the physical surroundings, how people use downtown public space, and the safety of pedestrian access, are often overlooked. Unsuccessful public spaces in many cities may be a result of this lack of concern with the quality of human use and activity.

To address this problem, researchers have examined how pedestrians use urban (and small town) public spaces to improve the quality of those spaces for the pedestrian.[1] This paper continues that research by using Chapel Hill, North Carolina as a case study to examine the relationships between patterns of use, the downtown physical environment, and the time of day. I conclude that increased awareness of commonly overlooked items could lead to important improvements in the total pedestrian environment, thereby leading to increased downtown livability and vitality.

Description of Study

The study was conducted on the 100 Block of East Franklin Street, often touted as the "heartbeat" of the Town of Chapel Hill. A lively college town, Chapel Hill has approximately 40,000 residents, many of whom are students[2]. Franklin Street is the main thoroughfare through downtown with the central focus being the 100 block of East Franklin Street, located directly adjacent to the north side of campus. This specific block was chosen for study because it is a section highly traveled by both residents and visitors and is often considered the representative block for the town. Almost all festivities for the town and the university take place in this downtown area.

The 100 block of East Franklin Street (hereafter simply referred to as Franklin Street) is lined with two- and three-story buildings that accommodate over 60 commercial uses. There are also institutional buildings at the east end of the block, including a post office and plaza on the north side of the street and a church and university offices lining the south side. The 1,000 foot blockface has a continuous sidewalk on each side of the street with three well-marked pedestrian crosswalks. The roadway has four lanes for traffic (two in each direction) with one lane on each side devoted to parking, loading/unloading, and bus stops.

The greater downtown area of Chapel Hill is somewhat unusual in that it is linear in nature. Besides Franklin Street, there are two other east-west routes for moving traffic through downtown—Rosemary Street to the north and Cameron Street to the south, both of which only have two lanes through this area. Because of the restricted capacity on these secondary streets, Franklin Street bears the burden of the east-west traffic through downtown Chapel Hill.

Description of Methodology

Data were collected using direct observation by a

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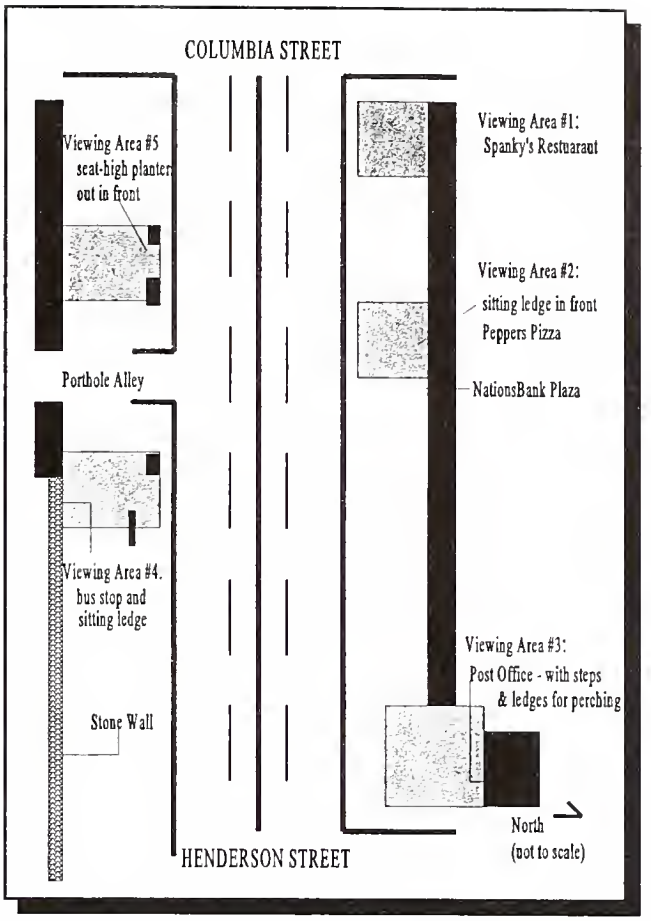
single person doing structured behavior mapping. Five viewing areas along East Franklin Street were chosen as representative places to map the downtown activity. These are shown on the accompanying map. All locations are street-side public spaces which appeared to be high activity areas. All of these spaces except one (veiwing area #3) are approximately the same size, and all contain sitting places.

