

clear that much research and field trial is urgently needed, although to outline these requirements would require a separate memorandum. A major complication is the variations among the persons affected: passengers, abutters, young, old, of different social and temperamental character. To this extent, highway design shares the complexity of public design for human use. We have mentioned the importance of public views. Rather than waiting for a population to rise in protest, it is more prudent, and more in the public interest, to incorporate in design and testing procedures into all major highway design decisions.

Since these criteria refer to the direct satisfactions achieved by road users, they rank in importance with more obvious criteria such as capacity, safety, and cost. While some of these sensuous criteria are achieved by manipulating road detail, in general they bear on fundamental decisions of location, alignment, and highway characteristics. It is a common mistake to defer the "looks" of a road to a final application of cosmetics, when damage and ugliness can only be ameliorated by the sensuous quality of a road, or of a system of roads, must be considered from the beginning.

Designing and Managing the Strip (1974)

with Michael
Southworth

sketches and
photographs by
Michael
Southworth

The arterial street is the skeletal system of the American city. When continuously lined with shops and services, it becomes the "strip," the street in its most uncomfortable form. This study investigates the possibilities for improving the environmental quality of these ubiquitous, always criticized, commercial strips. It looks at the impact these places have on their users, and it suggests standards of quality which might be applicable to them, as well as some patterns of use and form which could bring out their potential as a human environment.

By "commercial strips" we mean linear shopping developments along arterial streets or highways. They are sometimes called by other names: "roadside ribbon developments," "business ribbons," "string streets," or simply "strips." Activities along them are primarily commercial, but office, residential, and light industrial uses are commonly included. All these uses front directly onto the arterial, making the strip only one parcel deep on each side of the street. Strips are typically unrelated in function or form to the activities behind them, which are usually residential but are sometimes industrial or undeveloped.

The commercial strip has many deficiencies—its noise, its confusion, its harsh climate, its monotony, its inhospitality to man on foot, its overwhelming ugliness. Strips are among the most "polluted" man-made environment we have. They affect the quality of entire regions because of their extensiveness (figure 1). They are among the most visible elements of the American city. A product of the streetcar, the automobile, and private speculation in land, they are one of America's unique contributions to urban form. Now strips are found in cities throughout the world. They epitomize the irresponsible use of the public environment for private gain. These endless, formless, eventless, cluttered avenues saturate the urban experience. Every city has them; few cities want them. They are most prevalent in the areas of new growth. For example, Los Angeles conducts nearly all its work, travel, shopping, and recreation "on the strip." Sunset Strip has become almost a national monument, a symbol of Los Angeles and the golden age of film. Nearly every American city has at least one "Sunset Strip": Minneapolis [and] St. Paul are linked by a four-mile strip called the "Midway," Boston has its "Route One," and Dallas has its "Lemmon Avenue."

Shopping streets are an ancient urban feature, but strips in their present form first appeared with the advent of the streetcar. Typically, they grew in residential areas. The improved access created by the streetcar, which opened up new suburban land to residential use, sharply in-

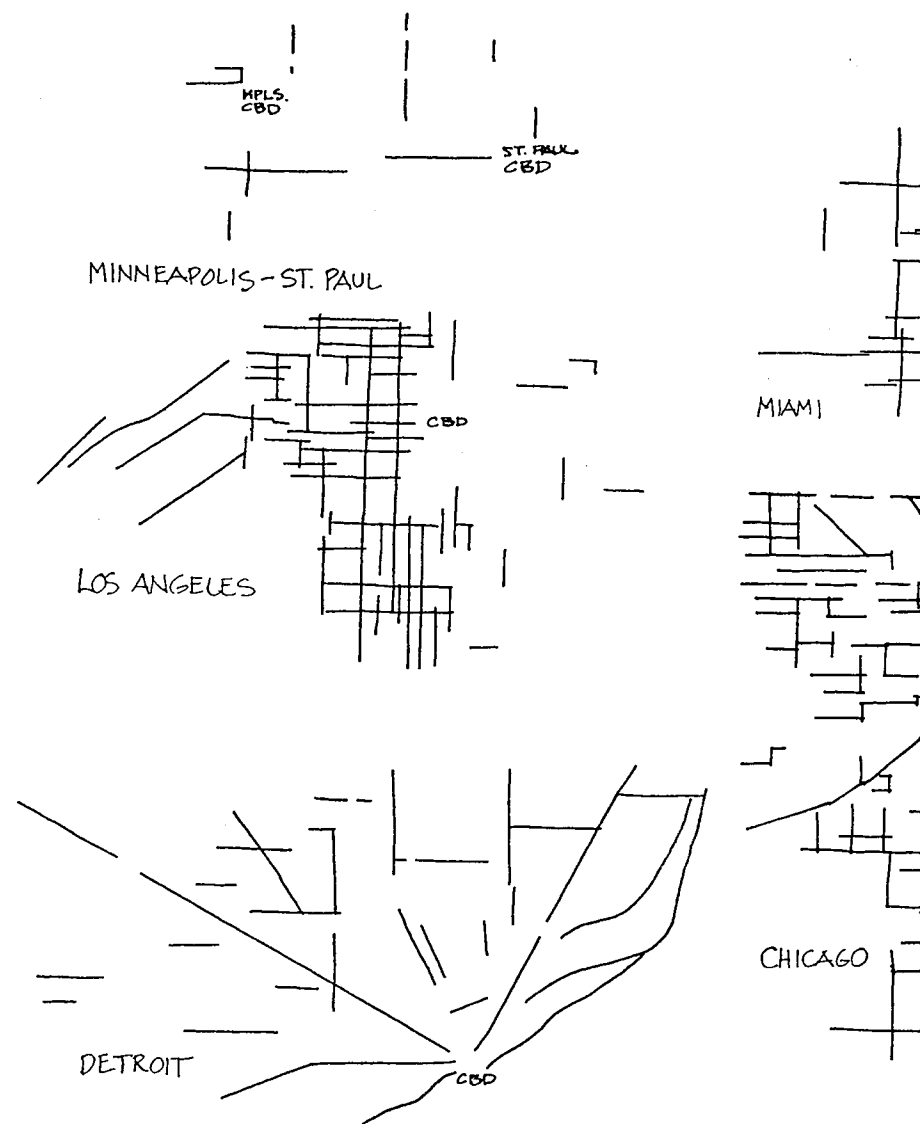
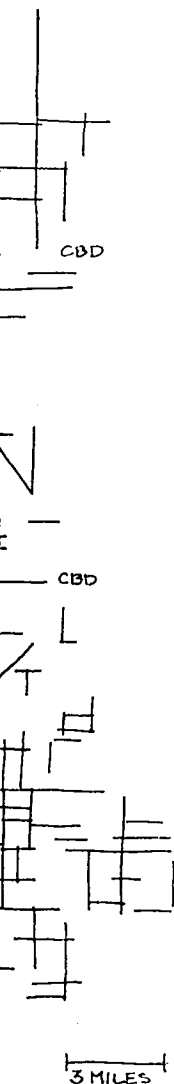


Figure 1 Commercial strip patterns in American cities.



creased the land values of property along the route itself. At the same time, the moderately dense population that lived along the streetcar line created a demand for commercial space. Residents fled from the street; their houses [were] converted to stores and offices or demolished to make way for new commercial construction. A few remaining houses were converted to rooming houses or apartments. Strips as they developed tended to be very shallow, at most 200 feet deep, and usually 100 feet or less. Frontage was continuous, with occasional breaks for free-standing houses. This type of strip development occurred between about 1890 and 1930.

The widespread use of the automobile after 1930 made for a drastic change in strip form. Not only was a route needed for the automobile but a parking space had to be provided for each shopper. Thus the form could no longer be compact. The depth of the strip was greatly increased, often to 400 or more feet on each side to allow on-site parking and servicing by large trucks. In the case of old strips, traffic lanes were widened and sidewalks were narrowed to accommodate the automobile. Sometimes sidewalks were simply deleted. Structures were no longer built directly adjacent to each other, but became free-standing, most often set in the midst of a parking lot. The speed of the automobile also caused a change in advertising: signs became far larger and more demanding of attention—the billboard and the revolving, flashing sign first appeared in the automobile era. Some of the old streetcar strips have partially adapted to the automobile and are relatively successful, but most have suffered economically. Because of the enormous space demands, the true automobile strip appears only in areas that have been developed more recently. But some are growing in older residential districts, following the same patterns as the earlier streetcar strips. Homes are converted to business uses or are torn down to make way for larger buildings. Well-to-do suburbs have resisted the process through zoning controls that confine the strip to some marginal location or to some other town. But purely residential use of the arterial frontage is difficult to maintain. Strips appear to grow wherever they find some foothold in the crevices of public regulation. Without intervention, we can expect the public face of the American city to become more and more like that of Los Angeles.

Arterial streets are an obvious necessity, and strip developments grow for good reason. Automobile-oriented businesses, in particular, have been attracted to the strip—automobile sales and service businesses, drive-in restaurants, banks, and motels. But many businesses of other types that cannot afford to locate in the urban centers have also chosen strip locations. These provide good automobile access (unlike many urban centers, the older ones in particular), and taxes, rents, and land values are typically lower. Each business on a strip has a good opportunity of being seen by motorists; moreover, shoppers are made to feel they are parking at the door (though they may walk 200 yards through parked cars to reach the

entrance). Strip locations are made for impulse buying, for consumer goods, and for single-purpose stops. Growth is easily accommodated: individual additions can be made at any point or the strip as a whole can extend lengthwise. The location of a new establishment is no longer constrained—it has many options. Controls on site development are frequently very lax; usually no master plan or design review; signing ordinances are few; zoning restrictions are few; and typically the few existing regulations are poorly enforced. In short, the strip, along with the low-density zone, permits the greatest entrepreneurial freedom of development in the urban environment in the United States.

These advantages have created corresponding problems. They have generated destructive levels of automobile pollution and noise. Advertising has become garish and competitive, distracting and endangering safety. Strips bear no relation to their context; they cut any residential area through which they run. Natural or historic districts through which they pass are obliterated: strips look like scars wherever they occur, distinguished only by the decade in which they were built. Strip businesses themselves are usually unorganized and uncoordinated; and few outsiders identify with such areas, thus making it difficult to gain the necessary support to improve them. Nevertheless, a complaint about the quality of the strip environment is common.

Subjects of interviews have complained:

There is no place to park, yet the parked cars are ugly. The streets are dangerous. Cars turning in and out are dangerous and annoying. It is unsafe to walk or to cycle along it. It is difficult to service the establishments and their customers.

The strip is too noisy. The air is polluted with fumes. There are too many cars. It is too wet, too cold, too windy, too hot. It lacks shade. There is too much litter. There is too little light at night and yet too much glare. There are no shelters, no public rest rooms, no telephones, there is no place to sit and relax.

Foot pavements are wet, broken, or just missing. One cannot control small children easily. There is no accommodation for the handicapped.

There is a lack of planting, of natural areas. There is a clutter of signs, wires, ugly buildings and chaotic development. The street lacks identity. There is nothing interesting to look at. It is hard to identify one's way.

The fronting activities lack variety and interest. They are too crowded. There are gaps in the frontage and at times the strip is deserted.

handling heavy
and change are
at the side or rear,
on of any particu-
choices. In addi-
loose. There is
ances are weak;
ing controls are
-value industrial
any large-scale

ems. Strips have
and congestion.
ing to the point of
, and they blight
storic features of
ok quite the same
which they were
socially or polit-
making it difficult
theless, popular
commonplace.¹

are congested; the
to cross the street,
without disturbing

pleasant smells. It
too much dirt and
ere are no benches,
e to sit and talk at

carry packages, or
r the aged or the

signs and overhead
entity and charac-
y things or to find

oded or too empty.

The list may be imprecise and internally conflicting, but it is a strong condemnation. It is not surprising that the life span of businesses on most strips is relatively short. Real estate brokers who were interviewed in the course of this study said that they do not advise businesses to invest in strip property if they want long-term economic growth or value. Urban centers have proved to be far more stable for business. One realtor felt that the "people traffic" at a center was an essential ingredient to business success. Some large companies such as E. J. Korvette typically locate on strips but plan on a ten-year maximum life for each store. Drive-in eating establishments plan on a similarly short life span. The Massachusetts State Department of Commerce advises communities to control or prevent strip developments, because it has been shown that strips lead to the decline of the central shopping areas and at the same time disrupt the environment through which they run. Their unplanned nature causes many diseconomies. But they are ideal for many low-capital, new, or "short-life" businesses. And so they continue to grow.

