

## **Designing Residential Islands**

THOMAS FRANK BARTON  
Department of Geography  
Indiana University, Bloomington, Indiana 47405

### **The Enmeshing Web**

As early as the middle of the 20th century in most United States cities of over 100,000 inhabitants, circulation-business-industrial (CBI) corridors had sliced through and surrounded former extensive continuous residential areas forming a web pattern. The web pattern concept of city growth has been presented in earlier papers. (1) The most recent of these on the web pattern of circulation-business-industrial (CBI) corridors and the residential islands, the corridors encompass is "Conserving Energy and Natural Resources with a Web Pattern of Corridors" read at the International meeting of the Advanced Transit Association on April 26, 1978. (2) Briefly, the web pattern of city physical development materialized as strip businesses which coalesced and joined multiple nuclei centers with each other and the downtowns. This process forms huge web-shaped corridors of circulation-business-industry (CBI) throughout large cities. In Chicago the web is referred to as corridors of high accessibility. The process continues with the web of corridors becoming thicker and more extensive to the detriment of the adjacent and enmeshed neighborhoods. Apparently, the city officials who permitted the CBI corridors to develop by granting innumerable variances in land originally zoned for residential purposes and others who later zoned the corridor development, gave little consideration to the influence that these corridors would have on residential land. City officials and city planning departments also worked with state highway departments to design, locate and build interstate highways and limited access freeways through and around residential areas. The records of numerous residential zoning variances indicate that both government agencies and the petitioners strongly supported the philosophy that transportation, business and industrial uses should have a higher priority than residential. It is only within the last decade or two that people began to challenge the right of street and highway management to slice through and subdivide residential areas.

### **The Problem**

Regardless of how CBI corridors were built, these huge city-wide encompassing webs do exist and so do the residential islands or cells they enclose. Within these residential cells live millions of people in detached dwellings valued in the billions and in which billions of dollars have been invested in both public and private infrastructure service systems. Residential life and these investments are under constant threat of disruption and/or deterioration which so often results in slums.

Whether a city grows in population or not, the use of its land is not static. In the past, residential users of land primarily played a passive role, and those who wished to convert residential land to other uses have been aggressive. In some cases the promoters have cut away parcels of land from neighborhoods and communities until corridors have penetrated through creating additional residential cells by subdivision. In other cases residential communities have been overwhelmed by huge encompassing developmental projects, such as the interstate highway routes cutting through and surrounding Indianapolis.

The processes which produce the web pattern of corridors and residential islands or cells are continuous. Each year and each decade extending corridors cut through and close around neighborhoods and communities dividing and redividing many former thriving residential areas and the process of physical deterioration and economic and social decline accelerates. Too often people are partially stranded on one side of the corridors and their social institutions of churches, lodges and schools on the other.

### A Residential Cell Model

To remain stable, prosperous and desirable, neighborhoods and communities need to 1. be relatively large, 2. hold through traffic to a minimum and 3. be as pollution-free as possible, which includes preventing the spread of individual residence deterioration.

Size. It is imperative to keep residential areas large enough to adequately provide four or five neighborhoods, and a community with at least a minimum of the desirable services such as detached houses, duplexes and apartments as well as elementary schools, a community high school, playgrounds and neighborhood and community shopping centers with convenience goods (Figure 1). Since relatively low cost, yet efficient, city services whether education or garbage collection is related to size of population, in order to keep the per capita costs to a minimum it would be desirable that neighborhoods have populations from 15 to 20 thousand, and a community 60 to 80 thousand. Neighborhoods may cover an area of 320 to 640 acres.

Enmeshed small residential areas of eighty acres or less often develop serious problems. If a smaller residential area has been sliced from a larger one and is found sandwiched between a larger area and an arterial street and a railroad, it may be possible to change this small residential area to light-weight industrial and a community shopping center as indicated in Figure 1.

Or, if the smaller residential meshes are not too numerous and are adjacent to the downtowns, some of them may be converted to multiple-dwelling units for childless dwellers. In former years when business downtowns were expanding horizontally rather rapidly one could assume that in the near future these small residential cells would be converted to business use. But today, because of the shift to huge shopping centers and industrial parks on the periphery of large cities and suburban residential expansion, it could be possible that small residential cells be used for center city recreation such as museums and sports arenas and parks which would serve a city's entire population, not just a community.