Seven behavior mapping studies were completed at each of the five locations during three different times of day. These were lunchtime (12:30 p.m.to 1:30 p.m.), early evening (5:15 p.m. to 6:15 p.m.), and late evening (10:15 p.m. to 11:15 p.m.). In total, observations were made 21 times at each location—fifteen on weekdays and six on Saturdays—for each time period. At each time, the number of groups present at each location as well as the total number of persons in each group, their approximate ages and principal activities were noted. Any other relevant circumstances were also recorded (the presence of street performers, for example). Age categories of 10 to 17, 18 to 30, and 31 and over were estimated in order to separate pedestrians who were in high school or younger, university students, and adults. All individuals were counted as their own group and all persons who appeared to be together were judged as a group, irrespective of how many there were. All data were collected during fine weather conditions between October 22 and November 17, 1994.



Map of the viewing areas along the 100 block of East Franklin Street

Less formal methods of data collection included observations while walking the block at random times. In addition, discussions with Town officials provided the background of the downtown situation as well as details of the Town's Streetscape Plan. These exploratory studies were intended to ascertain relationships between patterns of use and the physical environment and to suggest possible improvements for the total pedestrian environment[3].

While this study describes findings that are specific to Chapel Hill, the information gathered and methodology used could be applied to any street scene setting. The primary purpose is to provide useful information that draws attention to commonly overlooked issues, and compare the findings to accepted standards. For example, knowing the age and composition of groups of users on Franklin Street could provide merchants with information that would help them target specific users according to the time of day. Data on people's use of the built environment, including alcoves, benches, and ledges, can also be applied to many different street scenes. In a similar vein, further examining some of the factors that lead to increased vibrancy in one area could be used to enliven a different area.

In the next section, the general patterns of use are explained and the adequacy of the existing facilities are described. The results of the behavior mapping as they relate to use over time are then discussed, followed by a description of variations of use by location and physical design. Finally, possibilities for improvements of the Franklin Street scene are explored.

Patterns of Use and Adequacy of Facilities

As is the case with most downtowns, the dominant pedestrian activity on Franklin Street is walking. In fact, during most study periods, over 90 percent of the groups were simply passing by. While it is impossible to know where everyone was walking to or from, I surmised many were going to one of the many shops on this block. However, during late evening, Franklin Street manifests a hint of the Champs-Élysées in Paris, as a fair number of groups were noted to be window

shopping while casually sauntering down the sidewalk. Franklin Street is one of the few places in the community where people of various ages, classes, and races come together in our increasingly privatized lives.

Sidewalk Width

Using average pedestrian traffic counts at our highest use area, we can determine if the width of pedestrian sidewalk space is adequate, according to accepted standards. The width of a sidewalk depends on accepted levels of service much the same as for roadways. Fruin[4] of the Port Authority of New York determined that, for a level of service A involving some crowding at the busiest time but freely flowing passage the rest of the time, walkways should have a flow rate of seven people or less per minute per foot of walkway width. Whyte[5], who is particularly sensitive about allowing the pedestrian too much space for fear of creating vacuums, endorses this standard. In studies of Copenhagen, Gehl[6] estimated a flow rate of between three to five people per minute per foot of walkway width as a good density range.

Average use over the ten-foot wide sidewalk in front of Pepper's Pizza was about 66 people per 3 minutes. This converts to 2.2 people per minute per foot of walkway. By the above standards and probably to many people's surprise, this sidewalk appears to be bordering on being too wide! But foot traffic before a Carolina vs. N.C. State football game on a Saturday is much heavier—about an hour before kickoff, over 150 people passed the same location. This converts to five people per minute per foot of walkway width, well within the acceptable range. All of this suggests that the width of the sidewalk along Franklin Street is fine.