Local planning agencies attempt to stop strip development by ceasing to create new strip zones or by rezoning existing strips to residential or institutional uses. For example, the Boston Redevelopment Authority has rezoned Blue Hill Avenue, an old and failing strip, into residential use, and it is attempting to consolidate the remaining commercial activity into centers. But this is a slow and painful process, and it is hard to find substitute uses. In planned new communities, where the commercial strip has usually been banned, the disposition of arterial frontage is notoriously difficult. It may be parceled out to large institutions, tall apartments, or civic buildings, but more often [it] must be devoted to costly, unused, and rather monotonous belts of trees and lawns. Meanwhile, the commercial strip reappears just over the city line. There has been much popular criticism of the strip, but little of that criticism explains how to improve it. Innovative modifications to the miles of existing strip are urgently needed. What is more, if the strip reappears so persistently, it may represent an important function that must somehow be given a more humane form.

The Venturis, in *Learning from Las Vegas*, proclaim that string of gambling casinos along Nevada's Route 66 as the Apotheosis of the Strip. This is a proclamation of love, but it is underlain with hate. The cultural elite may look down upon the strip, but the Venturis see a new landscape, faultlessly performing its function. Admittedly, the function is "basely commercial."

On the contrary, Las Vegas is no new function, no new landscape at all. It is the further extension of vehicle-dependent Main Street, a form now at least a century old. Since ordinary Main Streets are common enough, it is worth the effort to see how well this further extension works, and also to consider if its function (in this case the thrill of gambling, the brief extravaganza) could be better served in other ways.

The Venturis do not attempt the latter, nor do we, in how it really works for the people who use it is still a legitimate question. Behold! We find that Highway 66 is ill-made for the turn of the century cars—that drivers can rely little on directional signs, but on a sense of where a lot begins (and their stereotype of highway maneuvers in it) to carry them through. Are they not confused by all the moving lights, as many people are on other strips? The spindly light poles and painted parking lines are weak compared to signs, and the buildings shaped as signs, must be relied upon, and building-signs are interesting enough. They compensate for the contact with people and things that has been lost. The potential of the commercial sign have been well-argued before. Yet in Los Angeles, signs perform only moderately well. They are far short of the impact. Moreover, a landscape that depends on a single cluster of signs is surely at risk. "If you take the signs away, there is no place left."

The transition between inside and outside, between street and building is brutal: "a zone of rusting beer cans," "ill-kempt backyards" gives poignance (to the interior patios) is the vivid, recent memory of hostile cars poised in the asphalt desert beyond." The brilliant to lack some quality even for the people who pay to enjoy it. It is not it function for those that work there, or who drive by on the way to the airport? To look at a place with open eyes, in order to learn from it is admirable. That does not require us to become ecstatic about it.

The arterial streets are the most traveled routes in the city. Improvement could enhance the public image and the social value of a much wider surrounding district. In some measure, they are the archetypal public places of vast regions. They also offer an opportunity for new development to take place without the need for settlement.

Strips can provide an important way to structure the growth of city and region, since street networks are easier to construct than other urban patterns. They are the entry ways to the inner city centers. The sequential street experience has grown steadily in importance, as daily trips have covered larger and larger territories. They apply solely to automobile drivers; arterials are also the main routes for public transportation. And one must certainly consider the increasingly persistent species, the pedestrian, and his reappearance as the bicyclist. Moreover—and this may seem wildly utopian—the possibilities along these arterials might become the places for public life that streets have served us in the past.

We possess hundreds of miles of these streets. What should we do with them? If we had the power, would we abolish them and build another to be built? One way to look at these questions is to consider the effects of the spatial form of the strip on the people who act

n most part. But
imate question.
ng in and out of
t must use their
ow one usually
used at night by
In the day, the
clues. The giant
upon. The signs
ate for the direct
entialities of the
as Vegas those
f their potential
e for its identity
ace."

strip and desert,
ksides." "What
memory of the
iant strip seems
. And how does
the way to the
from it, is surely
ut it, however.
the city. Their
al and economic
ure, these strips
so represent an
disturbing local

cognitive image
conceptualize than
important urban
adily in impor-
s. This does not
atural channels
der that aston-
bearing cousin,
n—certain loca-
blic life, as city

hall we do with
nd never allow
to consider the
ually use them.

It is probable that strips have continuing useful functions, since they constantly reappear when suppressed. More to the point, they are on our hands. So it is also useful to see how strips might be designed and managed to better satisfy the needs of all their users.

The purpose of this study has been to find a legitimate role for the strip, to extend its useful life where it now exists, and to prevent it from damaging the district through which it passes. In particular, we hope to apply the findings to areas of new growth, where a special opportunity exists to manage the strip from its birth. Emphasis will be placed on hitherto neglected qualities that have an immediate impact on the way arterial streets are experienced and used. These will range from safety and comfort to questions of information and sensuous delight. The focus is on arterial streets of mixed traffic, where there are mixed and relatively intensive uses, primarily commercial ones. In formulating recommendations, some unified control will be assumed of those aspects of fronting uses which directly affect street function: access points, the intensity of motor traffic or of pedestrians generated by an activity, parking, signs and views, and the activities taking place on sidewalks or in spaces directly abutting them. In some cases, the agency managing the right of way might also control (initially or even permanently) the fronting uses.

Case Study: Main Street, Waltham

To better understand a typical strip, its form, its use, and its management, it is useful to look at one. Main Street in Waltham, Massachusetts, offers a good case. The strip section of Main Street begins at the edge of the old town center on the village green and runs west for over three-quarters of a mile (figure 2), passing through the middle of an old residential area of multi-family homes. The commercial success of this strip is partly evidenced by the heavy traffic, both pedestrian and vehicular. People walk to the strip from within the neighborhood, and many more drive to it from throughout the community and even surrounding towns. A large amount of the traffic is not strip clientele, however, but is en route to Route 128, a circumferential regional highway. The first impression of congestion intensifies the longer one stays. The traffic noise and the polluted air become almost unbearable after an hour. The visual impression is one of chaos. There are structures of many types and eras: an old white frame church, a shiny six-story office building, a row of small stucco and brick shops dating from the 1920s, a new A&P supermarket, new aluminum and glass shop rows, a "Finnish chalet" church, a "Southern classic" library, several gas stations and drive-in restaurants, and even a colonial house of some historical significance. Besides this last, the only other expression of history is the single stone marker, somewhat obscured, which commemorates the delivery of artillery to General Washington during the revolutionary siege

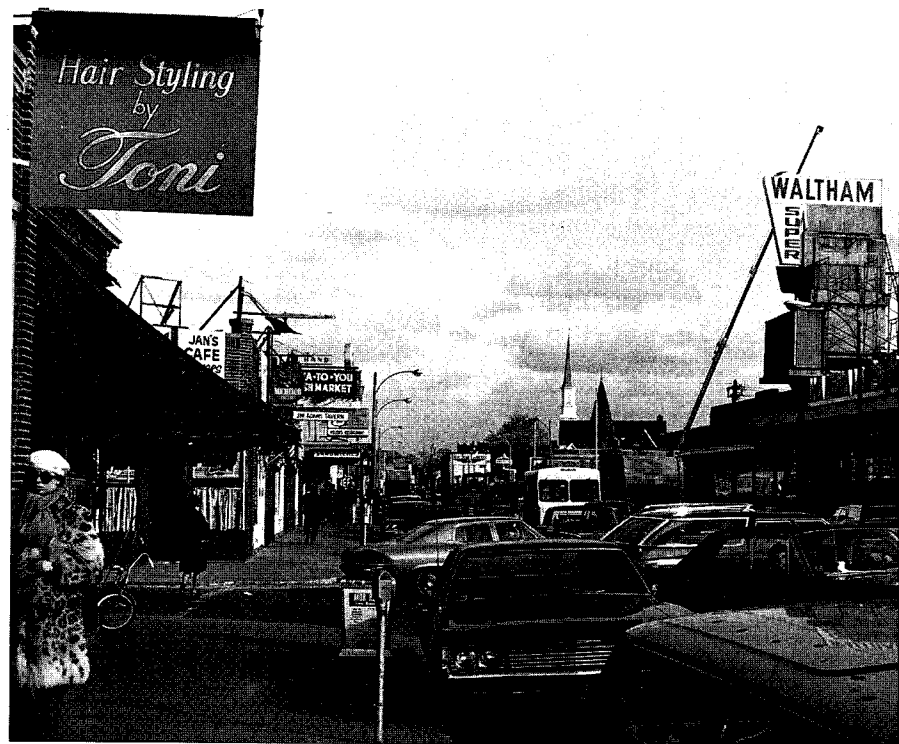


Figure 2 General character of Main Street.

of Boston. This is the old main route to the West. In several cases, the conversion from house to store is still evident. There are round, spired, and barn roofs [and] buildings of stone, brick, glass, wood, or concrete in all colors.

The range of activities is also large: barber shops, electronics shop, supermarket, beauty salons, variety stores, gas stations, a drive-in hamburger stand, liquor stores, doughnut shops, cleaning, laundry, submarine and pizza shops, bank, hardware supplies, shower shop, drug stores, book and novelty stores, hardware store, real estate office, printing shop, medical offices, boating and marine supplies, auto sales and repairs, apartments, post office, churches, school, library, political shop.

Activities have varied relations to the public street. Most buildings run to the property line and provide a standard door slightly inset, yet many are set back from the sidewalk. A restaurant provides a small eating area next to the sidewalk. Some parking directly in front of the establishment, often for cars. Others have vast parking areas between the building



ral structures the
are peaked, flat,
e, plastic, metal,

ish market, elec-
es, taverns, gas
ghnut shop, dry
ndicrafts and art
y shop, clothing
op, professional
pair, houses and
al office, bicycle

Most structures
entrance, often
. A drive-in res-
. Some provide
only one row of
g and [the] side-

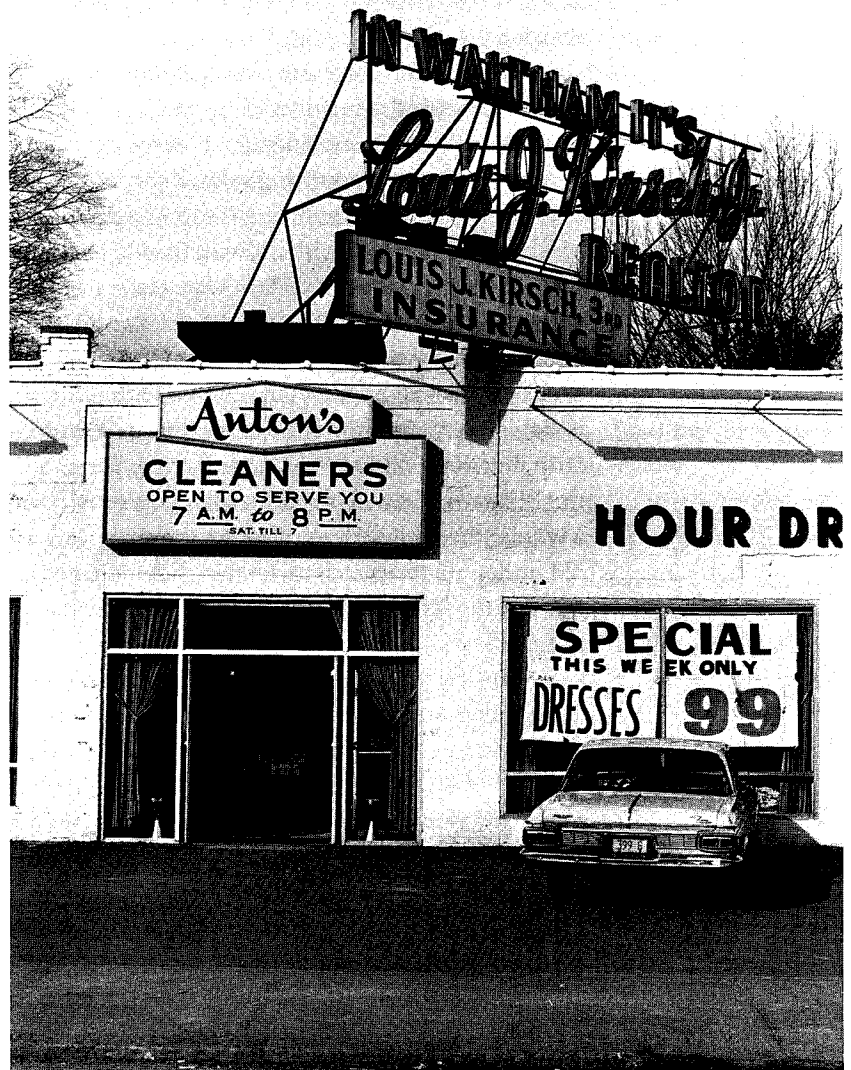


Figure 3 Signs dominate the typical strip.

walk or are located in the middle of a parking lot. Still a small space between building and sidewalk, apparent reasons.

