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CHAPTER 4: FITTING THE PIECES TOGETHER

So far, we have examined the pieces of Great Neighborhoods – the buildings, the people, the open spaces. Now, let’s look at how they fit together.

Anyone who has walked in a new or historic Great Neighborhood knows that they have a distinct and welcoming feel. What creates this? Great Neighborhoods are designed according to principles that guide the scale of development, the immediate interrelation of the elements, and the larger structure of how the elements are arranged.

NEIGHBORHOOD FORM

Size is everything. Or, in the case of Great Neighborhoods, *scale* is everything. And the fundamental criteria that defines neighborhood scale has not changed much since the earliest human settlements: a neighborhood shouldn’t be much bigger than a willing person’s walk.

Before the automobile age, this pedestrian-centric limit was absolute – a neighborhood by definition could not be bigger than the distance residents were willing to walk. This was even true of neighborhoods oriented to non-pedestrian transportation modes, such as trolleys or commuter rail stops, because once people got off the trolley or train, they still had to walk to their final destination. The dawn of the car changed the scale at which settlements could be planned, and the result was the dissolution of a walkable neighborhood as the organizing principle of urban and suburban landscapes.

The golden quarter mile

As a rule, people will only walk about a quarter of a mile – five to ten minutes – to get somewhere. (A quarter mile is one lap around an outdoor high school track.) People can be lured into walks of up to a half-mile if there is a significant “magnet” destination at the other end – a great shopping district, a sports event, or something similar.

People can also be induced to walk further than a quarter-mile if they don’t think that they are walking to *get somewhere*. This is the principle that indoor shopping malls depend on: the same shoppers who will gripe about the walk from the parking lot will nevertheless walk for miles inside, so long as the shops hold their interest. The same idea applies in well designed Great Neighborhoods. If the walk itself is a sufficiently attractive and a pleasant experience, people will stroll for the simple pleasure of strolling.

On the other hand, as soon as people decide that the distance is too great or the walk too dull, they will choose another form of transportation (most likely a car) instead. Or they will just not go.

Neighborhood size and “ped-sheds”

The quarter-mile walkable distance is the dominant factor in defining how big a Great Neighborhood should be. If you draw a circle to represent a neighborhood and place a neighborhood center in the middle, the quarter mile pedestrian distance becomes the radius. The resulting area is 160 acres. This area is what planners call a “pedestrian shed” (or just “ped-shed”).

In the real world, very few neighborhoods are perfect circles. They come in countless shapes and sizes. But all Great Neighborhoods – historic and new – are scaled to pedestrian



sheds that center on the neighborhood's important destinations: on its shopping districts, schools, churches, or civic buildings, or even on its "phantom" centers, such as now-gone streetcar lines.

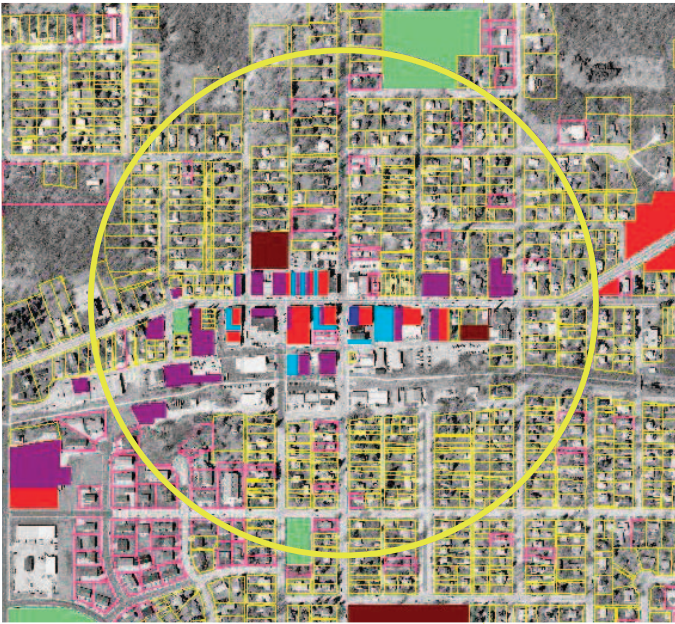
Neighborhood destinations are also more complex than simple points at the center of a schematic circle. They may be linear (like main street shopping districts), there may be several of them in different places, or they may be at the edge of a neighborhood rather than in the center. Each of these variations creates differently scaled and shaped pedestrian sheds, but neighborhood form remains a function of how far people will walk.