Safety

Not only does there seem to be adequate sidewalk width, but pedestrians also have a considerable buffer to shield them from traffic. In addition to a row of parked cars, there are about 15 feet along the south side of the street and an average of seven feet on the north side between the roadway and the part of the sidewalk intended for walking. This buffer area usually includes nothing more than a bench, parking meters, light posts, or tree planters, but it is an asset for separating auto from pedestrian traffic. As long as each mode of traffic stays in its respective lane, there can be a "peaceful coexistence" between the two. The problem, however, comes when pedestrians need to cross the street.

In *Pedestrian Planning and Design*, Fruin argues that there are six indices to the pedestrian environment: safety and security, convenience and comfort, continuity, system coherence, and the visual and psychological attractiveness of the environs. Although a four lane roadway can adversely affect each of these, one particularly deserves attention—safety. Franklin Street is classified as a state highway, and sometimes it acts like one, with cars sometimes reaching or exceeding 35 mph. For the pedestrian waiting to cross the street, this presents a real danger. People were often seen inching into the street against the light to spot oncoming traffic, normal behavior[7] which many argue should be tolerated in a high pedestrian area such as Franklin Street. Curb extensions can mitigate this concern and additional safety measures should be sought. Further "fine-grained" research is also necessary to document the factors involved with pedestrian safety at Franklin Street crossings.

Biking and Bike Parking

An additional safety problem involves bicycles. Although cyclists are not permitted on the sidewalk where they would conflict with pedestrians, they are a factor in the roadway itself. Given the importance of bikes as a mode of transportation, there are remarkably few concessions for the cyclist on Franklin Street. There are no bike paths and traffic lanes narrow to ten feet in places. Given that the average auto is about six to seven feet wide and the average bicyclist needs two feet to maneuver, this leaves a margin of only one to two feet for the driver to avoid any autos on the left and cyclists on the right. This does not consider the possibility that the door of a parked car might open, thereby reducing the room even further. The 100 block of Franklin Street is currently not safe for cyclists. As a result, cyclists are referred to the parallel Rosemary or Cameron Streets, where they have barely adequate bicycle access.

Bicycle parking is another problem. Five bike racks are available in the area, and each rack accommodates between two and eight bikes. In total, the bike racks hold about 36 bikes, although some of these spaces are occupied by abandoned bicycles. Because the rack space is insufficient, bicycle owners must seek other places to lock their bikes. On an average day around lunchtime, 21 of 34 (62 percent) parking meters and sign posts along the block had bikes locked to them. Although there is enough room for the use of these make-shift bike racks, the inadequate supply of bicycle parking indicates a lack of respect for cyclists and should be remedied.

Variations in Use Over Time

Variations with time of day are described here to the extent that the activities within each time period can be generalized. The well-documented peaking phenomenon[8] was demonstrated, with the population reaching its high point around noon and then leveling off in the early and late evening. In fact, the total people mapped during the noon period exceeded the sum of the total people from both other times.

Different patterns emerged for different age groups. During the lunchtime and evening time periods, Franklin Street attracts a surprisingly diverse number of age groups for the main street in a college town. There is a consistent mix of age groups at all five locations at noontime. Approximately 60 percent of the people appear to be between the ages of 18 and 30, 37 percent are ages 31 and above, and 3 percent are ages 10 to 17. As we move into early evening, these proportions generally hold. Not surprisingly, late evening marks a drop in people 31 or older, and a peak in the mix of people between 10 to 17 and 18 to 30. In sum, college-age people comprised at least two-thirds of the people in almost every period.