Signs of innumerable sizes, shapes, and colors reach some supporting structures. They project from buildings or roofs, hang from awnings, or occupy facades. Many project behind windows announcing sales. Except for some wind objects serve as their own sign—some sacks of potatoes, apples, and a small tower identifying the old trolley yard through use. Signs which locate distant features are present but difficult to find amidst the clutter of other forms. Although the sign is a short distance away, there is no view of it, nor any other sign of its presence. Nor is the traveler oriented within the strip itself. The strip is similar to the last and the next. There are glimpses of houses in the strip, but even this appears anonymous. Here, on this highway, one might be anywhere. Only three elements provide orientation: the white church steeple, the single large tree remaining from the old trolley station watch tower (since demolished). The visual clutter and noise of the strip add further confusion to the scene—moving vehicles, buses, bicycles, motorcycles, and pedestrians.

The juxtaposition of the strip and the solid residential area immediately behind is jarring. Chain-link fences, parked cars, and the arrangement of parking lots frame one's view of large old homes on the other side of the strip. A gas station and its appurtenances mark the entrance to the more commodious residential streets; the station presses against the more dignified apartment house. From within the residential area one is also aware of the strip. Its untended backside reveals children's play equipment, conditioners, garbage bins, and storage yards. The fumes and noise of the strip penetrate even farther into the neighborhood—even where they cannot be seen, one can smell and hear it.

Attempts to alleviate the harshness of the strip are few and far between. Small evergreen shrubs, often in pots, are a frequent sight in small patches that have found no other use. Shriveled, and dead, they only affirm the destructiveness of this environment. Even the few large imitation plants of plastic, which survive the fumes and noise with dirt. The supermarket parking lot, with its fence, flagpoles, and shrubs, tries to be beautiful and dignified but in fact only adds to the barrenness.

There are attempts to provide for the physical comfort and convenience of strip users. Canopies occur in a few locations. They provide rain protection, but do little to shelter the pedestrian from wind-driven rain; they are high for their overhang and give little shade. Most of them make another visual intrusion on the street. The awnings and canopies provide much better protection from wind, cold, and

others provide a
ly for "esthetic"

r up on cumber-
s, stand on poles
paper signs hang
ow displays, few
two church stee-
at is no longer in
nfrequent, diffi-
Charles River is
indication of its
lf, for each block
using behind the
storic street, one
on to the strip as
naining, and the
sible activity and
ing cars, trucks,

idential area im-
and the macad-
one block or less
ry to one of the
s against a large
ntial area one is
mneys, air con-
and traffic noise
n the strip itself

evident but in-
tent remedy, set
dying, isolated,
Elsewhere there
es but are caked
g, [and] clusters
y emphasizes its

ort and conveni-
y provide some
wind and wind-
side protection.
The inset door-
d rain, although

they accommodate few users. The supermarket has provided the only bench on the strip at one of the bus stops. However, it is not well used. Typically, people waiting for the bus stand and put their groceries on the bench. At first glance this seems puzzling. But observation reveals that people must stand to see when the bus is coming. From a seated position the bus is not visible for more than a block because of the heavy traffic. Another convenience provided by the supermarket is a terra cotta bas-relief map of the city. But this contains little information. An inadvertent convenience is provided by the supermarket, since it is the common practice for shoppers to wheel loaded shopping carts out of the store to their parked cars and abandon them; these carts are then put to use not only by supermarket patrons but by anyone with packages. Other support facilities along Main Street are phone booths, mail boxes, and trash cans, all of which are well used. The ill-formed trash cans are paid for through the advertising of local merchants which appears on their sides.

A comparison of the present street with the way it was almost a hundred years ago (figure 4) is both shocking and saddening. It was a

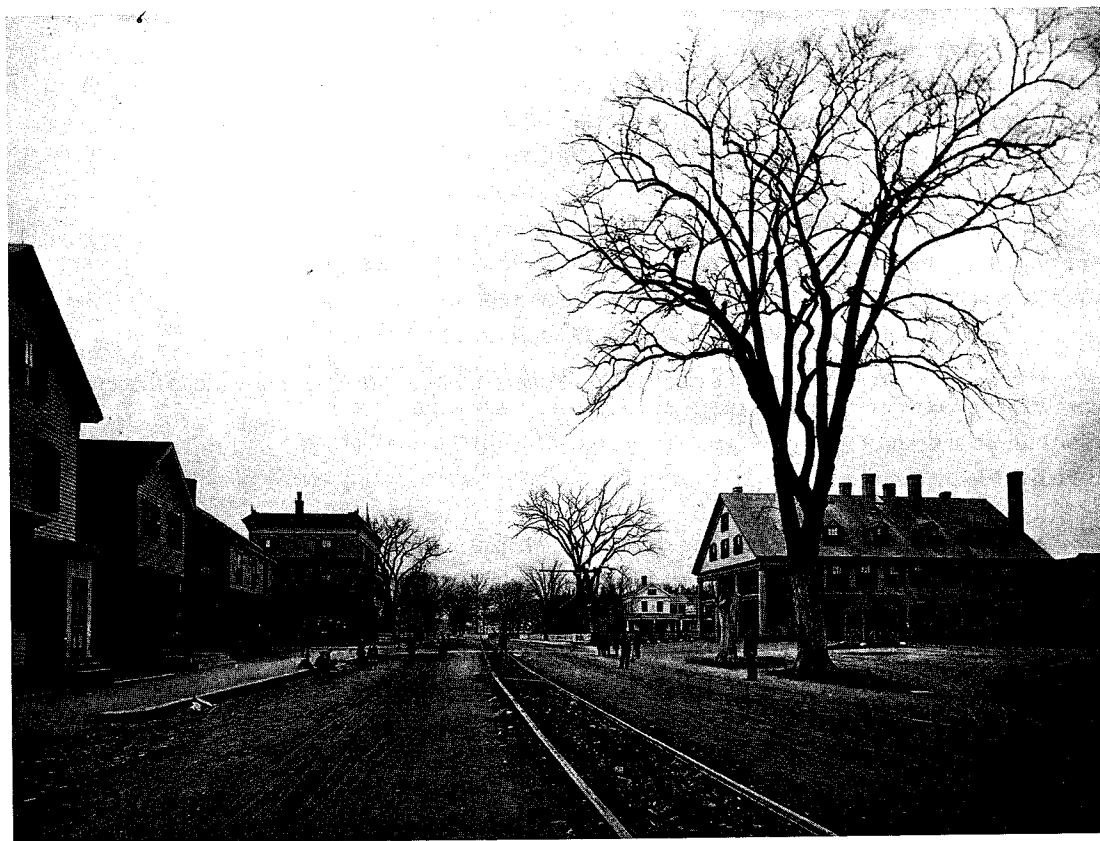


Figure 4 Main Street in 1886. (Courtesy of Waltham Public Library.)

quieter street then, yet it accommodated a variety of activities. The structures were simple and modest. Overhead protection and porches were common. The structures and spaces were varied yet related in form. Large old elms overhung parts of the street. There was little change. A streetcar line runs unobtrusively down the middle of the covered, unpaved street. The elms are beginning to be cleared. The one in the foreground has a damaged trunk. A house has changed its first-floor front to a store. The transformation of a rural street into a highway into a commercial strip has begun, but an easy comparison of the look at the same street today can only confirm our failure to maintain the quality of our everyday environment.

Users of the Main Street Strip

As we watch the street, we see people—

Passing through in cars, trucks, bicycles, motorcycles, taxis,
Walking, running, standing, climbing, sitting, lying down,
in wheelchairs or on crutches.

Looking for destinations,

Getting in or out of vehicles, parking and deparking them,

Window shopping, buying, selling,

Using phones, mail boxes, trash cans,

Socializing, playing, "hanging out,"

Cleaning, repairing, constructing,

Policing,

Waiting, resting,

Taking care of children,

Carrying parcels, delivering.

How can we classify these users of Main Street, and how does the environment suit them?

The Passing Driver

To the passing driver, the strip is a place to drive through, not a place to stop. Hence his judgments are largely negative. The driver deals constantly with turning and entering traffic, with stop signs, with jaywalkers, trucks, and buses. He is presented with dangers and sudden decisions, and faces long waits of idleness. The road surface may be pitted, or encumbered with ice and snow. He cannot easily see the traffic signals, or the name of the street, or be sure he will make his next turn. He may like to know the time, or see the traffic ahead, or even what the weather will be. Road repairs, passing trucks, and people entering their cars all encroach on the

ties. Signs were
th seating were
l in material and
ere also signs of
ddle of the un-
ared away, and
e has converted
l New England
r still lingers. A
to improve the

s, buses,

es this environ-

on his way to
ones. The driv-
stop lights and
d with sudden
lling cars. The
ow. He cannot
sure where he
something about
pairs, unload-
e traveled way.

The noise is incessant; the air is heavy with fumes; the numerous metallic reflections hurt his eyes.

The commercial activity along the way and the people on the walks may be interesting to watch but are difficult to see because of the crowding vehicles. There is much less expression of what is going on inside the buildings: the strident signs and the bright-colored buildings are actually quite standardized, for all their random arrangement. The goods and services available can hardly be seen from the passing car. The vital public utilities are invisible or, if visible, do not explain their function. Natural features—trees, rivers, rocks, hills—have been obliterated. The history and the future of the place are indecipherable.

There is no coherent sequence of space or motion or view, such as might be displayed to someone in a moving vehicle. There is rarely any long view, or only a formless one. One is isolated within a metal shell, which dulls sight and hearing. There is little chance to stop to talk to someone on the street, or in another car.

At night the unpleasantness mounts. There may be fewer entering cars and so less traffic interference. But the high street lights and the oncoming headlamps glare in the empty darkness, surrounded by a chaos of lighted signs, moving and flashing in odd ways. Most of them refer to absent activity. Some stores, internally lit but empty, reinforce the loneliness, as do the brightly illuminated gas pumps. Only the occasional entertainment spot, lunch counter, variety or liquor store is alive, and this activity is internal, largely unseen.

For the motorized sightseer, the scene is fearfully familiar. It is Anyplace—displaying the same signs, the same services, and the same chaotic forms he has seen on any commercial artery in the nation. Does anyone ever take a tourist out of his way to see a commercial strip, or fail to apologize if he must drive down it? It may seem ridiculous to consider that these workaday places could ever attract a sightseer. Yet tourists almost invariably use strips in entering the city; they stay in motels along them, they pass through them in taxis, buses, or cars, and then go elsewhere to see the sights. To imagine them as tourist attractions is one test of their quality.

The Motorized Shopper

One may insist that this is a working street, and that it cannot be made pleasant for passersby. Still, lives are spent here, and the street does not work even in its most "practical" sense. Strips are built for the shopper on wheels, and yet he suffers from the same disabilities that the through driver endures. Moreover, he has further difficulties.

He must locate his destination from some distance, see just where to turn in, and be able to do so easily. Commercial signs are designed for that

purpose; however, they do their job inefficiently, and t competition. The actual motor entrance is often surprising addition, the shopper would generally like to know whether tion is open, whether it is crowded, where to park, and (par a transient buyer) something about the quality, price, and ty and services. Only some of this is visible.

He wants to park nearby, preferably in direct relation the curbside is still the most favored location. But it is a scarce commodity. Getting out of the car is a trick in itself it has to midst of traffic or up against another car, or if one is crippled the car, there are packages to carry, pets and children especially as one goes through doors, or across the street. one may leave the dog (or the children) shut up in the car, the midst of the noise and fumes.

It may be raining, cold or hot, windy or glaring, as on car to building. The pavement may be wet, muddy, or icy. steps or high curbs to be overcome. Can the now dismounted walk to nearby establishments, or are the sidewalks discontinued buildings scattered? Is there any provision for getting a head the car? Is it safe to cross the street? Is one safe from assault night, and the car safe from vandalism? Are toilets, alarm mailboxes, drinking fountains, medical aid, storage lockers essential public facilities within easy access and clearly marked the motorized shopper, the strip falls short of being a good activity, although convenient access by car remains its advantage.

Bus Passengers

Other shoppers come by bus, and have problems of their own they must be able to identify their destination, but they have abilities. They can only see sideways; their destination may nearest stop, as well as before it, and so they overshoot. What taking them? How long before their stop should they begin door? For anyone but an habitual rider, getting off a bus is u of some anxiety. But for any elderly person, or someone crowded with children or packages, the act of moving in a lurch and descending its steep steps, is patently difficult. Once a passenger faces the same problems of obstacles and the wear pedestrians do.

When the transit shopper chooses to leave the strip, t ages to carry, the bus step is high, and the curbside may be cars, water, snow, or mud. Waiting for the bus may be p there is no certain knowledge when the bus will come, nor a

they face fierce
gly obscure. In
her his destina-
ticularly if he is
ype of its goods

to the door. So
ce and wasteful
be done in the
ed. Once out of
to manage—
Alternatively,
imprisoned in

ne moves from
There may be
unted shopper
inuous and the
avy package to
lt, especially at
s, telephones,
ers, and other
rked? Even for
setting for his
s fundamental

rn. Like others,
ve special dis-
come after the
here is the bus
moving to the
usually a matter
rippled or bur-
rching vehicle,
off the bus, the
ther that other

here are pack-
e blocked with
rotracted, and
ny easy way to

see if it is coming. There is usually no place to sit, or to find shelter from the wind or rain. Nor is there any clear information on the scheduling and routing of the buses—perhaps not even a clear marking of the bus stop itself. Looked at another way, the vacant minutes of waiting are a wasted resource—a time when people might be amused or informed, might meet each other or call a friend, hear some music or take a social drink, rest by a fountain or in a pleasant shade. Since people may spend considerable time waiting for buses, this might easily justify a shelter or other special facilities. What bus riders normally get is a patch of exposed sidewalk and a narrow passage between two parked cars.