Defining the Neighborhood: Centers and Edges

Great Neighborhoods typically have a central focal point, within walking distance of most residents, that provides a forum for community activities and gathering. These focal "points" are actually complex layerings of public spaces (such as streets, parks, and plazas) and "semi-public" spaces (privately owned but publicly accessible spaces such as outdoor cafes and the areas between shops). Good neighborhood centers allow people to participate in public life in safe, clean, and attractive spaces. Historic main streets provide the quintessential examples of this layering of public and semi-public.

Many neighborhood "centers" are actually located at the edges of Great Neighborhoods, where they can serve not only as local focuses that rely on pedestrian traffic, but also as regional destinations that capture car traffic. Locating at the edge of a neighborhood allows destinations to provide additional parking without tearing holes in the neighborhood fabric. This helps sustain businesses by expanding their customer market and employment base. The same principle for capturing multiple markets (local pedestrians and regional drivers) also applies to civic buildings, parks, and other Great Neighborhood focal points.

For example, Tenney Park on Madison's East Side is located along the edge of the Tenney-Lapham neighborhood, and its playfields, ice rink, and picnic pavilion serve both neighborhood residents and park users from other neighborhoods. Similarly, Smith's Crossing,



Downtown MT. HOREB with a quarter-mile radius superimposed. Many different housing types and uses are located within this "pedestrian shed."



The commercial district of Atwood Avenue supports multiple pedestrian sheds.



a Great Neighborhood now under construction in Sun Prairie, will locate its new commercial district on the edge of the neighborhood to capture traffic from U.S. Highway 151.

Great Neighborhoods also have edges that not only define their boundaries, but give identity to the neighborhood as a place. In some cases, edges are physical barriers such as rivers or major arterial roads, while in others they are commercial districts that separate adjacent residential neighborhoods.

STREETS: THE BONES OF THE NEIGHBORHOOD

Houses, open spaces, commercial districts, and neighborhood centers and edges cannot work without a structure to define them and their relationships to one another. This structure – the “bones” of a Great Neighborhood – is the street system. Street layout and physical dimensions are essential factors in the success of a neighborhood.

The Grid

Street networks in Great Neighborhoods must accommodate multiple modes of transportation: cars, pedestrians, and bicycles. Grids and other interconnecting networks of streets accomplish this best for several reasons. Grids – as the name implies – work like electrical networks. They provide redundancy in the form of a large number of possible routes to vehicular travelers, thus alleviating congestion. Meanwhile, the grid’s multiplicity of possible routes allows pedestrians relatively direct paths from one point to another.

Grids also feature frequent intersections and other passive obstacles that “calm” auto-traffic, making it easier for cars and pedestrian traffic to coexist. In addition, in Great Neighborhoods, residents can walk to neighbors, parks, and shopping areas without having to use major arterial streets. Finally, grids connect to the outside world in more places, making Great Neighborhoods more integrated with the larger community.



The streets of Great Neighborhoods provide internal connectivity as well as connecting to adjacent areas.



Dead-end streets and cul-de-sacs allow fewer travel routes and lengthen walking trips.