Considering Franklin Street's social atmosphere, one would expect most people to be in groups. As a whole, however, there are more single walkers. Even though the noon observations include more total people, there is remarkable similarity in the breakdown during noon and early evening times, showing 56 percent and 55 percent of people alone respectively. Likewise, there are 32 percent and 29 percent of the total people grouped in couples. Nighttime is characterized by more college-age people and a dramatic increase in the number of people in groups. For weekday night traffic, 40 percent of the people were in couples and 40 percent were in groups of three or more.

The largest difference between weekday and weekend use was a significant increase in the number of people in groups. Noon and early evening traffic showed almost identical numbers, with couples comprising 44 percent of the total. During the night, a mere 8 percent of the people were alone, while there was an increase (52 percent compared to 40 percent on weekdays) in groups of three or more.

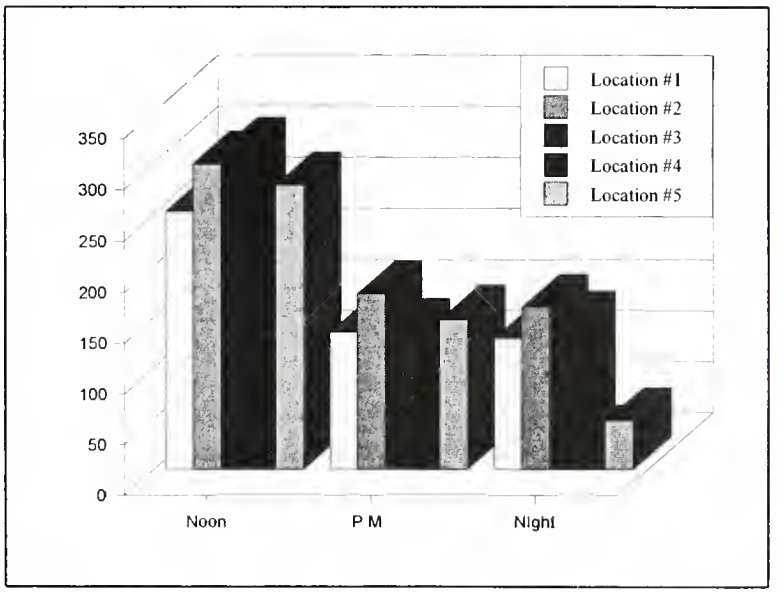
Variations In Use By Area or Features

100 Percent Corner

Whyte[9] uses the term "100 percent corner" to indicate the heart of the downtown area. Most often this is situated at the intersection of two major streets, and in Chapel Hill, the intersection of Franklin and Columbia is considered by most to be the "100 percent corner." This study indicates otherwise. Although the viewing area at location #1 did not take into account people passing on Columbia Street, in this study, the space in front of Pepper's Pizza (location #2), continually had more people than the Franklin/Columbia intersection. In fact, it had a higher number of people than all other locations in 16 of the 21 studies. It seems fair to posit that the highest use downtown area in Chapel Hill is not at a corner, but rather somewhere around Pepper's, on the north side of the street across from Porthole Alley.

Use Across the Block

The graph of the total number of people in each area for each time period during weekdays shows distinct differences according to location. Assuming Franklin Street recruits most heavily from the University, it is interesting to posit the highest use approach points using the data collected. The high use directly across from Porthole Alley probably indicates that it is also a primary entrance to the University. As the Post Office plaza closely rivals the use at Pepper's Pizza, it is



Total persons in each location on weekdays.

probably the second favorite entrance. It seems clear that the walk along the stone wall is the least used entrance point to the University.

In addition, night-time usage was remarkably stark along the south side of the street. This side does not contain as many late night attractions as the north side and appears to have significantly less lighting than the north side of the street. Efforts to "spruce up" this side of the street included planting some ornamental trees. These trees appear to block some of the light, thereby making the south side relatively darker. Although people like trees, at night they like light even more.

