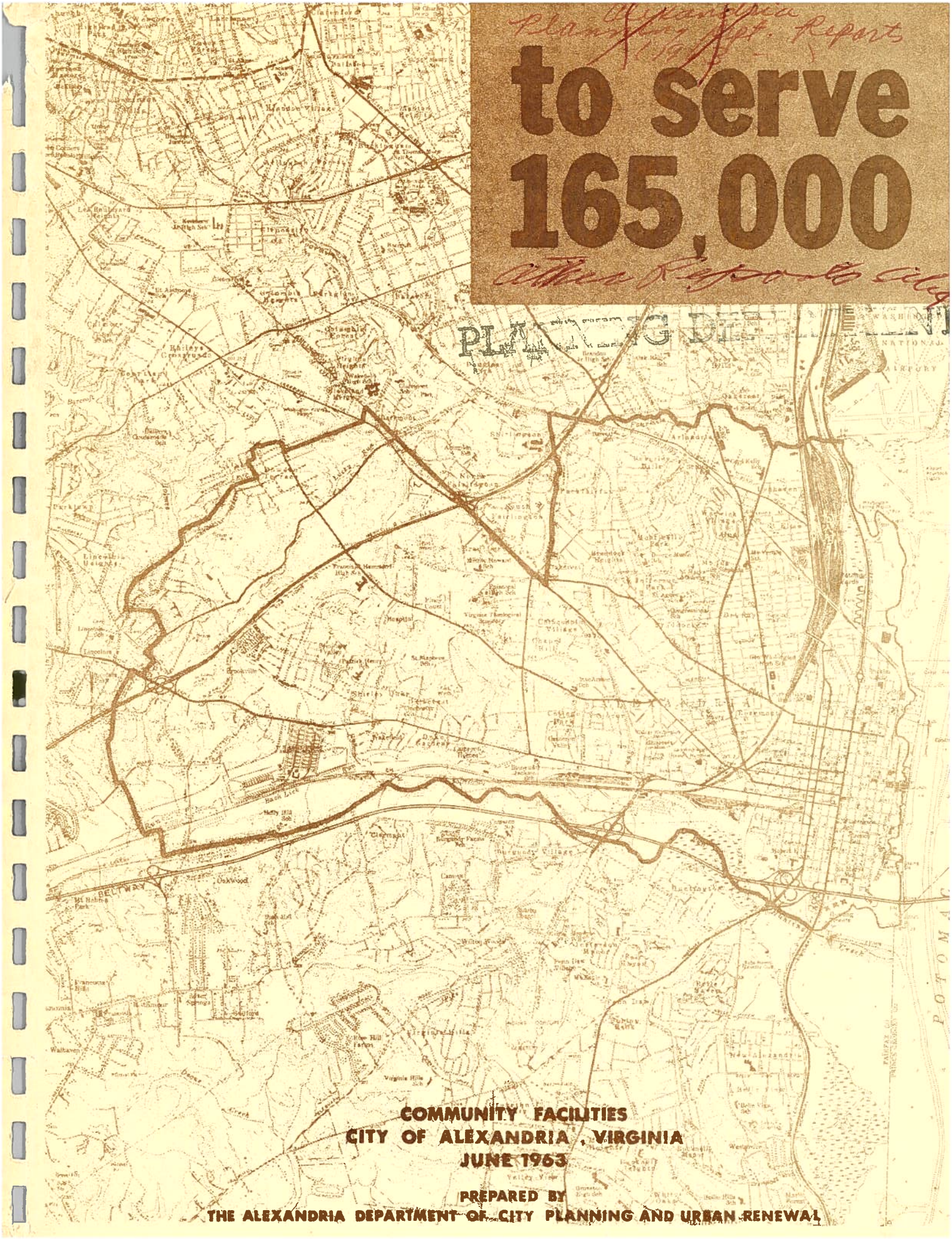

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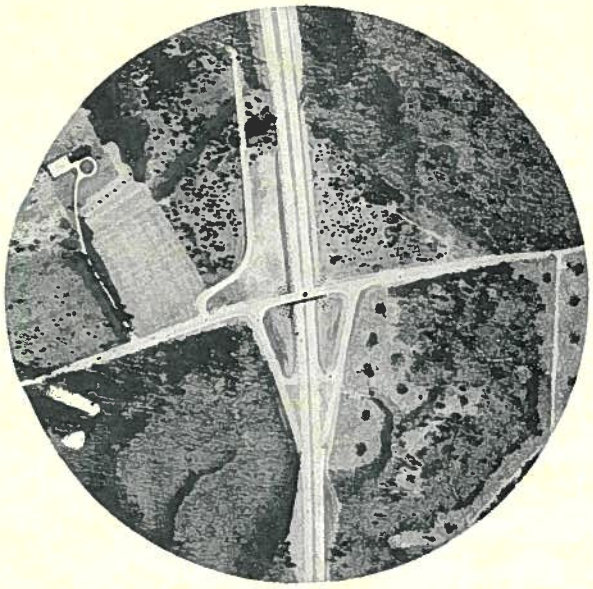
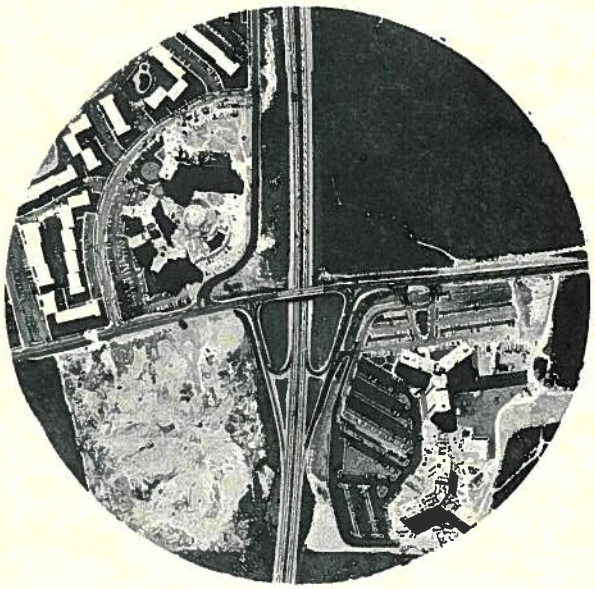
COMMUNITY FACILITIES
CITY OF ALEXANDRIA, VIRGINIA
JUNE 1963

PREPARED BY
THE ALEXANDRIA DEPARTMENT OF CITY PLANNING AND URBAN RENEWAL



WHERE THERE WAS
NOTHING - - - -



NOW THERE IS A
NEED!

CITY OF ALEXANDRIA, VIRGINIA

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Eugene W. Zimmerman, Vice-Mayor
James M. Duncan, Jr.
John J. Ewald (Deceased)
James T. Luckett, Jr.
Timothy J. Swett
John K. Pickens

Albert M. Hair, Jr., City Manager

City Planning Commission

Everett C. Weitzell, Chairman

Henry S. Brooks, Vice-Chairman
Wallce G. Perry
William B. Hurd
Norman V. Cockrell
Jerry W. Combs, Jr.
Joseph F. McCaddon

Department of City Planning

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Richard Stickles
Raymond Ketchum

NOW THERE IS A NEED!

The City of Alexandria, through the cooperation of citizens, civic groups and many long and arduous public sessions and study by citizen members of the City Planning Commission and elected members of the City Council, has succeeded in adopting a program for the future of the city by the approval in 1962 of the Generalized Land Use Map and the Major Thoroughfare Map with their accompanying reports. Subsequently, many hearings led to the adoption of the Fifth Revised Zoning Map in 1963.

The next step in the preparation of a total "Comprehensive Plan" for the City of Alexandria, Virginia, is the public consideration and adoption by the Planning Commission of a "Community Facilities Plan". Each plan relates to the other and the total future development of the city is ultimately incorporated in a "Capital Improvements Program", which together with the annual financing included in the City Operating Budget forms an all encompassing circle binding all of the elements of city development into a cohesive plan being the "Comprehensive Plan" for the City of Alexandria, Virginia.

Much time must pass and the continued diligent efforts of citizens, civic groups, commercial and industrial enterprises cooperating with appointed, administrative and elected city officials will, over a period of years, provide the desired living environment attractive to new citizens, commercial and industrial enterprises.