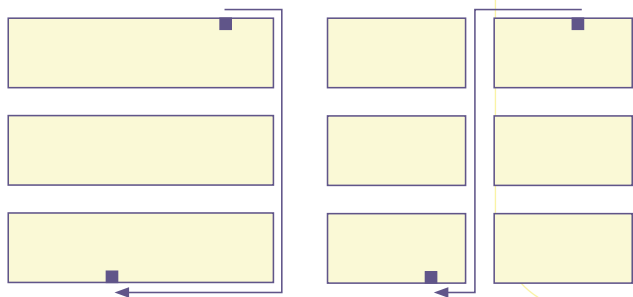
Suburban traffic planning, in contrast, favors hierarchical street systems that function more like sewage systems. They collect cars from individual driveways, direct them onto local streets, then onto arterials, and finally, they are flushed out onto limited-access highways. Cars and people generally cannot get from one local street to another without going out onto arterials, and many local streets are dead-ends or cul-de-sacs.



Grid-type street networks need not be the familiar “gridiron” of most American downtowns. Grids do not even need to be rectilinear. The street network can consist of curved streets (a “curvilinear grid”) or diagonals to better adapt to topography, accommodate natural features, or simply generate visual interest for pedestrians and drivers. The essential quality of the street-grid is not that it is really a “grid” at all, but that its pathways are interconnected.

Short blocks

Another quality shared by most Great Neighborhoods is short blocks. Blocks are typically no more than 400 to 600 feet long, and a walk around a block’s perimeter is about 1600 feet. Small blocks provide greater visual interest, shorter walking distances, and a greater choice of routes than longer blocks.

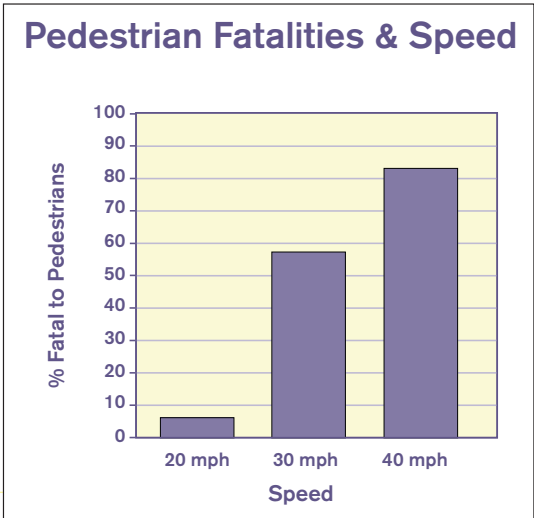


The street grid at left has long blocks, forcing a longer route for someone trying to get from north to south. The short-block grid at right provides cut-throughs and thus a shorter path, and fewer cars.

Comparing the diagrams demonstrates another advantage of short blocks: they allow a variety of possible routes. Choice of walking route allows pedestrians to select the most pleasant route, vary their route, and make stops along the way more easily. The combination of shorter walking distances and more travel options means that residents are more likely to choose to walk. They will also become more familiar with more of their neighborhood, and thus more of their neighbors.

Traffic Speed and Traffic Calming

The narrow streets of Great Neighborhoods also help to slow vehicular traffic, something that is essential if streets are to accommodate pedestrians as well as cars. Drivers tend to travel at whatever speed feels comfortable, regardless of posted speed limits. On a wide, straight road with buildings set far back from the right-of-way, drivers feel comfortable traveling at speeds of 35 miles per hour or more. On narrower streets with parked cars, street trees, frequent intersections, and buildings closer to the right-of-way, drivers will feel uncomfortable at speeds much greater than 20 miles per hour.



Slowing traffic on neighborhood streets is essential for pedestrian safety. Collisions between cars and pedestrians tend to be non-fatal when the car is going less than 25 miles per hour, and fatal when the car is going more than 25 or 30 miles per hour. Above 40, accidents are almost always fatal for pedestrians.²⁰

Credit: The Congress for the New Urbanism.