Standing

Spatial differences for people standing are relatively simple. The only locations in which more than two people were mapped standing at any time were bus stops. Given the space, the fact that they often chose not to sit is surprising. People may prefer to be on foot or do not like the location of the seating areas. Determining precisely why and where people sit and stand at bus stops is an interesting question that is beyond this research design. However, I did notice that, first and foremost, people waiting for a bus sought overhead shelter. Although it was never raining during any of the study periods, people still preferred to wait under shelter, near the lot-line (where the building meets the sidewalk), and in an alcove where possible. While one site had two alcoves, only one could be used for bus waiting because of the high traffic levels in and out of Pepper's Pizza. For this reason, it was not uncommon for strangers to share a single alcove. At another location with three alcoves, none had heavy traffic. The first individual would place herself in the nearest alcove, with the next person lining up no closer than ten feet away, usually in the adjacent alcove. At times, there would be four people lined up under the awnings, evenly spaced no closer than five feet from the next person.

Sitting Places

The relatively small number of people sitting on Franklin Street raised an interesting question: are people walking because of a lack of good sitting places or because they wish to walk?

Each area studied contained different seating opportunities. During the 21 observed study periods, the eight-foot ledge in front of Pepper's Pizza was occupied 17 times. Sitting space in viewing area #4, albeit divided between the bus stop bench and the stone wall, was occupied 15 times. While each of these locations is near a bus stop, the majority of people sitting in these locations were simply looking for a good place to sit.

In constrast, a look at the bench in front of Spanky's Restaurant explains why it was used less than a handful of times during the 21 observation periods. The street benches are stark in appearance and seem to be randomly placed along the block. The Post Office plaza boasts the highest number of seats of any area, but considering their location more than 25 feet from the sidewalk, it is little wonder that they were rarely used by anyone other than teenagers looking for an isolated place to sit. The steps and ledges are at a good height for perching, and considering the high activity of the Post Office plaza, I cannot help but envision their increased use if they were brought closer to the sidewalk. The tree planters near viewing area #5 were used only by people who were eat food from one of the nearby take-out restaurants.

Nasar's findings[10] that heavily used spaces contain more sitting space do not hold true in Chapel Hill. In fact, the findings from this study indicate the reverse. Pepper's Pizza had the highest use and the least amount of "sittable" space—less than eight feet of bench. Location #4 had the lowest overall use and the second highest amount of sitting room. Despite the stone wall near location #4 being somewhat removed from most of the activities, it may be used more extensively on a good day than all other sitting spaces combined. One conclusion is that people are attracted to specific locations on Franklin Street by forces other than the amount of sitting space. A second conclusion is that people prefer ledges over formal benches, especially when the ledges are on the lot line looking out onto the street scene. The places that contain such a sitting space were used extensively.

Exactly how many sitting places are enough? Franklin Street currently has a total of 610 linear feet of formal and informal sitting spaces. Almost half of this space is comprised of the stone wall bordering the University. Whyte[11] recommends one linear foot of sittable space for every thirty square feet of plaza space. In this case, Franklin Street has only the one plaza in front of the Post Office. Since the entire block is considered a social place and is relatively compact, the entire sidewalk space could perhaps be conceived of as one big plaza. This comes to a total of 39,472 square feet. Therefore, Franklin street provides a linear foot of sitting space for about every 65 square feet of plaza (or public) space—less than half of what Whyte recommends. Although this standard was adapted from plaza to sidewalk space, it does provide an argument for the need to increase the sitting area.

Territories

There appear to be some locations, more than others, that assume a certain character by the type of people they attract. One type is what Whyte[12] terms the "undesirables." This type, which includes panhandlers and vagrants, is present on Franklin Street. Panhandlers were not observed during any part of the daytime on weekdays. They were, however, seen at night and during all times on Saturday, although not concentrated in any one location. Of more interest is the locational patterns of the vagrants that frequent the Franklin Street scene. By far, the most noted character was an older man called "Mr. C" because he was always seen smoking a cigarette. Of the 14 study periods at Pepper's Pizza during daylight, "Mr. C" was spotted 12 times.