A city is a living moving body made up of living moving people. All plans for future development must contain certain flexibility to permit change with the times or to be amended to meet changing needs. Certain of our "Community Facilities" are, however, built to last over the period of a normal lifetime and must, therefore, receive thoughtful planning to assure the maximum benefit to the people of the community.

A "Community Facilities Plan" examines existing conditions and projects future needs upon the basis of known standards, and estimates future population demands upon the services expected, but seldom consciously considered by the people who constitute the community.

The recommendations and suggestions contained within this report cannot be accomplished in a short span of time, but should be used as a guide in the establishment of goals extending over a period of years and should be subject to updating, review and revision as years pass.

Now There Is A Need for recognizing the problems of the future and through such recognition, solutions will be found.

This report is respectfully and humbly commended to the thoughtful consideration of all of the citizens of Alexandria.

Francis S. Kenny,
Acting Director
Planning and Urban Renewal

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PREFACE

Open space for active and passive recreation have become in demand to such an extent by private citizens that property values are directly affected by the lack of, or abundant supply of, such properties. It is evident that open space will play an even more important role in determining property values in the future as a result of the increasing amount of leisure time at the disposal of the community inhabitants.

The plan is intended to establish objectives and set the foundation for building a well organized physical park and school system. It is hoped that it will represent a long range guide for local action.

This report examines the availability and variety of existing parks. It recommends a set of standards for the City to follow in an effort to supply a reasonable amount of park land considering the City's physical location with respect to Washington, D. C.

The report identifies neighborhoods within the City in an effort to generally indicate locations for the placement of recommended parks and schools. Each neighborhood having its own individual characteristics regarding type and total population, requires park space in different quantities.

Programming the acquisition of park and school property as well as the other community facilities requiring local acquisition is a matter of immediate concern in the Shirley Highway Area where land development is taking place at a rapid pace with improvements far too expensive for the City to acquire in the future. Although general locations are recommended for the various facilities in this report, the matter of site selection will take place at such time when resources for acquisition are determined.

School construction is generally programmed in the following three parts: (1) Phase I, including the following three year period through 1964, (2) Phase II, including the 16 year period following Phase I, (3) Phase III, the years 1980-2000.

This report examines the major community facilities as follows: 1. Parks and Schools; 2. Libraries; 3. Police Facilities: 4. Fire Facilities; 5. Health Facilities; 6. Churches and Nursery Schools; 7. Transportation; and, 8. Utilities including storm and sanitary sewers, electric power and telephone facilities, and gas facilities.

Example of Shirley Highway building construction

ACKNOWLEDGMENTS

The first section of this report entitled "Parks, Recreation and Schools" was originally presented to the Alexandria Planning Commission December 4, 1962, under a cover entitled "Preliminary Park and School Plan, Part I, Community Facilities and Services". The Commission referred the plan to the citizens groups, city departments and other interested citizens. Later, on February 5, 1963, the Commission adopted the plan in principle in addition to amendments derived from comments submitted on behalf of the plan.

The Alexandria Planning Department wishes to express their appreciation for the thorough studies undertaken by the Alexandria Park Commission and Alexandria Community Welfare Council. Many of the recommendations presented as a result of these studies now appear in the first section of the following report. Subsequent to release of the "Preliminary Park and School Plan", many letters were received which also contributed to this section. Among these letters are those submitted by the Alexandria School Board, Brookville-Seminary Valley Association, Council of the Parent Teachers Association, League of Women Voters, Mark Winkler Management, Inc., Northeast Citizens Association, Retail Merchants Association, Stonewall Jackson Parent Teachers Association and the Strawberry Hill Community Association.

The Department is, indeed, indebted to the following agencies for their cooperation in providing material, without which, this report could not have been completed: (1) A.B. & W. Transit Company, (2) Alexandria Community Welfare Council, (3) Alexandria Department of Public Health, (4) Alexandria Department of Public Welfare, (5) Alexandria Department of Public Works, (6) Alexandria Department of Recreation, (7) Alexandria Fire Department, (8) Alexandria Library, (9) Alexandria Police Department, (10) Alexandria Sanitary Authority, (11) Alexandria School Board, (12) Alexandria Water Company, (13) Bureau of Medical and Nursing Facilities Service, State Department of Health, Commonwealth of Virginia, (14) Chesapeake and Potomac Telephone Company, (15) Metropolitan Washington Health and Planning Council, (16) National Capital Regional Planning Council, (17) National Council of Churches, (18) Northern Virginia Regional Planning and Economic Development Commission, (19) Virginia Electric Power Company and (20) Washington Gas Light Company.

