

LAND DEVELOPMENT COSTS

Comparisons indicate Reston's land development costs are higher than most neighboring counties in Virginia, Maryland and similar areas in states which have a more expensive labor market. A factor which should be mentioned is that Reston is producing a higher quality product than most developers, who acquire much smaller tracts around a city and spend three to five years building a shopping center surrounded with houses. However, this report deals only with direct comparisons, costs of design, compliance with regulations, the construction process and the process of turning the finish work over to the public agencies.

Until recently, the county was as complacent as a few of its neighbors. Lake Barcroft is an example wherein Fairfax County has had to spend hundreds of thousands of dollars in maintenance and rework after accepting poor design and workmanship from the developer. It had no effective developer control until awakening one day to find itself the fastest growing county in the United States. Inside of a year, it became diametrically opposed to its former self and began exerting strenuous control over construction, roads, drainage, etc. Reston emerged at the end of this transition period, and Fairfax County had not yet built up the strength necessary to process its statutory requirements under the pressure of heavy growth. Consequently, there were long delays getting engineering approvals from the county because of its shortage of help and fear of approving something wrong. In fact, it still takes three months to obtain approval of a plat. After watching county inspectors check Wainwright Drive before paving, it appears Fairfax could soon be the slowest growing county in the United States.

The current procedure is for the county to make construction progress inspections. When work in a right-of-way is completed, the state inspector is called in to accept it for the Virginia Department of Highways. Three full-time inspectors are assigned to Reston, and we have had the experience of an inspector requiring accuracy of the finish base to one-sixteenth of an inch before paving. Other problems include wider than usual paving width requirements and the fact that most authorities, including the Virginia Department of Highways, accept a stabilized base. This does not dissuade Fairfax County from requiring stone under it, which eliminates its economy. Base stone testing takes three or more days to obtain results. We are subject to spreading the stone, sometimes finding after several days it does not meet specifications and then having to remove it. If samples were taken from the quarry before

delivery, this delay and consequent exposure to great additional cost would be eliminated. The Virginia Department of Highways uses a 50⁰ paving criterion. However, the county paves by the calendar and will not allow paving between November 16th and April 1st. This results in an extreme hardship in lost productivity and the necessary rework of roads left unpaved past the deadline, sometimes because of "white glove" inspection practices.

The design of storm drainage is based on a one hundred year flood plain instead of the usual fifty year flood plain. The design of secondary storm sewerage to this criterion is costly and unnecessary, particularly when most of our drainage goes underground. Corrugated metal pipe should be considered for secondary streets in lieu of the required reinforced concrete pipe. When box culverts are used, they must be designed on the basis of one hundred year storm with an additional one foot freeboard.

Water supply mains are constructed in Reston under the supervision of the Fairfax County Water Authority who will accept and maintain them. All mains are required to be cast iron. Cement asbestos pipe has been in use in water distribution systems all over the United States for over thirty-five years. The six inch size can be installed at a savings of about \$1.00 per foot and larger sizes at a much greater saving. Cast iron is in general use in the area, and it is going to be difficult to lobby in transite. However, it is a sizable factor if development costs are to be more uniform with adjoining areas. There are two requirements of the Fairfax County Water Authority which are new in our experience and materially add to the cost of property development. The Water Authority insists upon cut sheets, a stake out for the lines, and setting the water meter boxes into the shoulder at the same time the tap is made and water service extended across the road. The shoulders have to be brought to grade before this work can be done. Other utilities follow water, and the contractor is again required to bring the shoulders to grade prior to installing the sub-base. Efficient use of high production equipment is impossible because of the presence of the meter boxes.

We have had to tie up large amounts of money because of the requirement of paying the sanitary sewer availability fee prior to issuance of the plumbing permit, regardless of the size of the tract being developed or the remoteness of the date when the sewer would actually be used. A persistent field problem is no work can begin until the sewer inspector appears with the approved cut sheet. If he is late, men and equipment stand idle. To avoid loss of equipment and manpower time and the usual upset in scheduling because of a tardily approved cut sheet, the contractor should be allowed

to proceed. He is held responsible for correction of the work, and there is no possible danger to the sewer authority.

