A LAND USE PLAN FOR THE
WESTERN ENVIRONS OF FREDERICK, MARYLAND

To
The Mayor and Board of Aldermen
of Frederick
and
The County Commissioners
of Frederick County
1965

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Consulting City Planner
Richmond, Virginia
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Scope of Study

This is a plan for urban development in the area generally west, southwest, and northwest of Frederick City, extending from below Peasaville to Indian Springs. The plan is based on the installation of water and sewer facilities wherever feasible in the area, as contrasted with previous development plans by Frederick County and the City of Frederick that did not contemplate the early installation of these utilities. This new plan of development is related to the officially adopted Major Street and Highway plans of the City and County and the latest available plans from the State Roads Commission as to interstate and other primary highways. Certain changes in these plans, or additions, are recommended herein for proper coordination of highways with the desirable land use pattern and to assist in promoting the best possible development, in each part of the area. The plan takes into account such factors as topography, drainage, existing development, the trend of growth, the suitability of land for various uses, and other pertinent factors, and indicates desirable locations for schools, recreation areas, shopping centers, and other community facilities. It is correlated with the Comprehensive Master Plan for Frederick City, being in effect an extension of that plan, and is coordinated also with the general Land Use Plan and other plans of Frederick County.

Two important studies of this area have recently been made that were basic to the present plan. One was a Water Supply Study (1963) and the other was a report on a Basic Sewerage System (1964), both by Benjamin E. Beavin Company, Consulting Engineers, of Baltimore. The findings and recommendations in these reports provided basic guides for the recommendations herein. Other controlling factors included the existing zoning regulations, particularly those recently adopted by the City of Frederick for the territory lying within one mile of the City boundary, and various population studies and projections.

Present and Prospective Developments

The study area is divided geographically into three major drainage basins as shown on Plate 1. These are most significant in planning the sewer systems. To the north is the Tuscarora Creek Basin which drains into the Monocacy River above Frederick. To the south is the Ballinger
SEWERAGE PLAN
WEST FREDERICK AREA

THE MAYOR & BOARD OF ALDERMEN OF FREDERICK
THE COUNTY COMMISSIONERS OF FREDERICK COUNTY MARYLAND

JULIUS TARZANT PLANNING CONSULTANT
Creek Basin, and in the center is the Carroll Creek Basin which drains through the City and eastward to the Monocacy River. That part of the Carroll Creek Basin which lies within the city is presently sewered by a trunk line down Carroll Creek to a disposal plant at its mouth. Basic sewerage systems have been planned tentatively for substantial portions of all three basins outside of Frederick City, covering a total area of 31,500 acres or nearly ten times the present city area. These proposed sewerage areas had a combined population of 6,300 in 1960, or less than one-third of the city's population. By 1980 they are expected to have about 29,000 people, and by 2000 possibly 60,000 people. If fully developed they could accommodate an estimated 150,000. These figures are all from the Beavin report on sewerage facilities. Details are in the following table.

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<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Carroll Creek Basin (west of city)</td>
<td>6,500</td>
<td>3,100</td>
<td>12,300</td>
<td>19,300</td>
<td>36,000</td>
</tr>
<tr>
<td>Ballinger Creek Basin</td>
<td>14,000</td>
<td>1,800</td>
<td>9,300</td>
<td>23,200</td>
<td>64,000</td>
</tr>
<tr>
<td>Tuscarora Creek Basin</td>
<td>11,000</td>
<td>1,400</td>
<td>7,700</td>
<td>17,500</td>
<td>50,000</td>
</tr>
<tr>
<td><strong>Sub-totals</strong></td>
<td><strong>31,500</strong></td>
<td><strong>6,300</strong></td>
<td><strong>29,200</strong></td>
<td><strong>60,000</strong></td>
<td><strong>150,000</strong></td>
</tr>
<tr>
<td>Frederick City</td>
<td>3,200</td>
<td>21,750</td>
<td>30,000</td>
<td>35,000</td>
<td></td>
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<tr>
<td><strong>Total Area</strong></td>
<td><strong>34,700</strong></td>
<td><strong>28,050</strong></td>
<td><strong>59,200</strong></td>
<td><strong>95,000</strong></td>
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*Beavin report on Basic Sewerage System, P. III-1.