POPULATION

The United States Bureau of Census reported that the Washington Metropolitan Area contained a population of two million persons in April, 1960. The National Capital Regional Planning Council and the National Capital Planning Commission estimated that the population of the region will increase 150% by the year 2000, at which time the region must accommodate five million persons. These projections are based on computations by the National Bureau of Labor Statistics which indicate a 100% increase in Federal employment during the same period and a significant increase in manufacturing employment from the small amount existing today. As the local economy diversifies, substantial increase will occur in retail and local government as well. The projection of five million persons by the year 2000 is also based on projections made by other authorities. The Department of Commerce projected the population for the Potomac River Basin in a study for the Corps of Engineers to determine future adequacy of the water supply. The estimate was somewhat lower than five million persons. In a report entitled, "Metropolitanization of the United States," by the Urban Land Institute, a projection was made for the year 2000 indicating an excess of five million in the Washington Metropolitan Area. Both studies substantiate population projections by the National Capital Regional Planning Council and National Planning Commission.

The City of Alexandria being located in close proximity to Washington, D. C. will receive an early population growth as compared to its neighbors located further distances from Washington, D.C. This growth will likely increase at a rapid rate during the first ten years and later begin to increase at a decreasing rate as the City becomes saturated.

Estimates of future populations are based on past trends and the Generalized Land Use Plan. The plan for the City of Alexandria will accommodate 160,616 persons, a great many of whom will reside near the Shirley Memorial Highway. Alexandria experienced a trend in single-family development over the past 15 years; it is now experiencing a trend in apartment development. It is anticipated that Alexandria will contain 150,000 persons by 1980 and prior to the year 2000 contain its maximum population.

April, 1960, population reports indicate that 14% of the single-family population accounts for children ages 6 through 12 and 6.5% of those persons residing in large apartment projects are in this age group. Also indicated in these computations is the fact that 7% of single-family residential occupants are within the high school age group ages 13 through 17 and 3.3% of those residing in large apartment projects are within this high school age. Comparisons of these figures with school enrollment statistics for the same month indicate that 77% of the grade school population

requires enrollment in the Alexandria School System and 81% of Alexandria's High School population requires enrollment in the public school system. These proportions were projected through to the maximum population.

The City of Alexandria was divided into 31 districts in an effort to analyze parks and schools orientated to neighborhoods.

Populations are indicated for April, 1960 based on information from the U. S. Bureau of Census.

Population projections through the year 1963 are based on subsequent building construction, recent site plan approvals, and pending building permits. This information revealed the number of single-family and multi-family dwelling units either constructed or pending construction through the year 1963. Actual population projections were obtained on the basis of 2.8 persons per garden type apartment, 2.0 persons per high-rise apartment unit, and 3.2 persons per single family residence.

Population projections for the years 1980-2000 are based on the Generalized Land Use Plan. Estimates were made regarding the number of units which realistically could be constructed upon existing vacant lands. Also areas containing deteriorated construction were estimated based on the type of construction that would be allowed in the Generalized Land Use Plan considering redevelopment of the blighted areas. Areas containing construction in above standard condition were not considered to change in population although possibly indicated on the Generalized Land Use Plan for alternative residential usage. These considerations allowed for a reasonable maximum population projection through the years 1980-2000. It is pointed out that changes in the plan or construction on vacant land, in contrary thereto, will lead to ultimate population out of line with projections.

The total population existing within residential neighborhoods amounted to 85,683 persons, 5,340 living outside of designated residential neighborhoods. The projected population through the year 1963 indicates 99,978 persons will live within these designated residential neighborhoods. When adding this figure to the number of persons estimated to live outside of these neighborhoods, the total population of the City of Alexandria will likely reach 105,318. It is estimated that the City will contain 160,616 persons when reaching the residential saturation point. It is anticipated that this maximum population will be reached within the years 1980-2000. It is quite possible that the City might approach the maximum level sooner than 1980 if the building construction trend continues at the accelerated rate as in the last year.