Cyclists

There are other means of transportation, of course, although little attention is paid to them. Cyclists are dangerously exposed in moving traffic and are excluded from the sidewalks (figure 5). The suddenly opened door of a curbside car is an ever-present danger for them, and for their part they present a threat to the pedestrian and make driving more difficult. Riding in the open, they are exposed to all the natural inclemencies plus the noise, the fumes, the spattered mud. A sudden hole can be much more dangerous for them than for a driver or a man on foot. The parking of a bicycle where it will both be safe and not block the movement of others is no trivial question. Cycle tracks and cycle parking need to be a matter of conscious consideration in strip design.

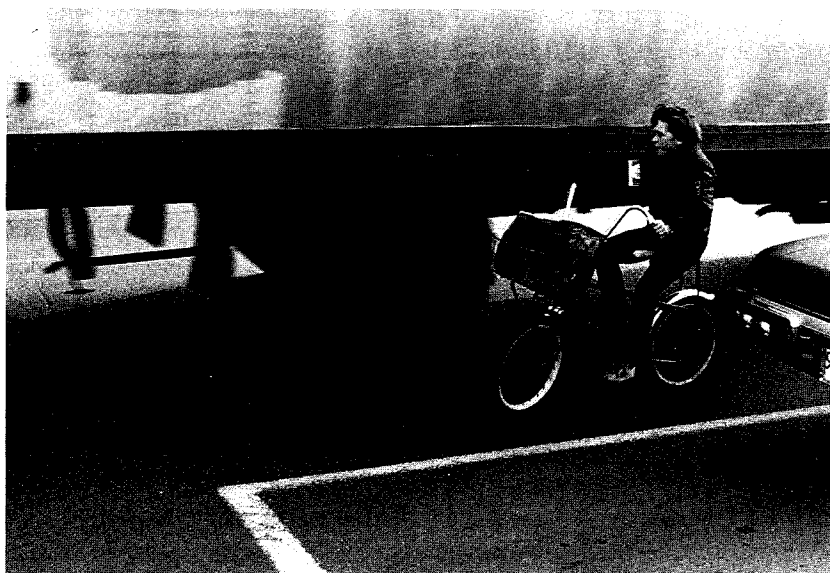


Figure 5 Cyclists are dangerously exposed in moving traffic.

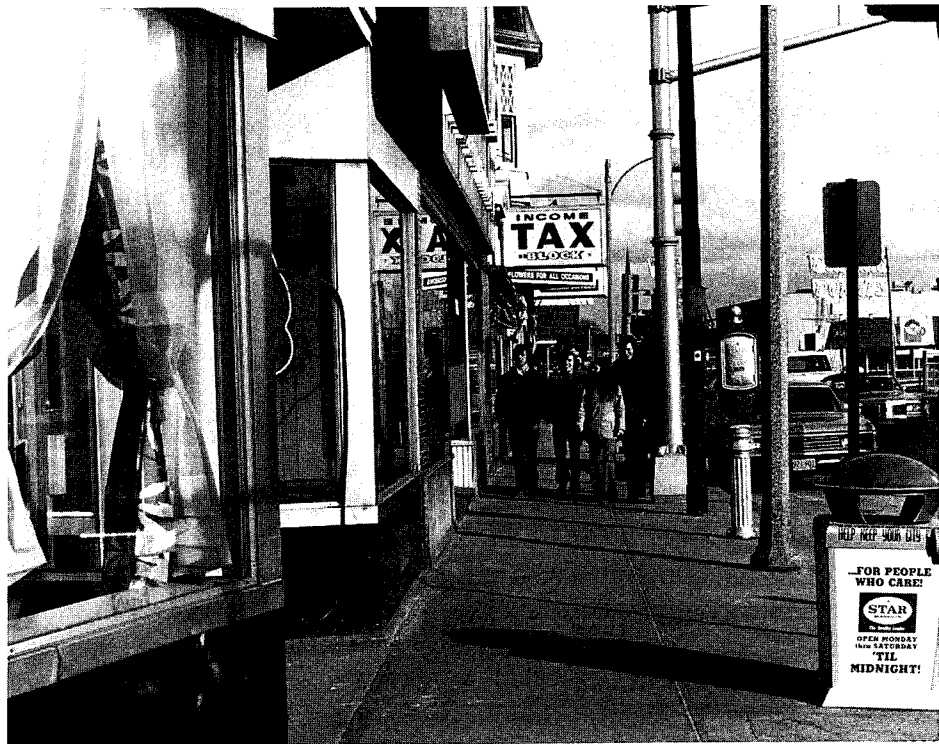


Figure 6 The group of passing teenagers exclaim: "Spread out—I'm crowded!" "I am spread out—I'm practically in the street!"

Walkers

Walking along the street, the pedestrian is assaulted by all influences of heat, glare, rain, noise, fumes, wet or broken pavement. Threats of entering cars and bicycles, the danger (real or fancied) of being hit (figure 6). Sidewalks are usually too narrow, and tree plantings and parked cars become annoying barriers, especially to people with children or parcels or to mothers with strollers and buggies. In places where the sidewalk simply disappears, giving way to a driveway, gas station, auto repair shop, or simply mud. Crosswalks are often unmarked and much too narrow, and people jaywalk everywhere. For all this, there is some compensation in the intrinsic interest of the visible activity, the chance of doing a quick buy on impulse, or the opportunity of encountering a friend (a place to talk and be heard). Many walkers are children coming home from school who dart across the street. Pedestrians carry loads in carriages, or convoy infants, or struggle along on crutches. Traffic jams and puddles can become formidable obstacles. The strip is not very safe for the person on foot, and it is forbidding to the blind or to the person in a wheelchair.



Street People

Not everyone is just moving through, or coming to shop. The strip is a preferred hangout for teenagers, a place where they can gather, talk, and watch the world pass. They need a place to be at the edge of the action and close to food, where they can see and be seen but not be directly in the public way. It should be a place that is securely their own territory, that they can mark out and decorate, a sheltered place, provided perhaps with telephones, food services, places to sit, lie, read, watch TV, play music or games. There could be computer printouts here, exhibitions, notices, and other sources of information. But what they usually get is a cramped street corner, or the narrow space in front of a store.

Even more neglected are the older men who stand on the street corners, or lean against the walks, in pairs and alone. Unemployed or retired, uneasy at home, there is little in the street to fill the emptiness of their time. The automobile has forced the strip to abandon many of the social functions of the old public street. Other people, also, might use the strip if it were not so uninviting: children for their play, housewives for their free hours.

Workers

People work along the strip, too. They need good access and parking just like the other users. Shop owners need inexpensive space, storage and delivery room, easy access for their customers, and a chance to be seen. These are the attributes that the strip realistically offers; these are the reasons for its existence. But, as individuals, workers might also prefer quiet and pleasant surroundings and many of the services described earlier. Here the strip fails them.

Public employees work along the strip—maintaining and repairing its pavements, utilities, and structures. They have too little room to work in, often impede traffic, or run the hazard of being struck down. There is usually no place to store materials or wastes or machines; no place to pile the snow. The noise and disruption caused by repairmen are the subject of constant complaint, and they must feel that social disapproval. The surfaces they deal with are hard to clean. Things are too high up or are buried underground or lie in the paths of others. It is difficult to find the utilities they seek to mend. New work is often quickly vandalized.

Still other service agents are patrolling the strip, or are charged with protecting it in an emergency. They must be able to reach any threatened point quickly, [and] to monitor the street from on foot, from a car, or from some more remote location. Traffic controls must respond quickly to traffic changes. Effective night-time surveillance must be possible. Ambulances, fire trucks, and patrol cars must be able to move with speed.

Neighbors

Sometimes the strip runs in splendid isolation through w Wild creatures are its only neighbors. Then the rear lots s begin in that completely inattentive way peculiar to the scape. More often, there are human neighbors behind the in nearby industrial plants, families in residential neigh suffer from its presence: its noises, pulsing lights, and fu see the "backside" of the strip, the service doors, the c facades, the parking lots, the cyclone fences, and the c waste that accumulate along the banks of the commerc chants and customers attend to what fronts along the ignore the land behind. The strip is somewhat like a giant whose audience is unhappily seated behind the scenes.

When the strip is a major artery with side streets flow neighbors suffer further difficulties. The heavily traveled ous and annoying to cross; neighboring residents are caughtion when they enter or leave their homes by car or bus. T stores are located there; their children go to school along its hangouts. So neighbors, in their turn, become direct us

One of the strip's advantages should be the way in form brings services within easy walking distance of m residents than any focused center could do. So a strip sh reach along its entire length, have frequent services, mee convenience outlets, and be a route along which it is pleasa tive to stroll. The strip need not pass through the city as if t land.

Demonstrators and Celebrators

There is still another historic use of streets, now rarely seen strip. This is their use for demonstrations and celebrations: dances, street meetings, parades, funerals, fairs. These ac largely confined to the main streets of the city or town cen need a continuous, traditional route, safe to traverse, with provide a symbolic destination, and room for an audience. There should be places to gather to hear speeches or music, be decorated, a setting which lends impact to the event. dramatic if it can see itself (due to curves and slopes along example). Participants can sense the power of the day. Pro for public ceremonies may seem strangely remote from the strip; yet these commercial arterials are the principal public urban regions, even if they presently provide no space public "room."

Management of the Strip

In so many ways, then, the commercial strip fails its users. Some of these deficiencies are specific to particular kinds of people, but many (even most) of the faults are felt by almost everyone who ranges along them. They can be summarized under a few general headings. A good public street will:

1. *Support the Normal Behavior of People:* It will allow them to move and act with ease, to have access to what they need, and permit them to behave, if they wish, in a sociable (rather than a merely task-oriented) manner.
2. *Inform Them:* It will communicate time, locations, function, the presence of other people, history, local ecology, the future, public rules, and much else in some clear and interesting way.
3. *Promote Their Health, Comfort, and Safety:* It will protect them from an adverse climate, noise, pollution, danger, and other types of stress.
4. *Engage and Delight Them:* It will provide visual rhythm and continuity, express natural features, dramatize light, form, and view, create sequences, exploit the esthetic potential of common street elements (even of utilities, for example).

These general values take on concrete meaning only when one considers how specific people actually use, attempt to use, or might use the strip. We have attempted in the previous section to convey some of that meaning on Main Street. These values have implications for a wide range of street elements, but it appears from those earlier descriptions that there are some specific elements and issues (actual or potential) which are particularly rich in needs and possibilities. These include the following:

1. *Provision of Access for Non-Motorists*, such as pedestrians, dismounted motorists, public transit riders, cyclists, the handicapped, children, and mothers, through the design and management of the sidewalk, the cycle way, the doorway, and the curb to meet their needs.
2. *Control of Air Pollution, Noise, Heat, Cold, Wind, Rain, and Glare.*
3. *Creation of Convenience Clusters* that provide for basic human needs in some focused locality, such as a bus stop, and which might expand to become social meeting places.
4. *Communication of Function, Time, and Place*, creating an informative and pleasant sequence to pass through, in which destinations can easily be located and entered. Public and private signing, for example, can be designed as a total system.