With the exception of roads and drainage, each increment of work in a right-of-way is controlled by a separate agency with its own axe to grind. Construction plans are sent to the various agencies for approval before work can proceed. There is an unhappy lack of acceptance of the state's registered engineers' certifications by the authorities, and the county is all but designing the work. The state and county should not register engineers in whom they have no confidence.

A serious problem is the coordination of the final state inspection. It is very formal, and several days are spent cleaning the road, cleaning the storm sewerage, honing shoulders and making minute patches in the curbs. Thursday is our inspection day, and if it happens to rain on Tuesday or Wednesday, the inspection is cancelled and most of the work must be done over again. The county, as a political subdivision of the state, should be authorized to accept the right-of-way on behalf of the state. The county inspection, starting with clearing and grubbing and continuing through the whole construction process, is infinitely more exacting than the state inspection, which is often little more than a "ribbon cutting ceremony."

The purpose of this report is to summarize obvious problems which will bring to light other problems, and we can begin to establish some corrective goals. A comparative analysis must be made of all the codes, engineering approvals and inspection procedures to determine their effect on cost. Where it can be shown the requirements are in excess of good and accepted practice, effort should be made to change them.

Costs related to regulation should be separated as much as possible from elective expenditures in order that the comparisons be direct. The job is easier than one may assume because much of the information is available as a result of continuing surveys and studies by builder and developer organizations such as the N.A.H.B.

An effective survey could consist of the following:

1. Compare Reston with other Fairfax County developments.
2. Compare Fairfax County with contiguous counties.
3. Compare the area in No. 2 above with an area similar in economy, size and relation to the Washington Beltway.
4. Compare the suburban "doughnut" created by the Washington Beltway with another megalopolitan area similar in size and

economy. (Preferably Baltimore because of Columbia.)

5. Summary.

Some items to be compared are: (a) use of materials such as plastics and transite pipe; (b) road engineering requirements; (c) flood plain criterion; (d) land use limitations (note parking ratios); (e) filing, permit, inspection and other fees; (f) inspection procedures, and (g) production costs.

These problems are proportionate to the size of the developer. Small operators and even large odd-tract developers can recognize them, make adjustments between tracts and stay in the market. An undertaking the size of Reston includes large additional investments in master plan improvements, which will eventually be returned. However, it is imperative the problems set forth herein receive a fresh approach. The courage of Reston will be its survival, but continued use of the concept by others is endangered. If present trends continue, the real survivors will be the historical hundred acre tract developers breeding urban sprawl.

It is believed this survey is a necessary increment of the low cost housing demonstration program.

WESTINGHOUSE PARKING STUDY

Following is a report prepared by Mr. R. Wayne Nelson of Westinghouse Corporation entitled "Comparative U. S. Residential Off-Street Parking Ratios."

The ASPO Planning Advisory Service Report No. 24 states: "While the requirements for multi-family units normally are lower than those for detached homes (or attached townhouses), in some instances a requirement of one space per single-family home (detached or attached) is raised to one and one-half space for apartments (including row-house walk-up flats or maisonettes, low-rise garden apartments and high-rise apartments), especially in the suburbs."

Examples of political jurisdictions where apartment parking ratios are greater than for single detached dwellings are: New Canaan, Connecticut; Rye, New York; Reston, Virginia; Shaker Heights, Ohio; Warren, Michigan; Lubbock, Texas; Ogden, Utah; Fremont and Modesto and San Jose, California.

The philosophy in this approach seems to be that clusters of single detached dwellings or attached townhouses are developed at relatively low densities on spacious sites with ample and accessible on-street curb parking space. Conversely, apartments generate higher densities, compact sites, deficient nearby on-street curb space (especially for visitors), and congested accessways to parking lots or decks.

Therefore, the apartment or multi-family off-street parking ratios are greater not because of an assumed higher car ownership per dwelling unit but because of greater need to guarantee space at higher densities of development.

The above-referenced report further states: "In some cases, the requirements are geared to the size (number of rooms) of the dwelling unit. This is especially true for apartments and is apparently based on the assumption that the occupants of large apartments are likely to own more cars than the occupants of efficiency and one bedroom apartments."