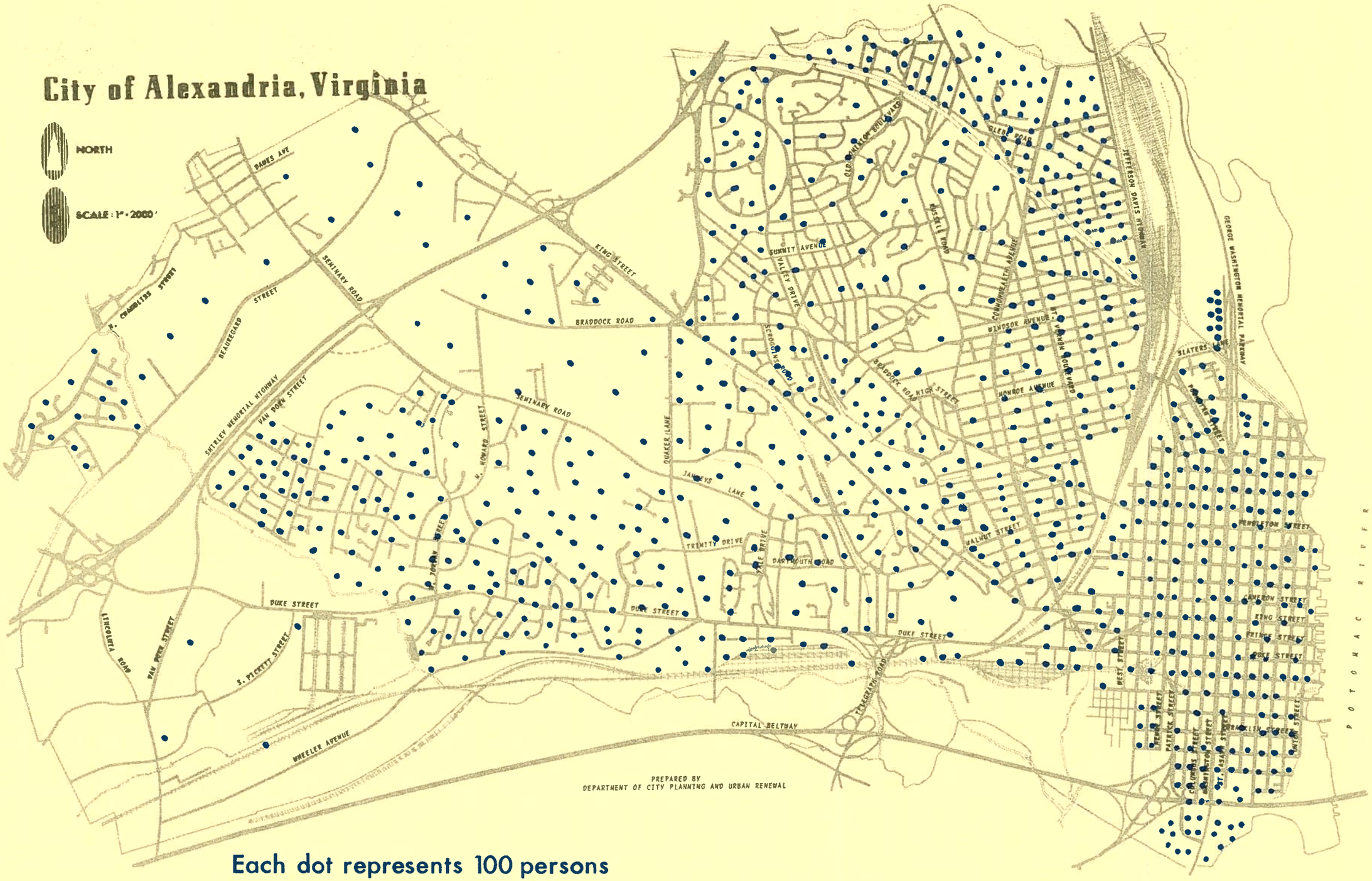
The economic factors affecting actual construction including the market demand at any particular point in time have a considerable bearing on any potential population projections for any given year.

Projections for 1963 were therefore limited to our knowledge of items in process.