Table 1

Street Element	Controlling Groups
Street location and pattern, width, posted speed, gradient, curves, access rules, parking, materials, drainage, construction details, metering	Dept. of Streets and Traffic, Commission, Urban Renewal Authority, Dept. of Public Works, Dept. of Transportation (Fed.), Highway Dept.
Utilities	Water Commission, Telephone Company, Gas Company, Electric Company, Fire Dept.
Height/bulk of structures, setbacks, spacing	Building Dept., Board of Planning Commission
Quality and style of built form, building materials	Individual Builders, Owners, Developers, Historic Commission, Municipal Building Dept., Federal Institutions, Design Boards, Manufacturers of Materials.
Street furniture, rest rooms, shelters, etc.	Dept. of Streets and Traffic, Dept., Public Works Dept., Manufacturers
Curb design, walkways, crossings, bike paths	Dept. of Streets and Traffic, Owners, Dept. of Public Works, Dept.
Service and loading areas	Planning Commission, Dept. of Streets and Traffic, and Traffic, Building Dept.
View protection	Historical Associations, Planning Commission
Tourist information and services	Chamber of Commerce, Dept. of Streets and Traffic, Public Works, Travel Services
Public signs	Dept. of Streets and Traffic, Federal Highway Dept., State Agencies, Parks Dept., Fire Dept., Police
Private signs	Individual Businesses, Owners, Companies, Building Dept., Appeals.
Art objects	Parks Dept., Civic Association, Owners, Institutions, Planning Commission

Street Element	Controlling Groups
Lighting	Lighting Commission, Parks Dept., Dept. of Streets and Traffic, Property Owners, Businesses.
Landscaping, natural elements	Parks Dept., Dept. of Streets and Traffic, Tree Commissions, Business Associations, Owners, Dept. of Natural Resources, Planning Commission
Transit access, waiting space	Transit Agencies, Dept. of Streets and Traffic, Dept. of Public Works
Activity, occupancy of fronting lots	Building Dept., Board of Appeals, Business Associations, Owners
Programmed activity (organized street activity)	Business Associations, Civic Associations, Institutions, Parks Dept., Licensing Bureau, Police
Spontaneous, unofficial activity	Police
Noise, air and water pollution, smell	Police, Pollution Commissions, Health Dept., Building Dept.
Safety	Police, Dept. of Streets and Traffic, Building Dept.
Maintenance, construction and repairs	Public Works Dept., Property Owners and Tenants, General Public, Building Dept., Police, Utility Companies

5. *Use of Street Space and Street Objects*, turning waste land and ordinary objects to useful and pleasant account.

6. *The General Form and Pattern of Strips*, going beyond the existing accidental form to consider the relation of parts to each other and to their context.

All these opportunities will be discussed at length below.

The quality of the strip cannot be radically improved without new institutional structures. Analysis of its current control and management reveals an exceedingly complex puzzle of actors. Sometimes they create a feature or maintain it; sometimes they administer a particular activity; sometimes they simply regulate someone else's activity. A partial list [is given in table 1].

On Main Street in Waltham the situation is considerably worse than the [table] would imply, since Waltham is a small city that lacks the developed bureaucracy of a large city. Nevertheless, the bureaucracy is sufficiently complex and disjointed to prevent planned change. Moreover, many qualities are not managed at all: noise, traffic, preservation of nature and history, and many more. The existing regulations are poorly enforced. The city planner has almost no influence on the street or on its day-to-day management; his major impact is in suggesting locations for planters. The Building Department has control of the existing building controls, but the Public Works Department is the real manager of the day-to-day quality of Main Street, since it is responsible for maintaining the public street and implementing most regulations. Yet Public Works neither controls the private buildings that line the streets, nor has any voice in the management of the traffic, parking, bicycles, and pedestrians that use those streets. Difficulties also arise in the development and the management of some facilities that are managed by different institutions. But here the problem is compounded by the fact that the various agencies that partially manage, and partially remodel, the street do not coordinate out its useful life. The account of how street signs are designed, installed, and maintained in Boston² illustrates only one small example of this problem. It should be noted that the signing and building departments have a considerable indirect influence over the quality of all street environments. In the low-price range, they offer a poor selection and quality of signs. In the high-price range, the standard signs provided to retailers, by manufacturers of signs, and by Cola, have a strong negative impact.

Wherever development and management are uncoordinated, and are somehow responsive to the needs of users, one finds a well-fitted environment. The inside of a regional shopping center is a good example, the individually designed upper-middle-class house is another.

There is not a single well-managed, well-fitted commercial strip, although some are less offensive, due to planning, traffic, sign controls, or other measures. On the other hand, there are a few pleasant shopping centers (once one gets beyond the parking lot). There are also pleasant pedestrian-oriented downtown shopping streets that grew up slowly under traditional limitations, and are sustained by traditional controls, and shared values. There are a few downtown shopping malls—humane environments converted from shabby old buildings. They have not resorted to a single public managing agency. Minneapolis is one well-known example. In each of these environments one finds a strong association of fronting merchants, an association with considerable political strength and the financial capital sufficient to coordinate inter-agency coordination and special public investment in

ably more simple community and, regardless, it is sufficient (figure 7). Pollution, controlling controls are on the form of impact has been in. It enforces most department is the force it is responsible changes on it. That front on its ic, parking utilities arise when placed in different the numerous facility through- signed, located, ple of that confusion materials have tips. Within the products. Even s such as Coca-

nified, and are a much better nter is one such s, single-family

temporary com- anted medians, are hundreds of (king lot!). There g streets, which ined by custom, own pedestrian streets—which Nicollet Mall in latter cases one ciation with the mpel and entice one small local-

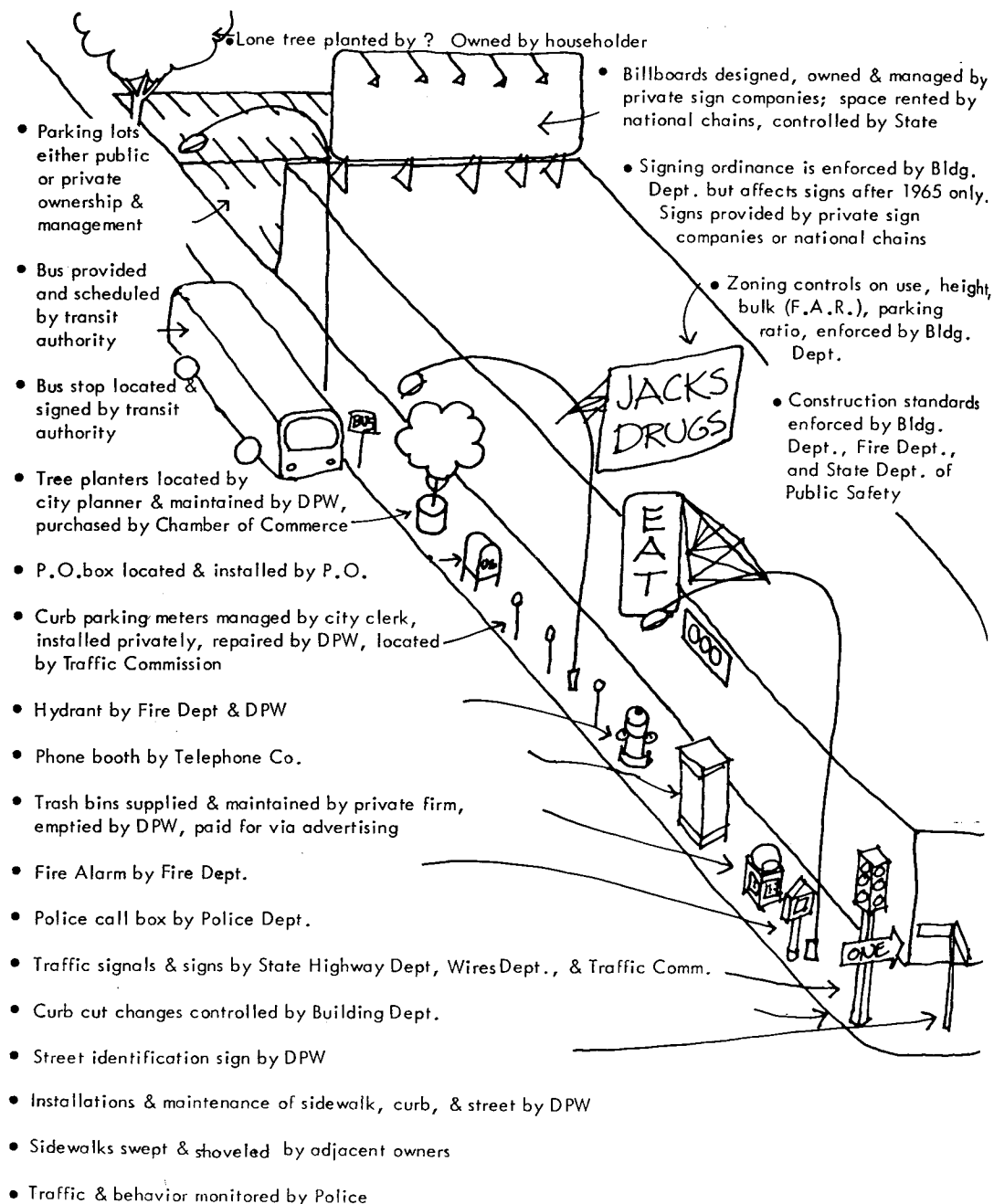


Figure 7 Management of Main Street.

ity. Even here, though, one rarely finds the active management evident in the regional shopping center, although recent cities are calling for such a continuing function. With its planning, conflicting, uncoordinated, and necessarily short-term, one cannot expect the quality of the commercial strip to be upgraded. A much more unified and effective management of the public resource is necessary. Street trees, new lighting standards, ways of displaying signs will by themselves be ineffective.

The institutional chaos of the strip prevents coordination and encourages self-seeking action. Only the crudest of rules can govern a fractionated world. Streets and driveways may be brought to a level, or buildings be kept from collapse, but issues of quality and of government are not solved. Indeed the strip is our most visible urban expression of the conflict between government and of untrammelled free enterprise. Its improvement demands a new institutional base, just as the environment and the regional shopping centers are founded on a new means of management. Could such a new institutional base for the strip be short of a revolution in our ways of owning and exploiting the strip?

This report focuses on problems and standards, and on the institutional policy. Nevertheless, certain assumptions about what is institutionally possible do lie behind our recommendations, and our recommendations will necessarily be compromised if no management alternatives are possible. Two such possibilities come to mind:

1. Unified Street Agency

A unified public agency might manage all the public functions of the street. It would be in charge of the public right-of-way and all its functions: it would build and repair the streets and paths; install and maintain the utilities, and signs; carry off solid wastes; plant and tend the trees, the toilets, shelters, telephones, and other street furniture; and provide the public transportation. All these are accepted functions; what is proposed here is simply their consolidation.

"Simply" cloaks the substantial difficulties that accompany environmental reorganization. Establishing street agencies may be a proposal only when a new local government is being organized (in a new town), or when a rural locality takes on new functions, or when a developed a set of entrenched public departments. However, in a large, mature city, the unification of street functions may be impossible, except within selected zones.

Nevertheless, a street agency is well within our grasp. It is a function. Indeed, the typical public works department is already a street agency. The unification of previously separate public engineering, construction, and maintenance functions. It would be the logical core of a street agency, serving the public interest.

present work is in the street; but it must at least encompass the management of all traffic and parking and preferably the management of public transportation, pedestrian movement, and sidewalk activity as well. Thus its personnel, motives, and internal structure would necessarily be different. The advantages of a street agency are obvious; it coordinates functions and it identifies a single administration on which responsibility for the street may be fixed—an administration that may be expected to have a stake in environmental quality and that also has the power to create it. Its functions and territory would be clearly demarcated from other domains, such as education, police protection (as distinct from traffic management), health, or welfare.

We are not proposing one of those super-agencies which are so neat in the organization chart and so disastrous in practice. A street agency does not mass together functions that are only conceptually similar (like "Human Services"), but it links the development and management of a clearly marked spatial territory used by a related bundle of functions and requiring a similar group of operations. The agency would have identifiable clients to respond to and from which it might seek political support, although those clients would be of two kinds: the transient users of the street (the same as the clientele of a highway department, but minus the economic impetus of the large-scale road builders) and the stable commercial occupants of the street (similar to the merchants' association of a CBD but not so powerful or so concentrated). The client backing of a street agency, therefore, would not be as potent, stable, and unified as a school board's, but it could equal that of many other public agencies. Its principal difficulties would lie in resolving conflicts between its two sets of clients and in forming strong and responsive links with the transient users. The functions of the street agency would be reasonably broad and varied, yet they would be sufficiently similar to make their consolidation a gain in efficiency. A street agency would appear to be a workable unit rather than a mere super-agency.

A street agency would license and regulate the private use of rights-of-way and plazas—as by street vendors. It could prevent interference with street functions by setting rules for lighting, signs, planting, or the emission of noise and pollution. It might encourage desirable private activity or construction in the street through financial or administrative incentives. It could post signs of general educational interest, as well as regulatory signs, or provide space for personal communications, or sell space for commercial signs. It could regulate fronting uses in terms of the loads they put on the street. Different classes of street could be rated differently for their maximum load of cars (or persons or wastes) per day per unit of street front. Fees for maintaining the street could be charged on the basis of that permissible load. Thus the street agency might be financed, wholly or in

part, by such an "access tax," plus betterments for capital. Use, zoning, public services, and financing would then all be put together.

2. A Frontage Association

Even where a unified public agency is out of reach, a private frontage association might often be possible, as in a downtown. In a weak form, this could simply be a voluntary agreement among the owners, such as the Fifth Avenue Association in Manhattan. In a stronger form, it could be the creature of the original developer of the strip, and so be built into the conditions of sale of the strip. It would have the power of assessing and regulating its members.