Required off-street parking ratios for apartments are also geared to the number of bedrooms or bathrooms in the dwelling unit; number of stories and number of dwelling units in the apartment building; and rarely -- the maximum F.A.R. (Floor Area Ratio) or per acre density of dwelling units on the building site. Examples for each variable (except the latter two) and the formula for reduction in parking ratio that it provides are set forth as follow:

<u>VARIABLE</u>	<u>JURISDICTION</u>	<u>FORMULA</u>
Number of Rooms per dwelling unit	Merced, California	Reduction: 1.5 spaces to 1.0 per dwelling unit under two rooms
as above	Mesa, Arizona	Reduction: 1.0 spaces to 0.6 per dwelling unit under two rooms (excluding kitchen and bathrooms)
as above	Los Angeles, Calif.	Reduction: 1.25 spaces to 0.0 per dwelling unit under three rooms
as above	Mountain View, Calif.	Reduction: 2.0 spaces to 0.0 per dwelling unit under two rooms (excluding kitchen and bathrooms)
Number of Bedrooms per dwelling unit	Alexandria, Virginia	Reduction: 1.5 spaces to 1.25 spaces per dwelling unit under three bedrooms OR 1.0 per dwelling unit under two bedrooms
Number of Bathrooms per dwelling unit	Palm Springs, Calif.	Reduction: 3.1 spaces to 2.1 spaces per dwelling unit under three bedrooms OR 1.1 per dwelling unit under two bathrooms
Number of Stories per building	Portsmouth, Virginia	Reduction: 1.25 spaces to 1.0 per building under six stories
Number of dwelling units per building	Merced, California	Reduction: 1.5 spaces to 1.0 per building under four dwelling units
as above	Los Angeles, Calif.	Reduction: 1.25 spaces to 1.0 per building under seven dwelling units

Some tentative conclusions may be drawn using the foregoing documentation:

1. Within a given political jurisdiction, it is not unreasonable to expect some suitable variation in minimum off-street parking requirements for distinctly different apartment or multi-family developments. This variation should recognize that a different mix of large and small dwelling units or a different building scale in number of stories or total number of dwelling units can generate significantly different parking demands. Aside from single detached dwellings or attached townhouses, a one level garden apartment complex or row of maisonettes above ground level stores or medium-rise or high-rise apartment buildings can warrant different guarantees of minimum parking space.
2. Based upon existing precedents as shown above, perhaps a near-optimum variable off-street parking ratio for apartment or multi-family development may be structured in this way:

Establish a basic minimum ratio (typically 1.25 or 1.5 spaces per dwelling unit) which is greater than required for single, detached or attached houses; then allow for combination reductions for a building or building complex which does not exceed a certain per-acre site density of dwelling units or rooms, or a certain F.A.R., and a certain number of stories or dwelling units, and for a dwelling unit which does not exceed a certain number of total rooms, bedrooms or bathrooms.

For example, a composite reduction formula may read:

For less than 21 dwelling units per building having less than 4 stories--a permissible reduction to 1.25 spaces per dwelling unit having less than 4 rooms (excluding bathrooms) and less than two bathrooms, and a further permissible reduction to 1.0 spaces per dwelling unit having less than 3 rooms (excluding bathrooms).

Additional reduction could be allowed for buildings having less than seven dwelling units, and for dwelling units within a mixed use building where commercial off-street parking (daytime peak demand) is pooled with residential parking space (nighttime peak demand), and for buildings adjacent to institutional parking space (spurious demand) where such space is similarly pooled.

3. It may be desired to require that any increment of off-street space in excess of 1.0 per dwelling unit (or other suitable ratio) be located on the site and designed explicitly to accommodate visitors rather than occupants.

4. Obviously many combination reduction formulae incorporating the foregoing separate criteria are capable of application to apartment or multi-family construction. And there are probably other more or less valid criteria not cited herein such as those reflecting proximity to a major central city and rapid mass transit. Nonetheless, the citations of parking requirements represent precedents upon which to base similar or further reform of public ordinance requirements that are unrealistically or unfairly inflexible.