Location #2 in front of Pepper's Pizza.

At the time of this study, a Chapel Hill ordinance prohibited peddlers in the public right-of-way along Franklin Street. A driving force behind this ordinance are the merchants who claim that any peddler or vendor who comes in and operates out of a suitcase, does so in direct competition while paying no rent. While the logic behind this is evident, the argument is also an effective way to "dullify" the downtown scene. Fortunately, this ordinance was not strictly upheld. Jugglers sometimes receive money for performing on the Post Office Plaza. On almost any weekend or busy night, you will find "the flower ladies" selling flowers, just as they have been doing for the past 30-plus years. While the "flower ladies" are most often spread out along one of the stark benches near Spanky's, they are sometimes located on private property, either in the alley near Miami Subs or the NationsBank Plaza. [The ordinance was changed in 1995 —Ed.]

For a town of only 40,000, Chapel Hill has a number of street performers. On most Friday and Saturday nights and Saturday afternoon, you will see at least one musician. Street musicians seek high activity areas, and almost all performers were located within 50 feet of the NationsBank Plaza, near the high use area in front of Pepper's Pizza. On two Saturday afternoons, Hare Krishnas were seen chanting in front of the NationsBank Plaza.

In sum, activities on Franklin Street are found primarily on the north side of the street. All street performers, all peddlers, most vagrants, and almost all nighttime activities are on the north side. Perhaps it is because of the differences in lighting, but perhaps there are larger forces at work.

These larger forces may be precisely the reason for the use of one of Franklin Street's more visible territories—the Post Office Plaza, where high school kids hang out. Particularly on Friday and Saturday evenings and nights, high school age kids constitute up to 50 percent of the people in this location. High school kids like to be where all the action is along Franklin Street and they like to have their own space. The Post Office Plaza provides both of these. It is also adjacent to the site of the town teen center. For this reason, it is difficult to determine if there are physical attributes of the plaza that are preferred by high school people or if they hang out there simply due to convenience.

Improvements

Streetscape Plan

Improving the environment of Franklin Street has a long and unresolved history. Almost everyone agrees it is an important part of the community and that steps should be taken to ensure its long-term vitality. The Town recognizes this fact, and as a response, has

adopted a Downtown Streetscape Master Plan in 1993. The plan is intended to apply criteria of the Town's design guidelines to the public rights-of-way of the Town Center.

The plan recommends a curb extension at the street crossing by Porthole Alley, a major entrance point to Franklin Street from the University. This curb extension will decrease the distance pedestrians traverse on the street, allow pedestrians to better view oncoming cars, and make space available for seating areas outside of the primary pedestrian flow. Considering its proximity to our highest use area, such an improvement will probably be successful.

Additionally, the plan calls for an increase in site furnishings in the Central Business District. It recommends different types of trees and planters and suggests that benches be arranged at right angles to each other and varied in orientation to provide different views and sun exposures. While this sounds good, there are some potential problems. The town needs to explore the possibility of placing benches to provide similar benefits of those at lot-line rather than placing them at curbside facing the sidewalk. In addition, if trees are to be planted, every effort must be made to ensure that they will not block existing nighttime light.

The Downtown Streetscape Plan primarily addresses features that are cosmetic improvements for the street. As argued in this paper, these features are vital to a successful center. It is important to recognize, though, that slapping band-aids on old sores will not solve all the problems. Franklin Street cannot optimally serve its many functions because it suffers from a fundamental lack of space.

As is the problem with many towns, there is simply not enough room available to please everyone. The North Carolina Department of Transportation would like to increase the level of service for autos by increasing the lane widths. Many pedestrians desire increased sidewalk widths and room for outdoor cafe seating. Merchants claim that on-street parking is necessary for business. Bicyclists want a four-foot path that will allow them access along the block. All of these demands have to be accomodated within a 100 foot right-of-way. Needless to say, it is impossible to please all parties. Perhaps we should consider the options.