A frontage association would not control the public street, but it could install, maintain, and control pedestrian ways, parking, service drives; plant and maintain fronting strips and other landscaping; provide shelters and public services; install lights, signs, benches, and other objects; control use, density, and building details; advise owners on development and maintenance; promote local business and advertising; and even provide local transit or services such as waste disposal, or the maintenance of buildings and grounds.

A frontage association could be financed by assessments on the fronting owners. It might charge user fees, or sell licenses for use of association space. It could not control the public street, but it could for its members, and its stake in the quality of the strip would give it the power to stimulate, even compel, inter-agency coordination. The associations now routinely created by large-scale residential developments as a way to maintain future quality provide a direct model. They are proposed. So a commercial developer might leave a frontage association to help him; or it might be the creation of urban redevelopment. It cleared and rehabilitated a decaying strip. Dependence on the association, of course, strengthens the voice of the merchant, the user, of other users (through traffic or bus riders, for example), and the elderly who may use the street but who buy little.

The association would have an even clearer stake if the owner owned the fronting land and leased it on extended terms to the tenants. This is the model of the shopping center approach to a loosely organized strip. As owner of the land, the association would have a direct economic interest in long-run quality and would have long-term ownership of the extended, slow-growing, and high-value strip, divided by a street in public hands, is less like a shopping center to a profit-making corporation than is the compact, high-traffic shopping center. But consolidated ownership might be possible.

l improvements.
l be linked direct-

ate association of
ntown mall. In a
t among existing
tan. In a stronger
or redeveloper of
fronting lots and

right-of-way, but
, bikeways, and
her small spaces;
, benches, trees,
ils via covenants;
te street activities
s such as patrols,
nds.

essments on the
ses for the use of
[it] could speak
ould be patent. It
The homeowner
tial developers as
for what is pro-
ge association be-
ppment that had
n a frontage asso-
nt at the expense
ble, or teenagers
).

in quality if it
ns to commercial
lied to the more
ation would then
profit. However,
d relatively low-
ly to be attractive
urnover regional
in dense, active

urban areas. It would also be possible for a short loop commercial street, in which everything, inclusive of the street, is under single ownership.

The unified street agency and the private frontage association (preferably in a strong form created through development or redevelopment) are desirable and possible in a significant number of cases. They can be used in combination or separately. The standards and patterns to be suggested below will sometimes be useful even when there is no unified control of the street and its frontage. The more common model is a simple coordination of existing public agencies, brought about by some group—such as a planning department—which is interested in overall environmental quality and has the political leverage, the persuasive power, and the disposable funds to initiate and maintain that coordination. It must look to diffuse public support to give it those levers. However, most often, this study will assume the support of one or the other of the two institutional devices described above. Not only will it be assumed that there is a unified managing agency, but also that that agency will be oriented toward identifying the users of the street and what they are trying to do. Thus, the agency will routinely specify the connection between qualities, standards, and the desired behavior of users. In other words, the agency will use explicit environmental programming and employ performance standards open to public scrutiny.

In addition, a national or regional environmental research agency might develop and maintain a detailed set of recommended street settings, qualities, and standards for typical situations. A large national or regional agency could afford to test its prototypes. They could become local law by reference, or could be used in local review. The larger agency might analyze the relative success of innovative arrangements, study user behavior, and create and test new settings. It could disseminate information on environmental standards. Admittedly, an applied environmental research function of this kind need not be confined solely to arterial streets, and the large-scale agency might have a larger functional scope.

Standards and Patterns for the Strip

[The study goes on to suggest possibilities for standards and guides for the strip, considering management and form together. These include standards for access, ambient quality, convenience clusters, information, street space and street objects, and strip form. Because of space limitations, we include here only the discussion of strip form. — the editors]

The Form of the Strip

The typical strip today mixes cars, buses, and bicycles in a central roadway, with curb parking at the edge, bordered by public walks. Stores may front on these walks, but are often set back behind further parking, so that

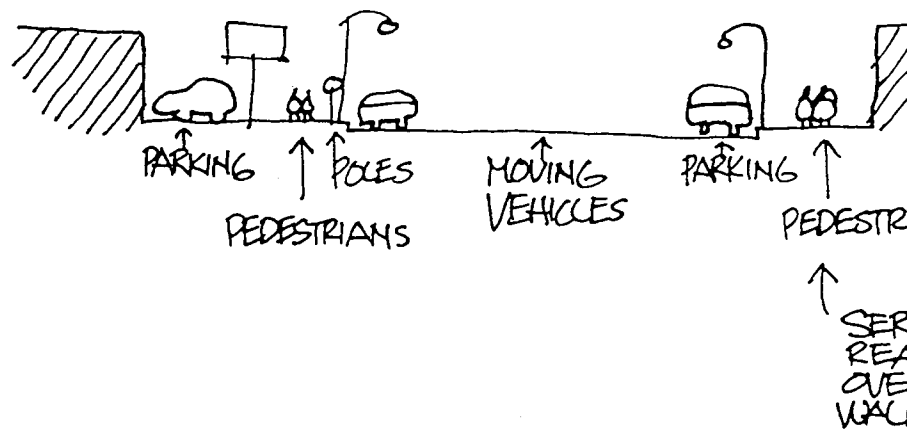


Figure 8 Typical strip cross-section.

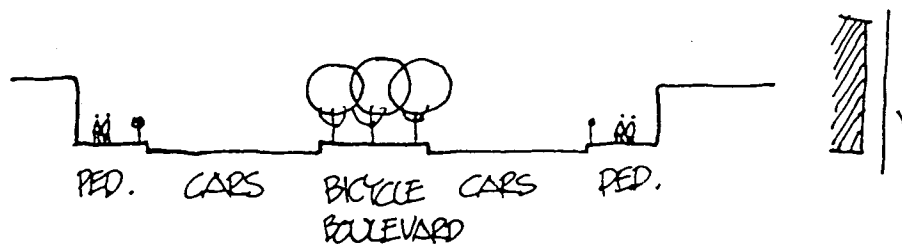


Figure 9 Boulevard pattern.

the walker is literally surrounded by cars, service is crowded, and people must compete with automobiles, and buses have to stop out of the way of parked vehicles. There is no room for trees (figure 8).

There are many other ways of relating automobiles, bicycles, public transit, and commercial space. The traditional boulevard pattern (figure 9) solves the problem with a very wide circulation area where the various modes of movement are separated out and planted in distinct strips (figure 9). The boulevard can, for example, have a wide pedestrian and bicycle paths down a planted center strip. But if pedestrians and cyclists are forced to cross traffic to reach the shops, the trees are not where the people prefer to walk, and the walks are still exposed to noise and fumes. The problems with the boulevard pattern are not solved, nor does transit have any advantage. Poles are still needed at the edge of the walk.

If through traffic and local low-speed traffic are divided, and the trees and utilities and trees can occur between them. In this pattern the pedestrian is more protected from the presence of high-speed traffic on the boulevard, and cyclists do not have to cross heavy traffic to reach the shops.

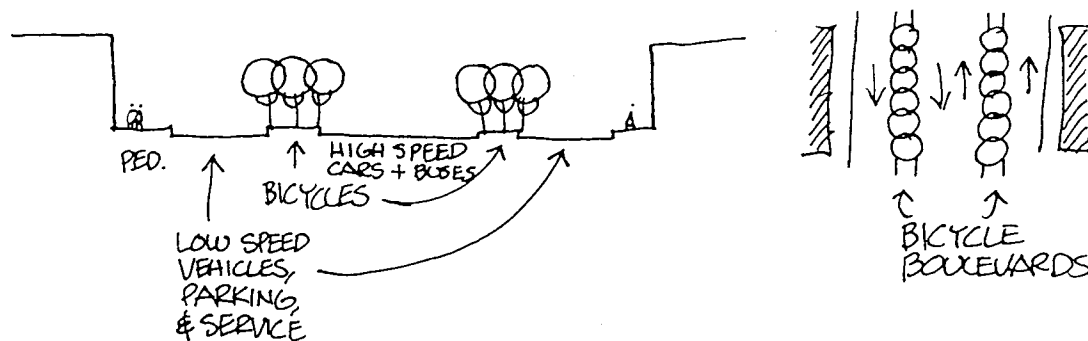
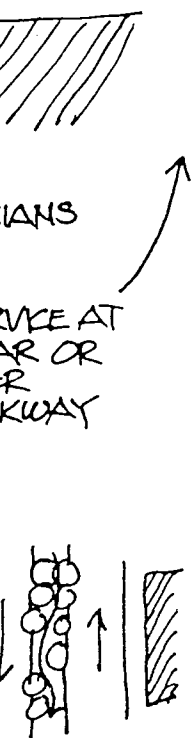


Figure 10 Split boulevard pattern.

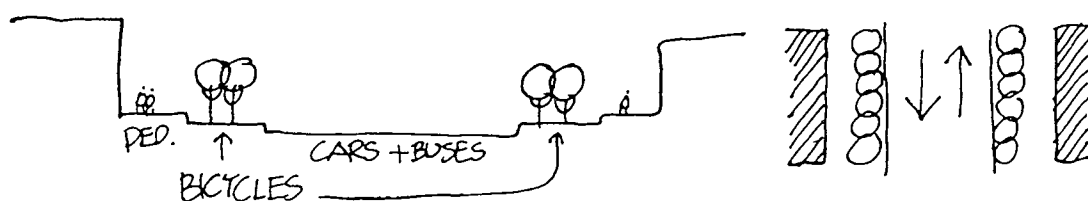


Figure 11 Side boulevard pattern.

Through traffic and transit are freed from the maneuvers of local traffic and service, but bus turnouts need to be provided in the planted strips as well as room for the bicycle paths. The street has become very wide, and the trees are still in the wrong place (figure 10).

If the planting strips are attached to the sidewalk, then cyclists can have a lane next to that, perhaps with different levels for the planted walk and the bicycle path. Pedestrians are now comfortably provided for, but bus stops become a problem, and the traffic is mixed once more (figure 11). All these traditional models, although handsome and lively if the fronting use is intense, seem wasteful and potentially "empty" at contemporary densities. Moreover, they can be applied only to new construction.

Given a congested existing strip, perhaps the most reasonable solution would be to ban curb parking and to give that space over to planting, utilities, and bus stops. Car parking could be subject to a setback, so that it would be put behind and between the commercial structures, which would then be encouraged to return to fronting directly on the walkway. Service would occur at the rear. Common parking lots would also be necessary, and any parking lots not behind buildings could be required to be shielded from the sidewalks. In addition, a cycle track might be opened along a strip of open space behind the ranks of commercial buildings. This open space could be allocated for other public uses, and could serve as an alternate route for pedestrians. It would also serve as a buffer to the resi-

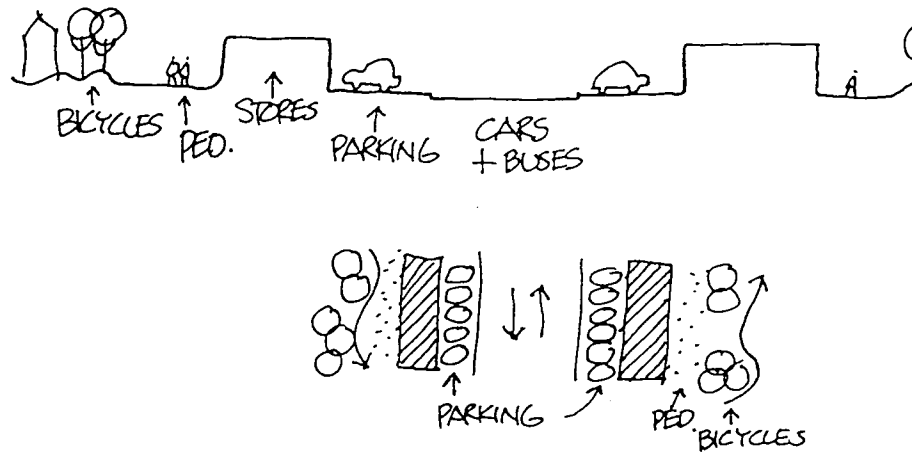


Figure 12 Rear pedestrian/cycle path.

dences behind. Pedestrians and transit riders and cyclists better provided for, and traffic would be somewhat improved. Cyclists would be removed from the lively face of the street.

In new strips, the shops could be turned around to provide access at the rear for both pedestrians and cyclists. Automobiles would be adjacent to the roadway, but pedestrian paths would be on the other side of the shops, adjacent to the bicycle paths. This was possible in some old strips, but only if they were redeveloped. The result would be a pleasant one, and relates well to housing along the strip. Bicycles and cyclists would be far removed from the stores on the lively side of the street would be only half as "lively." Perhaps it would work better if there were only a single rank of commercial buildings.