The heaviest development so far, it will be noted, is in the Carroll Creek Basin west and northwest of the city. There are nine active subdivisions covering 689 acres in which more than 200 homes have already been built. Several more subdivisions of substantial size are in the planning stage in this basin. By contrast, there is only one major subdivision in the Ballinger Creek Basin, with 52 lots but no houses yet. There are several developments in the Tuscarora Basin, concentrated mainly in the Yellow Springs section, with an aggregate of 181 acres and 115 dwellings. Current developments are concentrating mostly in the Carroll Creek Basin and this includes a substantial amount of business development along U. S. 40. Plate 2 shows the nature and extent of existing development throughout the area.
Future population estimates were given in the Beavin report, some of which are cited above in Table 1. In these three basins the areas proposed for sewerage are expected to contain over 29,000 persons by 1980, and 60,000 by 2000, in addition to the population of Frederick City itself. These figures were based on an assumption of 138,000 for the entire county by 1980 and 200,000 by the year 2000. The figures anticipate a modest growth in the present city and major developments in the surrounding areas, on the assumption that water and sewer facilities can be installed.

By reference again to Table 1 it will be noted that the proposed sewerage areas outlined in the Beavin report were estimated to have a capacity for 160,000 people when fully developed. This is 2-1/2 times the population expected by the year 2000, or 5 times the expected 1980 population. The basic sewerage system covers a vast area that will take perhaps half a century to develop. It must therefore be undertaken gradually in systematic stages. During the first fifteen years, up to 1980, only about 20% of the total area will be needed to house the 29,000 expected population according to the Beavin calculations. Obviously it would be grossly inefficient and financially impracticable to allow this 20% to become scattered over the entire 31,000 acres.

Orderly growth, and the economics of financing not only the water and sewer systems but other public improvements as well, require that the first few years of development be confined within a fairly limited area and that additional areas be opened up only as the utilities can be extended.

An examination of the Beavin report on water supply and distribution shows that there should be no problem in serving any part of the three basins. Water can be distributed up to about elevation 400 without booster pumping, and higher levels can be served by pumping stations and additional storage tanks for each successive pressure zone of about 120 feet elevation.

Sewers are another matter. Gravity sewers must be related to the natural drainage basins if expensive pumping is to be minimized or avoided. The Beavin proposals follow this principle. One system of sewers would be installed in the Tuscarora Basin, draining to the Monocacy River where the sewage would be pumped to a treatment plant above Glade Creek or carried by interceptor line to the Frederick treatment plant.
Another system of sewers would be installed in the Ballinger Creek Basin with a treatment plant on the Monocacy River at the mouth of Ballinger Creek. A third system of sewers would drain the Carroll Creek Basin above Frederick City, and because of the inadequate interceptor capacity through Frederick it was proposed that the sewage from this area be diverted by pumping into the Ballinger Creek system to the south. The Carroll Creek and Ballinger Creek systems would therefore be inter-related, while the Tuscarora Creek system would be separate and independent. The basic systems for the Carroll Creek and Ballinger Creek Basins are shown on Plate 1. Each system consists of a number of gravity interceptors flowing to a central point, with a pumping station at the confluence of Carroll Creek and Rock Creek from which the sewage from this basin would be pumped southward to the head of a gravity sewer down King Branch and into the Ballinger Creek interceptor. The treatment plant for the latter system is off the map to the southeast.

This is a long-range plan, scaled for possible developments well beyond the year 2000. An early start was recommended on that part of the system which is feasible now, with additional construction in increments as they become financially feasible. Initial development in the Carroll Creek Basin could possibly be handled temporarily through the existing City interceptor down Carroll Creek to the City's existing treatment plant, while initial development of the King Farm in the Ballinger Creek Basin could be served perhaps by a temporary treatment plant near the head of King Branch. The second step would be to construct the Carroll Creek pumping station and force main, linking the two systems together and opening the door to further development of the Carroll Creek Basin west of the city. The Carroll Creek interceptors, pumping station, and force main were estimated to cost $4,480,000, and the first 6,500 feet of the King Branch interceptor would cost $175,500; for a total of $1,355,500 plus a temporary treatment plant below the King Farm, of undetermined size and cost.

To develop the Ballinger Creek Basin would necessitate the extension of the King Branch interceptor at an additional cost of $621,800; a five-million-gallon treatment plant at $2,190,000, and additional interceptors along Ballinger Creek and its tributaries at a cost of $823,400. This adds up to nearly $3,300,000 additional cost to develop the Ballinger Creek Basin, a very extensive area involving long and expensive interceptors. The Carroll Creek Basin is much more compact and better adapted to staged development by normal expansion from the present city limits westward.
It is recommended that urban type developments to the west of Frederick be held for at least the next 15 years primarily within the bounds of the Carroll Creek Basin, plus some development immediately south of the city in a portion of the Ballinger Creek Basin as shown on Plate 3. The more immediate developments should be clustered as near the city as possible so as to minimize the cost of water and sewer installations in accordance with the Beavin Plan. Normal expansion would be upstream (westward and northwestward) in the Carroll Creek Basin by simple extension of the gravity interceptors, while in the Ballinger Creek Basin the expansion would be downstream from the headwaters of King Branch and Arundel Branch. The recommended plan of development for these areas will accommodate an estimated 55,000 population at an average of 5,000 per square mile, which will be adequate for the estimated 1980 population of 29,200 for all three basins combined (see Table 1), if only 53% developed. This would be an average density of 3,200 persons per square mile. The plan thus provides almost twice as much area for urban development as is likely to be needed in the next 15 years, without making any allowance whatever for potential growth to the north, east, or southeast of the city. Such developments would tend to reduce the demand for space in the Carroll Creek Basin.