A Variety of Great Neighborhoods' Street Types

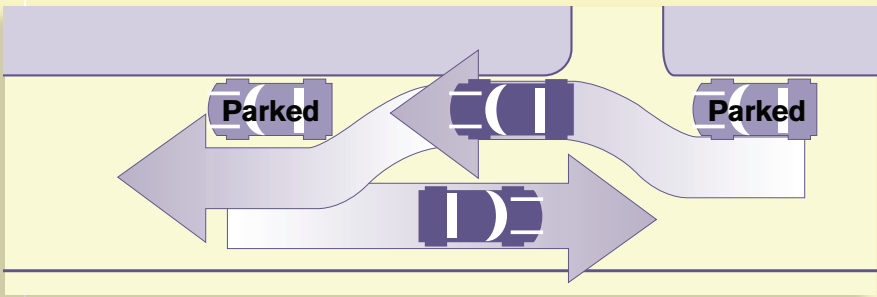
Neighborhood streets with dimensions that are within certain design parameters provide the best results in terms of creating viable public space, slowing traffic, and creating a safe and appealing environment for walking and biking. Many types of streets can be built to human-scaled dimensions, and as a result, a wide variety of street types work well in Great Neighborhoods.

1. The yield street is a low-traffic type of street that accommodates two-way traffic, but is only wide enough for one direction to pass through at a time, because it's between 26 and 28 feet wide, comprised of a 12-foot travel lane with seven- to eight-foot wide parking lanes on either side. Cars pull to the side to allow each other to pass. On both sides of the street, seven- to ten-foot planter strips provide space for grass and trees, and five-foot-wide sidewalks provide pleasant places to walk, use a wheelchair or a stroller (five feet is the minimum width for two people to comfortably walk side by side). All of this taken together comprises the public right-of-way (ROW), which in this case is between 54 and 60 feet wide.



Typical dimensions for a Great Neighborhood residential “yield” street.

Yield streets help calm traffic by design. A typical car is about six feet wide, so when two cars approach, one must yield to the other (see Figure below). A yield street will commonly be used in low-traffic portions of neighborhoods – often in areas with detached houses – and where through-traffic is minimal. The presence of driveways and the lower density of homes ensures adequate space for passing as well as for large trucks and emergency service vehicles to operate.



A “yield” street in action. The car headed left pulls to the side to allow the car headed right to pass by.

2. Other primarily residential streets may be a little wider to accommodate higher volumes of traffic, or narrower with restricted parking to serve a small number of homes.
3. Main street commercial streets are designed to create great shopping streets. They allow on-street parking, unobstructed travel lanes, and ample room for sidewalks, trees, and street furniture. Main streets also have buildings set at – or very close to – the right-of-way.

4. An avenue-type street may collect traffic from local streets and connect major destinations, such as a shopping district and a neighborhood center. A boulevard, with travel lanes separated by landscaped median, can also be located on the edge of a neighborhood and serve to efficiently handle through-traffic in an attractive setting.



This photograph demonstrates how the balance between people and cars actually looks. West Washington Avenue in Madison becomes less pedestrian-friendly as the street widens and sidewalks become narrower.



This narrower 20-foot-wide street is only one block long, serving local residents almost exclusively. The rules restricting traffic to one-way and parking to one side are policies that could change to suit local traffic needs and neighborhood policies.



Main Street in downtown Stoughton.



This street in the new neighborhood of Grandview Commons in Madison functions as an avenue, connecting a neighborhood park to the commercial center.



This 32-foot-wide street serves as a collector to handle higher levels of neighborhood traffic.



Erdman Boulevard, Middleton Hills.

On-street parking is generally permitted on local streets. A 26-foot-wide roadway is the typical cross-section used in many urban residential areas. This width assures one through-lane, even where parking occurs on both sides. Specific parking lanes are not usually designated on such local streets. The lack of two moving lanes may be inconvenient to the user in some cases; however, the frequency of such concern has been found to be remarkably low. Random intermittent parking on both sides of the street usually results in areas where two-way movement can be accommodated.