A better solution in a new strip would be to split the space between pedestrians in the center between the shops, and the parking areas between the shops and the roads (figure 13). Bicycle paths and transit could possibly be given a central lane within the pedestrian area. Otherwise, cycle and transit lanes would occur just outside the pedestrian area. The plan would provide a protected enclave for the person on the strip. Parking and service facilities in highly visible and accessible areas. Transit and cycle routes would also have an advantageous position. There would be a separation between opposite directions of traffic, but turnouts would have to be to the left, unless lanes could be provided. Intensely used sections of the central space might be covered by a protection from rain, cold, or sun; but this solution would be a discontinuous structures at low densities. There must be a buffer between the traffic and the area "outside" the strip, however.

There are a number of ways to make a transition between the strip and any residential land behind it. Where possible one could

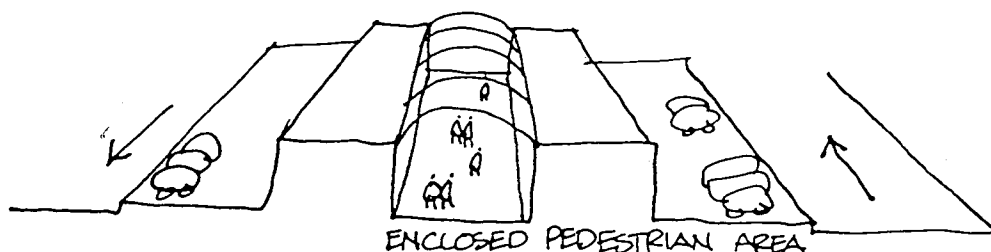
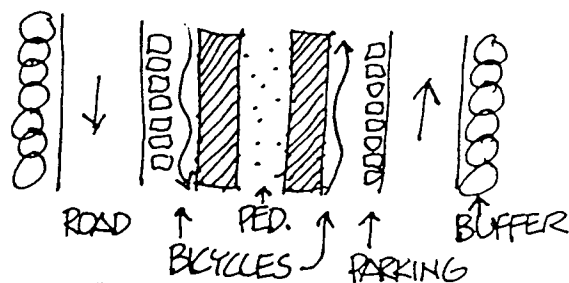


Figure 13 Split road with central pedestrian path.

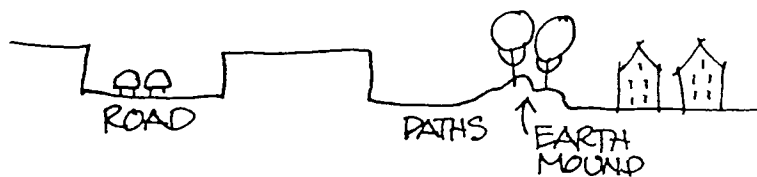
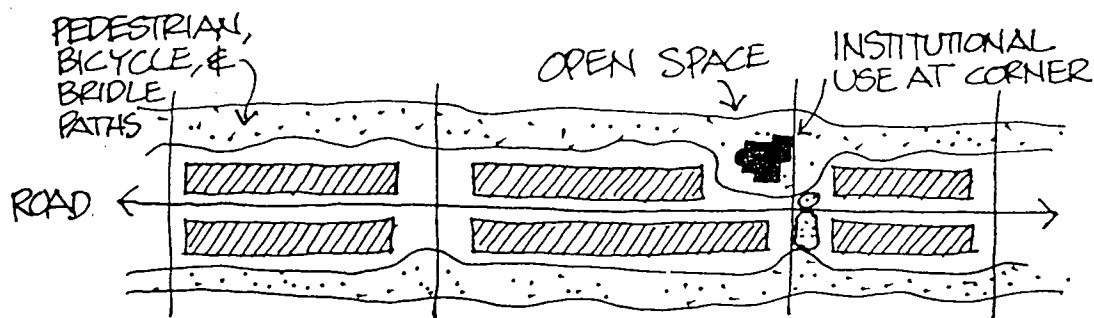


Figure 14 Open space strips.

would now be
ved. However,
(figure 12).
provide primary
mobile parking
would be on the
would be possi-
the solution is a
But pedestrians
other side. The
work best if there

e road, placing
ng and service
s or even slow
pedestrian lane.
the shops. This
foot and place
ible locations.
osition. There
fic movement,
d be reversed.
red to provide
also work with
uffer between

etween the strip
d put a band of

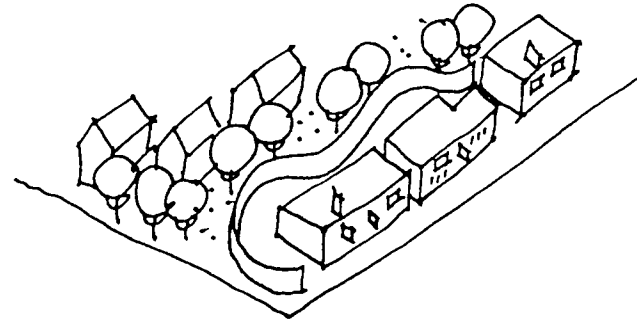


Figure 15 Buffer walls.

open space between the two uses, which could be used for jogging paths, for bridle trails, for allotment gardens for residents, or as park land. At points, the strip might accommodate public buildings, to provide a deeper context, or include some natural feature (figure 14).

Where space of this kind is not available, a shield could be created using a wall, an earth berm, or continuous planting. Landscaping and pedestrian ways might lead back to the residences from the buffer, and convenience clusters on the strip (figure 15).

Gateways from the strip into the residential area could be created by carrying residential landscaping from the residential area onto the strip at the intersections between the arterial and residential streets (figure 16). These landscaped corners could also be used for personal service centers and bus stops. Such approaches work well with existing strips but in many cases, as with Main Street, the land area is too limited.

A change of levels can also be used to separate different uses. If the strip were put in a shallow linear depression, natural drainage on the backside would run into the earth; noise would be deflected away; fumes would settle in the channel. The residential area would be on a higher grade. In some cases, the rooftops of strip structures could be used as public space (figure 17).

The strip should be well differentiated and legible. As one moves along it. By structuring it around a few unique elements, a series of views or events can be created for the motorist or pedestrian. A general rhythm can be given to the experience. A general pattern can be given to provide a chain of landmarks or events, so that from every point on the strip, some identifiable form is in view; once that point is passed, another then appears. The visual experience can also be varied by the kinetic experience of road motion through bends. Signing, lighting, and planting can also be varied along the strip (figure 18).

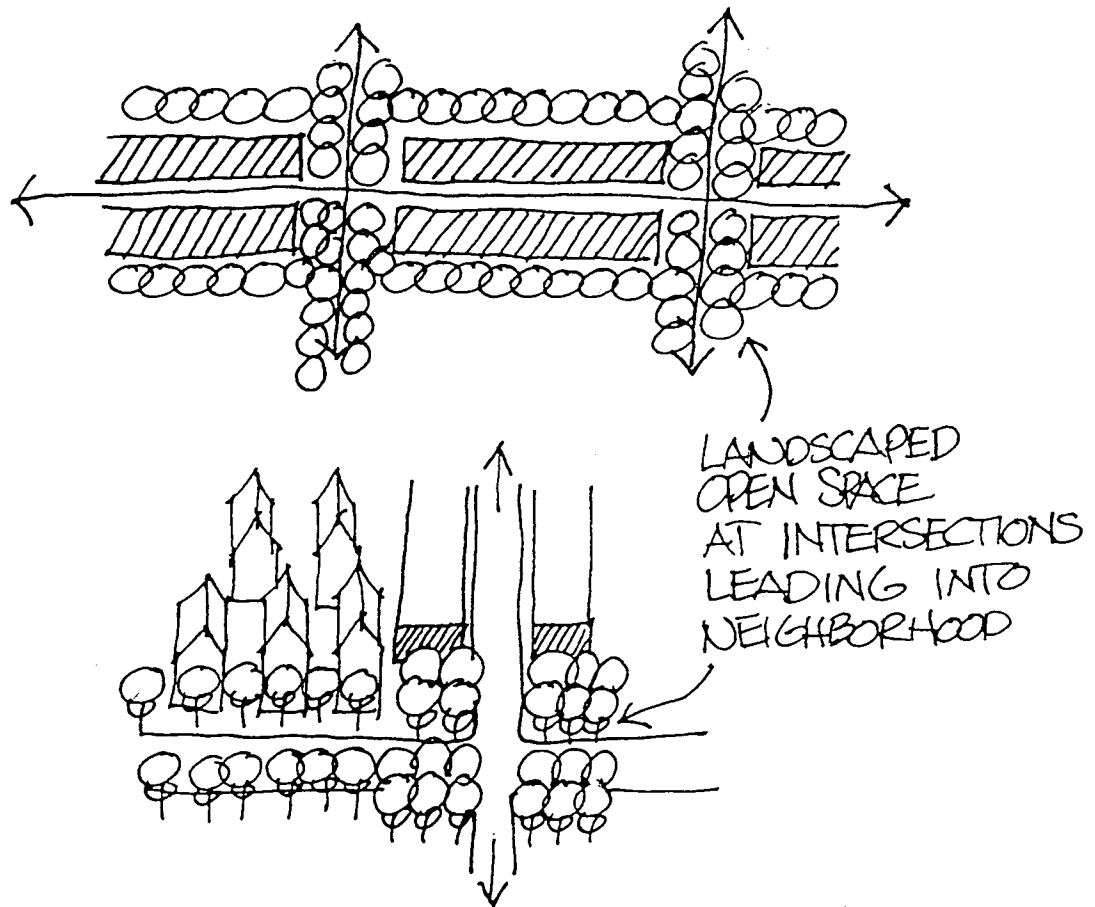


Figure 16 Open space connectors to the neighborhood.

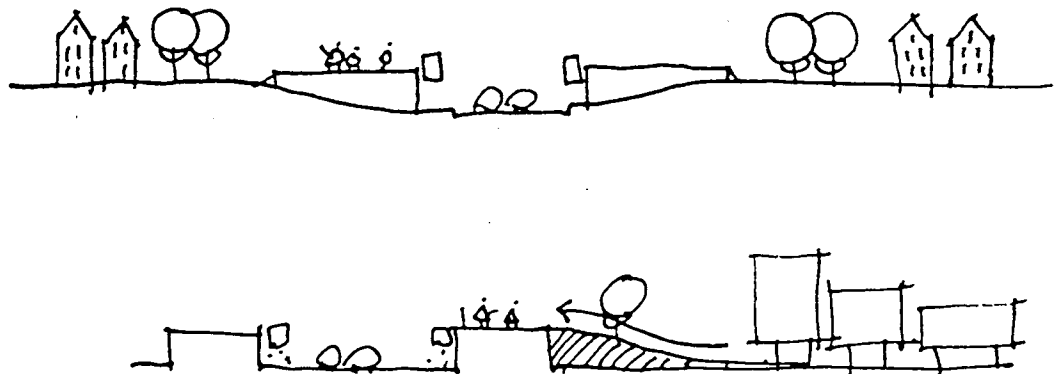


Figure 17 Use of changes of grade.

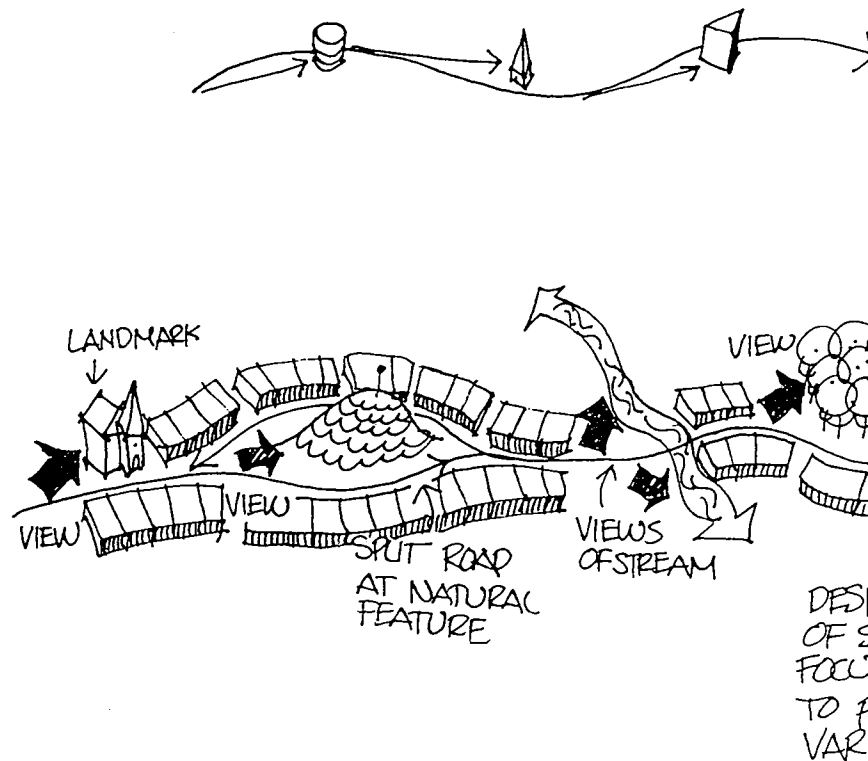


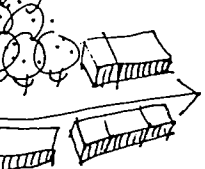
Figure 18 Sequential form.