Urban-type development calls for R-2, R-3, and other zoning classifications of a more intensive nature than the R-1 zoning which now applies to most of this area. The R-2 zoning (both City and County) permits residential developments of up to about 3 families per gross acre as compared with 1-1/2 families in the existing R-1 and A-1 zones. The County's R-3 zoning allows densities up to about 4 families per gross acre while the City's R-3 zoning permits up to 6 families per acre. Such densities are normally required in order that water and sewer facilities can be installed at a reasonable cost per dwelling unit.

Existing business developments must be recognized as well as the various public and semi-public establishments, and provisions should be included for their expansion. Allowance has been made for Fort Detrick, the County Home, St. John's High School, and certain others. The recommended business zoning recognizes existing commitments and provides for some additional shopping centers at strategic locations to serve the new residential neighborhoods.
Several new elementary schools will be required to serve the anticipated population in this area. Based on the Master Plan studies for the City of Frederick in which it was found that for every 1,000 of total population in 1960 there were 97 children enrolled in the elementary grades 1 through 6, and that by 1980 the ratio will probably be about 95 per thousand, it appears that for every 6,300 persons there will need to be one elementary school of 600 pupils capacity. This means that by 1980, if the population reaches 29,000 or more, there will be a need for 5 schools in the area, and when the area is fully developed to its 55,000-population potential it will require 7 schools. Suggested general locations for these schools are shown on the Plan.

In keeping with the principle of well-planned residential neighborhoods, there should be a series of neighborhood units each containing a neighborhood school, park and playground combination, centrally located and away from heavy traffic. Such an arrangement is accomplished by judicious spacing of major thoroughfares and placing of non-residential developments including business and others. Because of the existing pattern of development it is not always possible to achieve the ideal, but the plan does accomplish these objectives to a satisfactory degree. Each of the school-and-recreation centers should have a site of 15 to 20 acres or more, and wherever possible it should be contiguous to a larger park or parkway.

The recommended pattern of residential developments for the area contemplates an extension of the present low-density single-family zoning from inside the city on up the valley of Rock Creek into the foothills of Catoctin Mountain, and along the heights between U. S. 40 and Butterfly Lane. The same zoning would apply in the Rocky Springs area. These are choice residential properties in which a relatively high standard of single-family development has been started and should be maintained. The somewhat higher-density R-3 zoning under which garden housing projects may be authorized is recommended for the southern fringes of the area which are in closer proximity to the future Interstate Highway and its interchanges. More intensive apartment developments are suggested near the two principal traffic centers and along those stretches of West Patrick Street that are not already zoned for business. These areas could include some taller apartments if liberal open spaces are provided around them.
them. The steeper slopes of Catoctin Mountain do not lend themselves to intensive development and are recommended for R-1 zoning except where presently zoned for conservation purposes.

Existing business zones are retained and some additional areas are indicated, particularly at the principal highway interchanges where B-3 zoning is recommended, and at some of the neighborhood crossroads such as Rocky Springs where more limited types of neighborhood zoning will provide for convenience store groups. Additional areas for office buildings like the one near Memorial Park Cemetery are suggested in the vicinity of U. S. 15, U. S. 340, and Interstate 70. In this locality it should be noted that the Land Use pattern calls for general business development at the core, with transitional uses of office buildings, apartments, and institutions tapering off to the single-family developments beyond.

There is little need for industrial zoning in the area, in view of the very extensive provision for industries to the east and southeast of the city, under both the City and County zoning ordinances. Some light industrial area is provided for in the triangle to be formed by the Frederick By-pass, U. S. 340, and Interstate 70, while other industrial areas are indicated to the east of New Design Road and just west of the County Home, as presently zoned.