-- American Association of State Highway and Transportation Officials (AASHTO)²¹

NEIGHBORHOOD ELEMENTS: RELATING TO THE STREET

Because the streets – the bones of the neighborhood – are so important to how a Great Neighborhood functions, it is essential that buildings in such neighborhoods are thoughtfully placed in relation to the streets.

Commercial and Civic Buildings

As a rule, Great Neighborhoods will include a relatively higher density, mixed-use area – what is called a “main street” district (although it may be on more than one street). Such a district is typically the core of the neighborhood; and ideally everything else is within a quarter-mile walk.

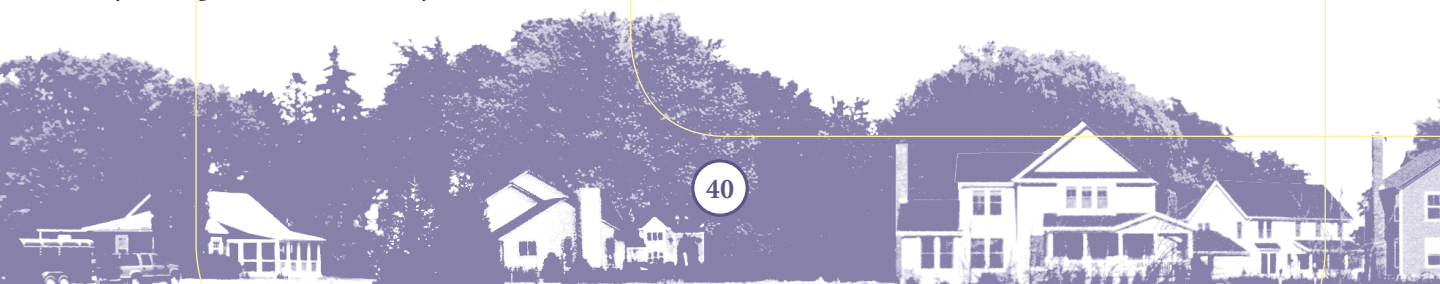
Main street districts provide basic retail amenities (such as drug stores, small grocers), other shops and restaurants, and central civic spaces (including plazas, public buildings, and even the street itself). Buildings in main street areas are usually two or more stories and are built right up to the property line. Upper floors are usually occupied by offices or residences. Storefronts are largely glassed, to showcase merchandise and to add visual appeal to the street experience, and often shops and cafés will spill out onto the sidewalk.



Prairie Cafe Building in Middleton Hills, west of Madison.

The scale and intensity of main streets vary, depending on the size of the neighborhood and community. Downtown and neighborhood cores in mid- to large-size cities will have sizable main street districts that may extend for dozens of blocks, while small villages may have a block or less of main street.

Civic buildings such as city halls, libraries, and community centers are also commonly found in main street areas. Civic buildings in Great Neighborhoods are a significant convenience to the residents, provide venues for public life, and bring additional customers to commercial districts.



Great Neighborhoods may also include areas that are primarily for workplaces, such as offices and light manufacturing. These “mixed employment” areas are typically configured similarly to a main street area, with multi-story structures that face the street, although the predominant activity will be employment instead of retail. Many areas are also able to blend employment and main street activities.

Parking

Parking is an essential amenity for retail. Although Great Neighborhoods are designed to encourage walking and bicycling, they do not seek to punish drivers. Furthermore, pedestrians and bikers rarely provide a sufficient customer-base for business. Parking in Great Neighborhoods is placed artfully, mixing very visible locations and not-at-all visible ones. Cars are either parked on-street or in parking lots (or structures) that are shielded from view by buildings with street-appeal.



Cambridge’s pedestrian-friendly Main Street.

On-street parking is the old-fashioned solution to all parking – in many older urban areas, it is the only option. On-street parking has numerous advantages over other configurations. It helps to buffer pedestrians from street traffic, narrow travel lanes to slow traffic, and create energy and hustle-bustle along main streets and other active areas. Great Neighborhoods also provide ample parking close to building entrances for people with disabilities.