General controls on heights, setbacks, bulk, and textures along the strip might also help create continuity. However, since densities and values are low, there is no pressure to "fill the envelope," and thus public limits would create a continuous form. At selected points, say at nodes where values are higher, greater height and bulk might be encouraged, encouraging the creation of "landmark" structures. The strip might also expand at these points.

A variant of this would be to allow the structure to expand at intersections. Between intersections, structures would be limited to room for parking and public services. Thus, the strip would be a series of segments (figure 19).

Thus far the strip has been viewed as part of an arterial, a relatively straight path. However, this arterial strip affects major traffic, as well as enormous amounts of bordering land. It is preferable, in new development, to lay out commercial and concentrated, but still linear, developments, which vibrate from the main arterial but which through-travelers could even connect two arterials (figure 20).

BREAK
FRONTAGE
AT NATURAL
FEATURE



IGN CURVATURE
STRIP TO
OS VIEW &
PROVIDE
VETY

d spacing of struc-
uity and legibility.
not the same pres-
d not automatically
major intersections
t be allowed, thus
space envelope of

to pinch in at the
e set back to make
uld be divided into

erial that follows a
ts long sections of
land. It might be
strips as planned
would be entered
uld bypass. They

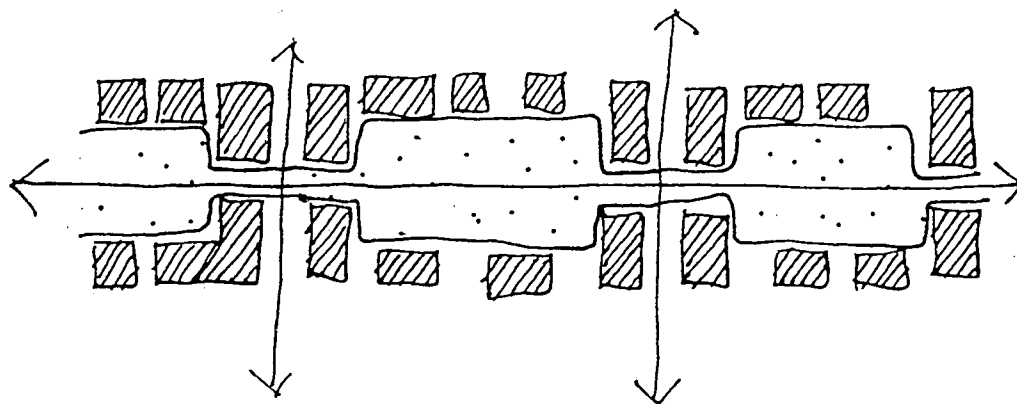
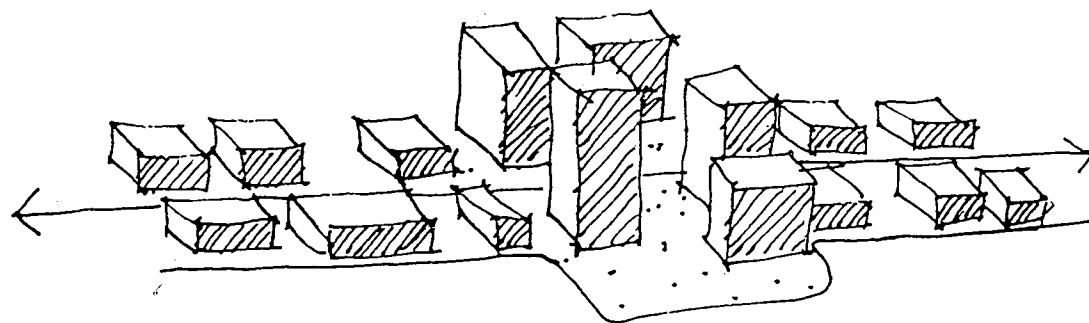
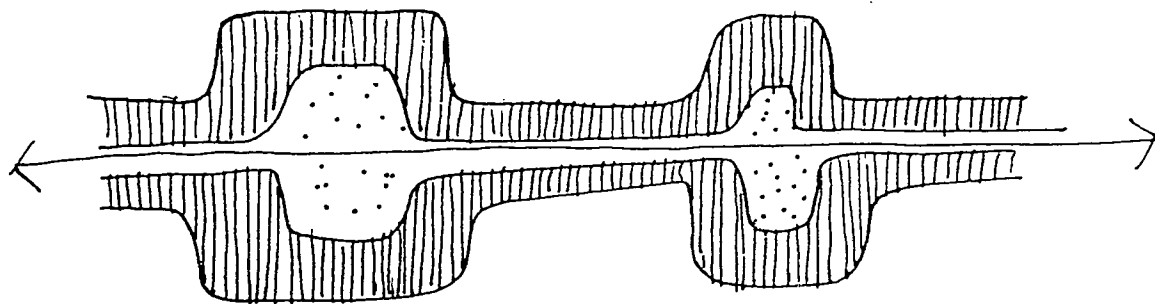


Figure 19 Possible strip form: nodes.

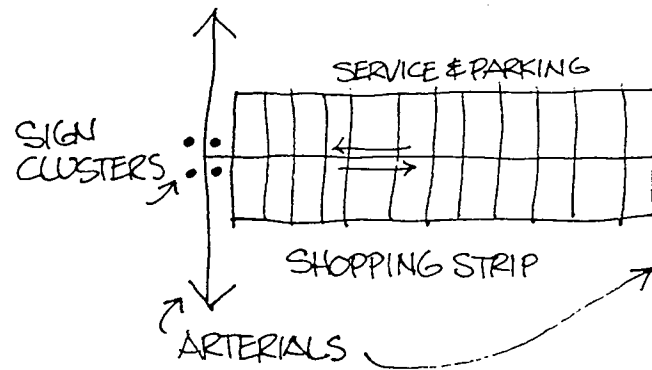
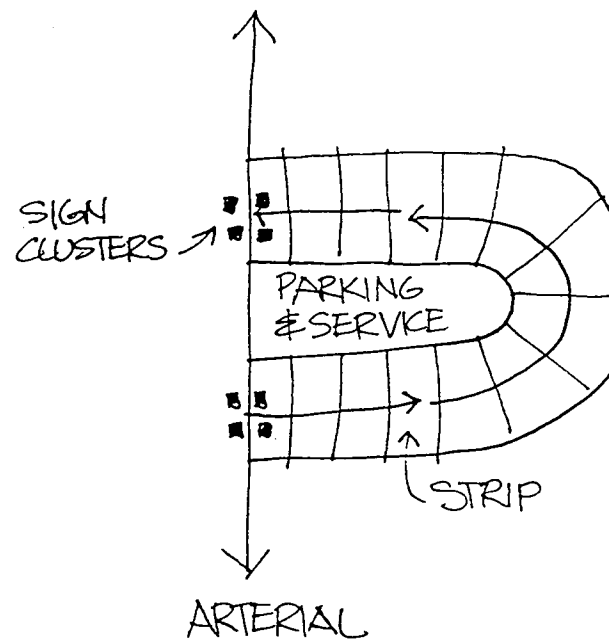


Figure 20 Possible strip form: loops and arterial connectors.

These loop and link patterns provide for auto- and transit-oriented commerce, but they contain it and minimize its impact on other traffic and the community. At the same time, they are easy to find from the highway, and quite accessible to the residences behind. Of course these patterns are appropriate only for new development, or where major redevelopment can displace the through-traffic system.

All of these suggested standards and patterns need development and testing in a real situation. Few specific environmental standards have universal applicability, and therefore few standards can be fully developed in the abstract. A good standard needs to be tailored to the nature of the environment, its users, and the management framework of the area. The suggestions offered here are a guide to the development of standards for a strip but do not specify the final form of that standard.

Conclusion

The reader may remain in doubt about the motives and conclusions of this paper. Does it advocate encouragement of the commercial strip in some improved form, or does it only accept the strip as unavoidable? Neither and both are true. Given our economy and our ways of holding land, given our reliance on the private car, the commercial strip is a likely and advantageous pattern, but one that is capable of great improvement. If the basic factors shift—our affluent private economy, the private exploitation of land, the heavy reliance on the private car—then the commercial strip itself will need to be reassessed. That reassessment has not been made here. Pollution and energy crises may greatly reduce the use of the private car. However, it seems likely that a more compact, but still linear, pattern of service—one based on public transport, walking, and bicycles or other light personal vehicles—would even then prove to be a persistently useful form. Meanwhile, the strip is a characteristic feature of the American city today. It cries out for improvement.

It is reasonable to think that the changes recommended here might actually occur? The strip represents a relatively low value use of land, and the level of investment proper to a downtown or a regional center is unlikely. Still, substantial public sums are regularly put into the arterial streets, and private investors put sizable amounts of money into signs, access systems, and other attractions for their customers. The dollar amounts demanded by the suggestions in this paper are not so different from these normal expenditures, although they may be applied in different ways. Expensive solutions have not been considered, such as continuous enclosed grade separations or coordinated facades. But some of the suggestions—the new patterns of strip layout, for example—would be feasible only in new development.

The heaviest costs are the institutional ones: the political and administrative battles that will occur in the creation of street agencies

or frontage associations. Our institutional ideas have less significance for mature areas. But the benefits of reorganization are clear, and surely worth application or in redevelopment. These administrative issues need further study.

The standards and patterns proposed here are both credible and usable, each would require separate analysis. We will have to answer certain questions: What is the basic pattern? How can achievement be measured? What lessons for different situations? What are the likely costs and benefits? Finally, they must be tested in practice. At least this suggested a useful agenda for research.

The focus of attention has been mostly on new strips. The observations and suggestions in this paper also apply to old ones. Old, declining strips are everywhere in the American cities. Can these semi-abandoned frontages be restored to useful use? Given thought to what empty stores, vacant parking spaces, and other conditions could be good for? Could worn-down strips be made into what the community uses now cramped for space? Strong public support for relatively modest physical changes could rehabilitate them.

Perhaps urban redevelopment areas might so use old strips, taking a length of arterial street frontage for resale. Benefits in traffic, service, environmental quality, and economy might be realized at little social cost in relocation and disruption. If purchase costs were high, resale values might be equal to them than they do in most renewals. Standards for the development of existing, declining strips will therefore be important.

Even the prosperous commercial strip can be improved. There are a number of reasonable actions, rip-off, which would make the strip a far more humane place to live. Abandonment might be prevented (or perhaps might be encouraged for?). What will happen to the strip as automobile use is rationed? These are not unlikely eventualities. Can the strip be converted to a form that will survive and even flourish if people travel by public transportation, by bicycle, or on foot?

Notes

1. See Donald Appleyard, unpublished interviews on perceptual organization system; San Francisco Department of City Planning, *Urban Design Signs/Lights/Boston* (Boston Redevelopment Authority project), 1971.
2. *City Sign and Lights*.

On Historic Preservation: Some Comments on the Polish- American Seminar (1974)

Our tour of preservation work in Poland was a most pleasant and instructive experience. What follows are some rather superficial and unorganized impressions. It is true that I learned little that could be directly applied in the U.S., but it would have been naive to expect that. The Polish context is too far removed from us, not only because Poland is a socialist country, with public control of the economy, but also because restoration work there has intense political meaning, in a country so often and so recently overrun, in which foreign conquerors have sought so deliberately to destroy the continuity of Polish culture. Restoration in Poland is a political and psychological necessity, a defiant assertion of continued existence. The U.S. has never had such an experience (despite the British raid on Washington), although particular groups have suffered in this way, e.g., the Navaho, the Cherokee. Nor do we have such national homogeneity, nor such centralized control (happily). Nevertheless, visiting another country is always instructive, and seeing how they tackle historic preservation makes one think again about one's own.

To a U.S. visitor, the most impressive thing is the scale of resources being applied to historic reconstruction, and the sheer quantity of remains worthy of reconstruction, despite the successive wars. In town after town, entire central areas are being rebuilt or restored to sound conditions and to their historic external form. Scattered buildings throughout the remainder of the cities, and in the rural areas, are subject to preservation orders or are being rebuilt. The resources being applied are substantial in proportion to the resources available: 40% of the total development budget of the nation went to the rebuilding of Warsaw in the early post-war years. Most of this was not historic restoration, of course, but rebuilding the Old Town "just as it was" was a significant part of the total.

Just how much historic restoration is costing the country we were never able to find out, perhaps for reasons of policy, but more likely that no one seemed to know, or even be much concerned. Public budgets are so unlike our own as to be difficult to compare. Restoration work received its funds from many sources, direct and indirect, and accounting seemed fuzzy. Some conservators in charge of local works estimated that restored dwellings in historic areas cost approximately three times as much as new dwellings of comparable size elsewhere, but they were uncertain.