Almost 10% of the gross area is recommended for recreational open spaces. This will include two major parkways following Carroll Creek and Rock Creek, respectively, after the pattern already established in Frederick City. These parkways and some adjacent higher ground, averaging perhaps 400 to 500 feet or more in width, were recommended for public ownership in the Beavin report as a means of providing not only for recreational needs but also for the economical extension of intercepting sewers and for inexpensive handling of the storm-water runoff that will be greatly increased by urbanization. Water is an important ingredient in any public park because of its attraction to people with a wide variety of interests. A series of low dams and pools interspersed with running streams will provide for boating, fishing, hiking, camping, nature study, and a variety of other activities. These two watercourses provide the most suitable opportunities for useful parks in the urbanizing area. Included also in the recreational acreage are the nine neighborhood school-and-recreation centers previously described, the existing golf course, and some incidental spots. Large regional parks and forests are available in the Catoctin Mountains just west of this area, which make it unnecessary to provide large city parks within the area itself.
It should be understood that this is a generalized plan indicating only the basic pattern of development in each locality. When a detailed plan is prepared for any portion such as a specific subdivision there are opportunities for incorporating many refinements including additional open spaces. In the foothills, for example, it is not intended that the entire landscape be blanketed Solidly with 10,000-square-foot lots regardless of the topography, but it is recommended that a more sympathetic pattern be applied in each case whereby the houses would be concentrated on the more level sites and the steeper slopes would remain in permanent open space. Such cluster-type development is provided for in the Frederick Zoning Ordinance, Section 18.60, and in the Frederick County Zoning Ordinance, Sec. 40-23. Imaginative designs should be applied to the more level areas also.

The major thoroughfares and expressways are in general conformity with the officially adopted Major Street Plan of Frederick City, and the Major Highway Plan of Frederick County, with some refinements necessitated by recent developments. One of these is the still-uncertain plan for Interstate 70. The location shown and the interchange provisions are in accordance with the latest plans furnished by the State Roads Commission, with additions or modifications recommended by the County Planning Commission or for other reasons. It is essential to Frederick and its environs, for example, that a fully adequate set of ramps and connections be incorporated in the design for I-70 in the West Jefferson Street complex and that an effective interchange be provided with the Outer Beltway near Braddock. This beltway will be an important link in both the County and City trafficway systems. The location of this beltway has had to be shifted, incidentally, in the area north of Fort Detrick to avoid some new subdivisions that have been permitted in complete disregard for the official thoroughfare plans. This experience points up the necessity for constant reference to the Master Plans and insistence upon adherence by each new development through adequate subdivision control or otherwise. If this is not done, all the money spent for planning, and all the thought and effort expended on it, will have gone for nothing.

The total area thus recommended for urban development is 5,827 acres or 9.1 square miles, which is 80% greater than the present incorporated City of Frederick. Residential development is recommended for 75% of the gross area, business and industrial uses would occupy 10%, recrea-
tion areas another 10%, and the remaining 5% would be in apartments or public and semi-public uses. The figure for each classification is given in Table 2. Not included in these measurements are the steeper mountain slopes west of a line through Indian Springs where R-1 and conservation zoning are recommended, and the figures do not include Fort Detrick or the expressway right-of-ways. The proportions devoted to residential, commercial, and other uses are in good relationship to current practice and apparent demands, and the general pattern should produce a basically residential environment of exceptional appeal and solid durability.

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<tr>
<th>Use</th>
<th>Gross Acres</th>
<th>Per Cent</th>
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<tr>
<td>Urban Residence</td>
<td>3,271</td>
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</tr>
<tr>
<td>Various Dwelling Types</td>
<td>1,116</td>
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<tr>
<td>Elevator Apartments</td>
<td>164</td>
<td>3</td>
</tr>
<tr>
<td>Office Buildings</td>
<td>50</td>
<td>1</td>
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<tr>
<td>Shopping Centers</td>
<td>32</td>
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<tr>
<td>General Business</td>
<td>217</td>
<td>4</td>
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<tr>
<td>Industries</td>
<td>274</td>
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<tr>
<td>Public or Semi-public uses</td>
<td>147</td>
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<tr>
<td>Conservation or Recreation</td>
<td>556</td>
<td>10</td>
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<tr>
<td></td>
<td>5,827</td>
<td>100</td>
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</table>

*Includes area in Carroll Creek Basin from city limits to proposed thoroughfare at base of mountain (Old Receiver Road), and urban areas south of city and west of Buckeystown Pike. Does not include expressways or Fort Detrick.

That portion of the Plan that is in the vicinity of Feagerville, on either side of U. S. 340, simply reflects the existing county zoning in this area. No urbanization requiring expensive sewer installations is recommended here within at least the next 15 years. Any such investment would be premature in view of the very ample provision being made in the Carroll Creek Basin, not to mention other potential developments to the north and northeast of the city which will absorb some of the demand.
In accordance with the recommendations of the Beavin report, it is suggested that the necessary re-zoning to implement this plan be done systematically and in step with the installation of water and sanitary facilities. Annexation by the City would assist materially in securing and orderly development.