On-street parking provides spaces for cars and buffers pedestrians from traffic.

On-street parking has one huge disadvantage, however: there are generally not enough spaces in close proximity to meet the needs of most modern businesses. Therefore, the majority of parking in Great Neighborhoods is best set behind buildings and accessed via side streets or alleys. Parking lots along the street and between buildings break up the visual continuity of the street and reduce the usable commercial square-footage of the district, reducing its value. Placing parking at the rear avoids creating an unappealing environment for pedestrians.





Parking is provided at the rear of shops on Main Street in downtown Sun Prairie.

If parking behind buildings is not an option because of lot dimensions, limited access, or other site restrictions, parking can be placed beside buildings with a visual barrier (such as landscaping or an attractive short fence or wall) separating parking from the sidewalk; this lay-out at least allows retail buildings to front directly on the street. Also, because people have become accustomed to being able to find easy parking, it is important that Great Neighborhoods' commercial districts have signage and way-finding showing drivers where to find ample parking.

In extremely dense and active areas with very high parking demand, providing sufficient surface parking to meet demand risks creating

huge “dead spaces,” even if the parking is creatively located. In such cases, structured parking becomes an appealing option. Contrary to the common perception, parking structures do not have to be ugly. New structured-parking designs have interesting façades, and some even house retail businesses at street level. In some places, parking can also be contained completely underground, with retail and businesses at the ground level and above.

Residential Buildings

Great Neighborhoods do not segregate residential uses from non-residential uses. They allow different uses to mix, as they did in small towns and neighborhoods before the advent of modern zoning.



A Madison bungalow near the Williamson Street commercial district.

Often, main street buildings will have apartments above street level – this is almost always the case on historic main streets. Residential buildings near main streets tend to provide higher-density living, including multi-family buildings and townhouses. Single-family homes are also often located close to main street districts. Such homes usually face the street, and they are built on the lot fairly close to the street. Garages are typically located behind the house facing an alley, or set beside or behind the house and accessible by a front driveway. Smaller commercial spaces such as corner stores, home offices, or neighborhood bars are allowed in residential areas of Great Neighborhoods.

Parks, Plazas, and Other Open Spaces

In Great Neighborhoods, the spaces not occupied by streets or structures are deliberately designed so that they can serve as quality open spaces. These open spaces can take the form of squares, plazas, and parks.



Squares are typically a block in size, surrounded by streets, and faced by the building frontages across the street. They are usually found in higher density areas such as village centers or downtowns, and they are designed to function as outdoor rooms for the surrounding structures – places to eat lunch, take a walk, or read a book. Many squares have facilities for outdoor concerts or other civic events. Squares typically consist of green space with formal arrangements of landscaping, pavilion-type structures, and benches.

Plazas are also located in higher density, urban or village-center environments. They are smaller than squares and usually consist of harder surfaces. Like squares, plazas face the street and are intended for passive uses. They add visual variety to the streetscape and to provide places for shoppers, workers, and other pedestrians to rest during busy days.

True parks are significantly larger open areas, usually with open lawns, trees, shelters, picnic tables, and playground equipment. Parks are dedicated to active play as well as passive recreation and the enjoyment of nature. As a rule, parks are either integrated into neighborhoods, with buildings fronting the park, or located at the edge of neighborhoods, with ball fields and larger open spaces for active recreation.



Oakridge Street in Madison's Atwood neighborhood is comfortable, intimate, and inviting. It is 28 feet wide.

IN SHORT ...

The elements of any development – the houses, commercial buildings, parking, open spaces, streets, and so on – are always laid out in relation to each other. What makes Great Neighborhoods distinct from other types of development is that the relationships between elements are always designed to create vitality, variety, and visual interest. Elements, people, and uses are deliberately mixed.