Pedestrian Space

Franklin Street is often touted as one of the most successful pedestrian areas in North Carolina. Considering the number of pedestrians and activities on the street per unit area at most times of the day, this could very well be true. In spite of claims that more walking space is needed, that things are just too crowded, and that the town should make the area into a pedestrian mall, this study indicates that the amount of sidewalk space seems to be just about right.

Bicycle Lanes

As already mentioned, bicycling conditions on Franklin Street are deplorable. Bicyclists are not, and should not be, permitted on the sidewalks; however, they should not be run off the street or subject to undue risk. Referring bicyclists to other downtown streets does not solve the safety problems because the conditions elsewhere are not much better.

On-Street Parking

Local merchants claim that the short-term parking currently available on Franklin Street is essential for maintaining their business. In addition, this row of parking serves as a buffer between the pedestrian area and the constant stream of cars, thereby serving as an important safety feature. Finally, short-term parking spaces in front of stores create a constantly changing facade that helps the area appear vibrant.

Vehicular Traffic Lanes

The North Carolina Department of Transportation claims that the current four lanes of traffic along Franklin Street are the minimum for maintaining an acceptable level of service. They are quick to mention that the lane widths are already below many standards, and that the street currently registers between a "C" and "D" level of service. In lay-person's language, this is between stable and the lowest acceptable standard. Improving this particular situation can be achieved by either decreasing the amount of vehicles traversing the street or increasing the capacity of the street through widening the lanes or adding lanes at the expense of on-street parking.

Widen! Widen! Widen!

With development in Chapel Hill spreading in every direction, traffic volumes on Franklin Street are unlikely to decrease. To improve the traffic situation it might seem as if the only solution is to increase the capacity. But before jumping to this conclusion, we should ask, "What is the ultimate goal in such a situation?" If the goal is to simply accommodate the seemingly ever increasing demands of the auto, then

the lanes should be widened and new ones should be built. However, if our goal is more comprehensive, including such objectives as maintaining an inviting town center, improving pedestrian safety, and encouraging alternative modes of transportation, perhaps we should reconsider our options.

Can You Visualize

What are the options to widening Franklin Street? Advocating decreased capacity along Franklin Street is a very tricky situation and is probably outside the scope of this paper. But as I wear my hat for advocating vibrant public spaces, I envision a five-foot bike lane on each side of the street, outdoor retail sales, street cafes and dining, and improved public squares—all at the expense of just 20 feet of traffic lanes. The town is now considering changing the zoning ordinance to allow curbside outdoor dining in the public right-of-way. This possible variance would apply only to establishments on West Franklin Street simply because this is the only location where there is sufficient room. Such a plan cannot yet be considered on East Franklin Street because of the space problem. Without doubt, outdoor dining would improve the vitality of the downtown area by creating an atmosphere in which people are more likely to stay. People could stop and enjoy downtown Chapel Hill rather than simply passing through it.

Yes, But the Traffic Implications

As I stop dreaming and put on my transportation planner hat, I visualize the terrible traffic implications for Chapel Hill as a whole, not to mention the historic preservationists on Cameron and Rosemary Streets who would be at my jugular for diverting traffic to those streets. If four lanes of traffic are here to stay, it is important that all concessions be made to accommodate pedestrian safety and access. Certain features, such as well-marked crossing areas and curb extensions, are important elements that enhance the total pedestrian environment. The Streetscape Master Plan addresses pedestrian safety through design recommendations for extending curbs to better accommodate pedestrian needs by enhancing crosswalks. The plan, however, does not address the safety concerns attendant with speeding traffic, sometimes within less than seven feet from the pedestrian. According to Untermann,[13] controlling the automobile currently involves two interrelated techniques: (a) slowing traffic by altering the street, and (b) allowing or even encouraging traffic congestion through manipulating the width of the street.