Through traffic. Through traffic is an abomination to an otherwise quiet residential area. It adds to and is often a major contributor to high traffic density, accidents and congestion on narrow streets. Such traffic is often dirty and too often is the major factor in producing unsightly streets, with broken curbs, trash-clogged drainage outlets, litter and damaged shrubs and shade trees. Through traffic vehicles often carry heavier loads than the residential streets were built to bear causing rapid deterioration resulting in broken pavements, chugholes and patched repairs. Through traffic drivers and their vehicles handicap normal residential activities. Persons backing their cars from driveways, bicycle riders, local transit buses with their frequent stops, pedestrians and other activities causing slow traffic flow, are an irritation.

Two of the primary ways to greatly reduce if not eliminate through traffic are 1. not to provide or, if possible, reduce and eliminate straight streets crossing a

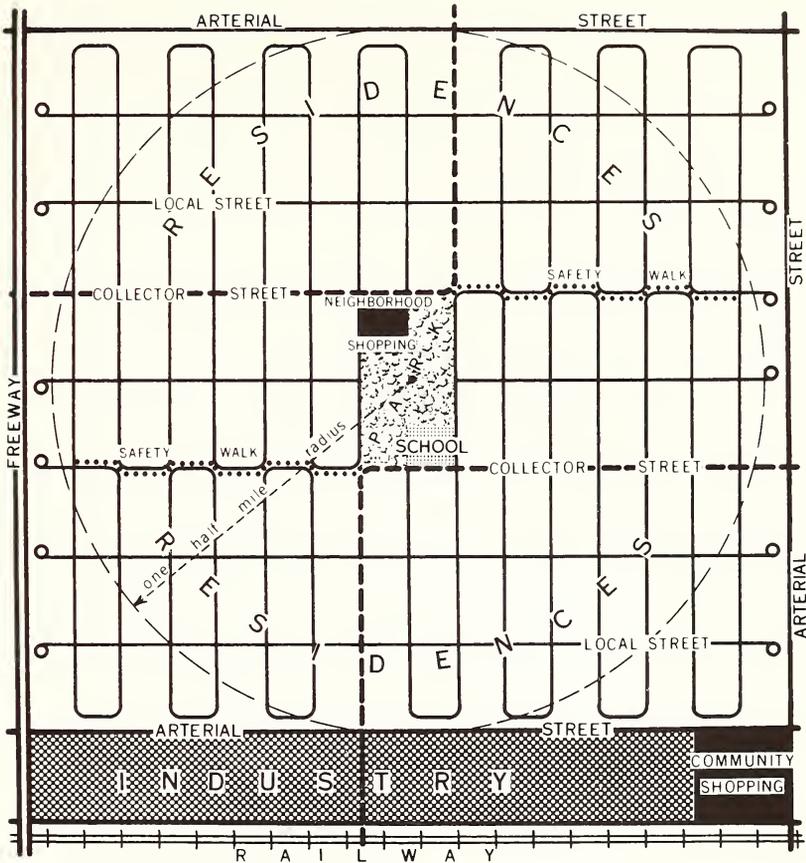


FIGURE 1. *Model of a Residential Island*

neighborhood and 2. build numerous dead-end streets with only cul-de-sac and hairpin turns.

The residential model in Figure 1 shows four access entrances to and from the major arterials and freeway which bound the approximately square mile area. Notice that the two L-shaped collector streets provide easy access to and from the residential cell and the rest of the city without being joined together and without crossing two major safety walks that provide residents with access to the park, school and shopping center. Moreover, there are no straight mile-long local streets connecting the residential cell to the arterials. The local streets are designed to slow the speed of traffic and discourage non-residents, except visitors and small commercial vehicles serving the local residents. The dead-end streets with only cul-de-sac and hairpin turns present a problem to through traffic drivers who would quickly learn to avoid the area.

Then with through traffic partially eliminated from the neighborhood, several steps could be taken to lower construction and maintenance costs. None of the streets here need to be as wide or the pavement as thick as is that of arterials and

the freeway which borders the neighborhood. Both the weight and size of the vehicles entering this cell should be limited. With notices posted at the overhead gate entrances that have a clearance height adequate only for cars, small service trucks and small transit buses if necessary. School buses need not enter the area since all of the elementary children would be living about half a mile or less from the neighborhood school and could walk that distance. Park, shopping center and health clinic, and day care center, if these were added to the center neighborhood complex, would also be within walking distance. High school students could walk or bicycle to the collector street entrances.

With through traffic practically eliminated and a strong neighborhood association in operation, non-motor bicycle lanes could be marked so that bicycling would be relatively safe for anyone to ride anywhere in the neighborhood, and to the four collector street exits and entrances. On the exit side, parking areas could be made available for those wishing to park bicycles and cars and take mass transit at the stops located just outside. By eliminating the big buses and trucks from the local streets and safeguarding pedestrians and motorless bicycle riders, walking and bicycling would be encouraged, thus improving the health of the neighborhood, and gasoline conservation would be supported.

Pollution. Residential islands are subjected to pollution originating 1. within a neighborhood and community, 2. in the CBI corridors which surround these residential areas, 3. from other parts of their metropolitan area and 4. in places miles from the home city.

It only takes a few residential yards cluttered with 1. corroded and broken-down water- and eve-spouts (the latter filled with leaves and young sprouting plants, 2. broken and discarded T.V. aeriels, 3. broken windows, screens, porches, steps and sidewalks, 4. peeling house paint, 5. fences in disarray, 6. ill-smelling garbage cans and litter at pick-up sites, 7. various types of litter such as paper and boxes, discarded food and wrappings, bottles and cans, and 8. junk bicycles and cars infested with rats, to start the decline of a neighborhood. Unless peer pressure and/or group help in maintenance, operating individually or through strong active groups, can control such types of refuse and reduce or eliminate intra-neighborhood pollution sources, it is not realistic to believe that the residents can have much influence on the control of pollution coming into its area.

Neighborhood pollution originating in the adjacent CBI corridors is more difficult to reduce. Typically these corridors abound in sound, smell, sight and air pollution. 1. The increasing noisy traffic, 2. unsightly litter and smelly garbage, 3. the ill-smelling gasoline exhaust and other fumes, 4. the dirt laden air and dust, 5. the noises associated with loading and unloading, 6. the sirens and flashing lights of police, fire and ambulance vehicles, 7. the flashing ugly neon signs and billboards and 8. other numerous activities which help produce sound, sight, smell and air pollution are all a part of CBI corridors activity that flows and swirls around the enmeshed residential cells.

Neighborhood associations have two primary approaches to reduce CBI corridor pollution. One is to shield their neighborhood and the other is to bring pressures on city agencies to better control and help reduce excessive corridor pollution. Both approaches involve long-ranged planning. In the model of a residential island presented in this paper, the two primary sources of pollution will be from 1. the freeway on the left and 2. the arterial street serving both the neighborhood and industries and the community shopping center complex at the bottom. One of the two most frequently advocated and used methods of screening is the planting of

trees and shrubs to form a thick greenway. Another would be to zone strips of land designated as a parkway in which a limited number of future houses and condominiums, three to six stories high, may be built parallel to the freeway.

If a neighborhood holds intra-neighborhood pollution to a minimum and does all it is physically possible to shield pollution from coming in from other areas, it will be in a strong strategic position to bring pressure on city officials to reduce pollution in the adjacent CBI corridors, the metropolitan area and pollution originating in more distant areas.

#### **Guidelines and Pilot Projects**

According to the 621-page report of the National Commission on Neighborhoods, released in 1979, federal, state and local governments do not even have a workable generally accepted definition of what a neighborhood is. (3) The neighborhoods treated in this paper are physical neighborhoods because they have come into being by being surrounded by CBI corridors. The people living in the cells may be a mixture of different ethnic, minority and/or economic groups. The people in the residential cells will need to cooperate and work together to maintain, upgrade and protect the neighborhood from physical encroachment and internal delin. A discussion of guidelines and a potential protective planning model for a neighborhood are only academic unless a great majority of the people will participate in dynamic neighborhood and community organizations.

There are now neighborhood redevelopment pilot projects in the United States. In Baltimore, the Coldspring neighborhood with approximately 12,800 people living in 3,780 dwelling units on 370 acres is being redeveloped as a pedestrian oriented district with only one road crossing the area. (4) When the redevelopment is completed children will be able to walk to school and neighborhood markets. Workers will be employed within walking distance of their homes.

#### **Literature Cited**

1. BARTON, THOMAS FRANK. 1970. The Urban Web Hypothesis. *Interplay: The Magazine of International Affairs*, Vol. 3 No. 13, pp. 43-47.
2. BARTON, THOMAS FRANK. 1978. *Conserving Energy and Natural Resources with a Web Pattern of Corridors*. Proceedings Vol. II, unpagged.
3. TIMILTY, JOSEPH F. 1979. *People Building Neighborhoods: Introduction, Summary and Recommendations*. U.S. Government Printing Office, Washington, D.C. pp. 1-358.
4. Safdie, Moshe and Associates. 1972. *Coldsprings*. George W. King Printing Company, Baltimore, pp. 6-93.