The most effective thing we can do in this situation is to ensure that Franklin Street's traffic lanes are not widened. Another mechanism for slowing traffic is the use of traffic lights and signs.

There are three traffic lights along the 100 Block of East Franklin Street. The town is currently testing a closed loop traffic system using Columbia Street and North Boundary Street (a cross street less than three-quarters of a mile east). This will enable an automobile at 20 mph to travel this entire distance, including the 100 Block of East Franklin, without ever having to stop for traffic lights. Although, the purpose is to reduce the time it takes to travel along the stretch, I cannot help but think about the implications this may have on drivers whom I see racing down the street to be the first one at the next red light. Perhaps the town should consider placing signs similar to those used in other communities, stating something along the lines of, "Traffic signals timed for 20 mph traffic—it does not pay to go faster!"

Perhaps the town should use traffic calming mechanisms such as those found in the Dutch principle of the *woonerf*, which emphasizes pedestrian-oriented street design. Although usually found only in residential communities, further adaptations of the *woonerf* could facilitate its transfer to commercial and retail areas. As Untermann[14] mentions, supporting congestion is a tricky strategy. Traffic engineers have worked long and hard to smooth out the irregularities of traffic and increase flows. For them, congestion is a mark of failure. Since the on-street parking already slows down the observant driver, though, perhaps it wouldn't hurt to keep a red light or two, or even add some cobblestone pavement along the block to do the same.

Implications

The mapping of downtown activity in Chapel Hill provides useful and prescriptive information. In terms of description, the mapping reveals distinct patterns of use that are not necessarily consistent with Nasar's 1990 study or expected findings. These include the slight majority of college age people at noon-time, little correlation between activity levels and sitting places, and the already adequate width of the sidewalks.

The results are prescriptive in that they suggest directions for improved use through design. With regard to sitting places, patterns of use suggest a preference for ledges at lot-line, looking out onto the street scene. Not surprisingly, the somewhat randomly placed stark-looking street benches receive very little use. Underutilized store alcoves were seen to be a favorite by both people waiting for buses and street

musicians. Alcoves provide sought-after shelter for people standing and a stage-like setting for performers. Compared to accepted standards, Franklin Street is also severely lacking in the amount of sitting spaces. This lack may be partially responsible for the high percentages of people walking.

Another observation is that low levels of nighttime use may be the result of diminished lighting caused by increased vegetation. Finally, there is a lack of bicycle facilities such as bike lanes and bike racks.

While a one-time study of street activity is beneficial, monitoring street-side activity on an annual basis could present a more telling story. Records of activity use can assist in evaluating the impact of downtown or other developments. For example, how would a change in retail mix affect patterns of use across the block? Would physical improvements increase the vitality of some areas or blocks at the expense of others. What other factors contribute to a changing street life? Through using observations, such as those developed here, "before" and "after" data could be of assistance to decision-makers. Increased resources or technology such as time-lapse photography, videotape, or computer could increase the scope and detail of the information gathered. Ultimately, the development of empirical knowledge concerning the effects and status of the downtown environment could lead to more informed decisions.

In the meantime, changes to address the shortcomings described in this study will enhance the livability of the public space and make the downtown area a more desirable place to visit. CP

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Notes

[1]Whyte, 1980; Francis, 1984; Gehl, 1987; Nasar, 1990; Li, 1991; Jacobs, 1993.

[2]North Carolina Department of Commerce, 1990.

[3]The objective was not to statistically prove relationships between specific patterns of use and the physical environment while controlling for all sorts of variables. Advanced statistical documentation requires more elaborate research methodology and additional resources that were not available.

[4]Fruin, 1971.

[5]Whyte, 1988.

[6]Gehl, 1987.

[7]Harrell, 1990.

[8]Pushkarev and Zupan, 1975.

[9]Whyte, 1988.

[10]Nasar, 1990.

[11]Whyte, 1980.

[12]Whyte, 1980.

[13]Untermann, 1991.

[14]Untermann, 1991.