POPULATION, APRIL 1960

1

Source: U.S. Bureau of Census



Each dot represents 100 persons

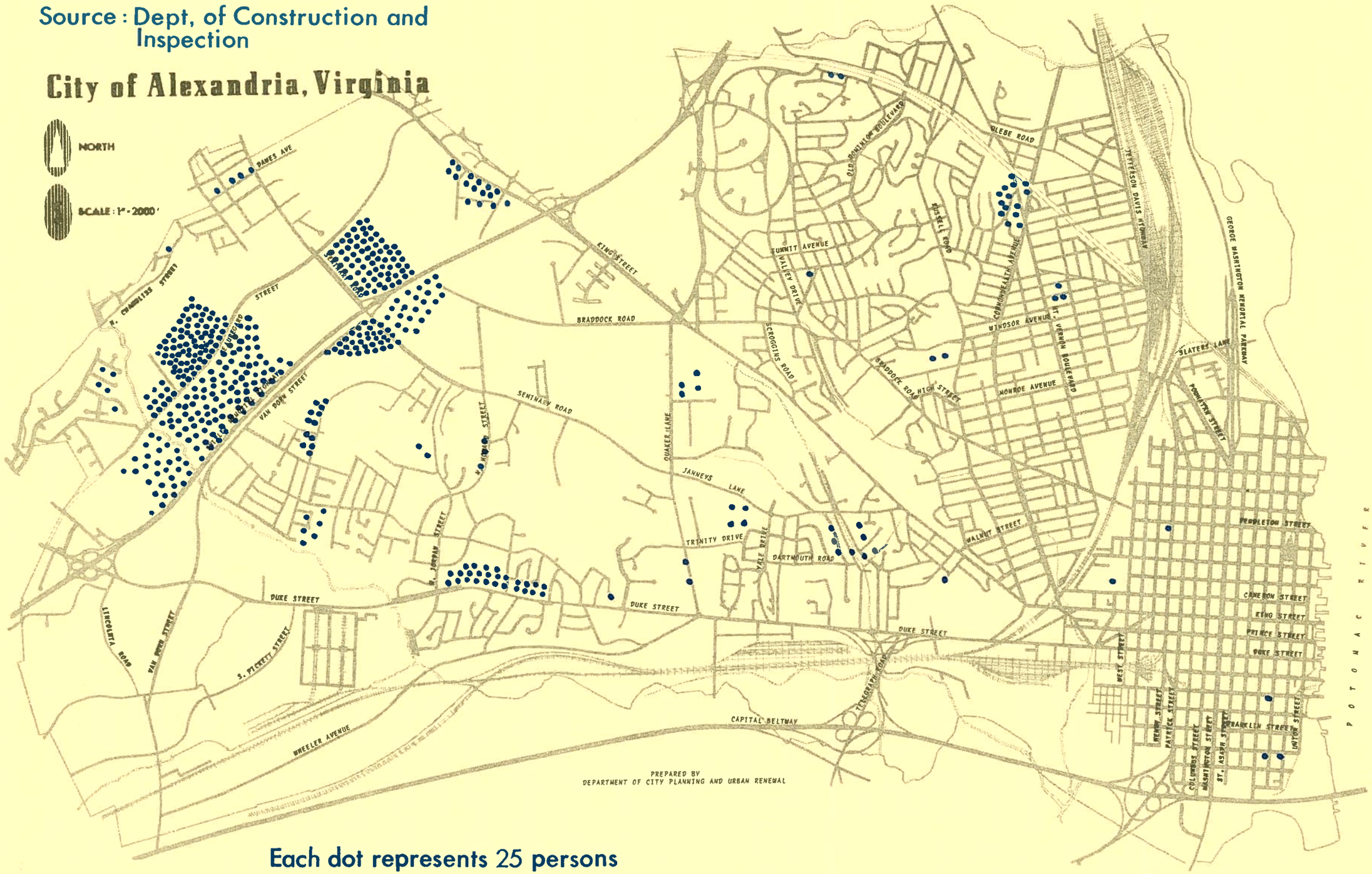
3

POPULATION CHANGES APRIL 1960 TO 1963

2

Source : Dept, of Construction and Inspection

City of Alexandria, Virginia



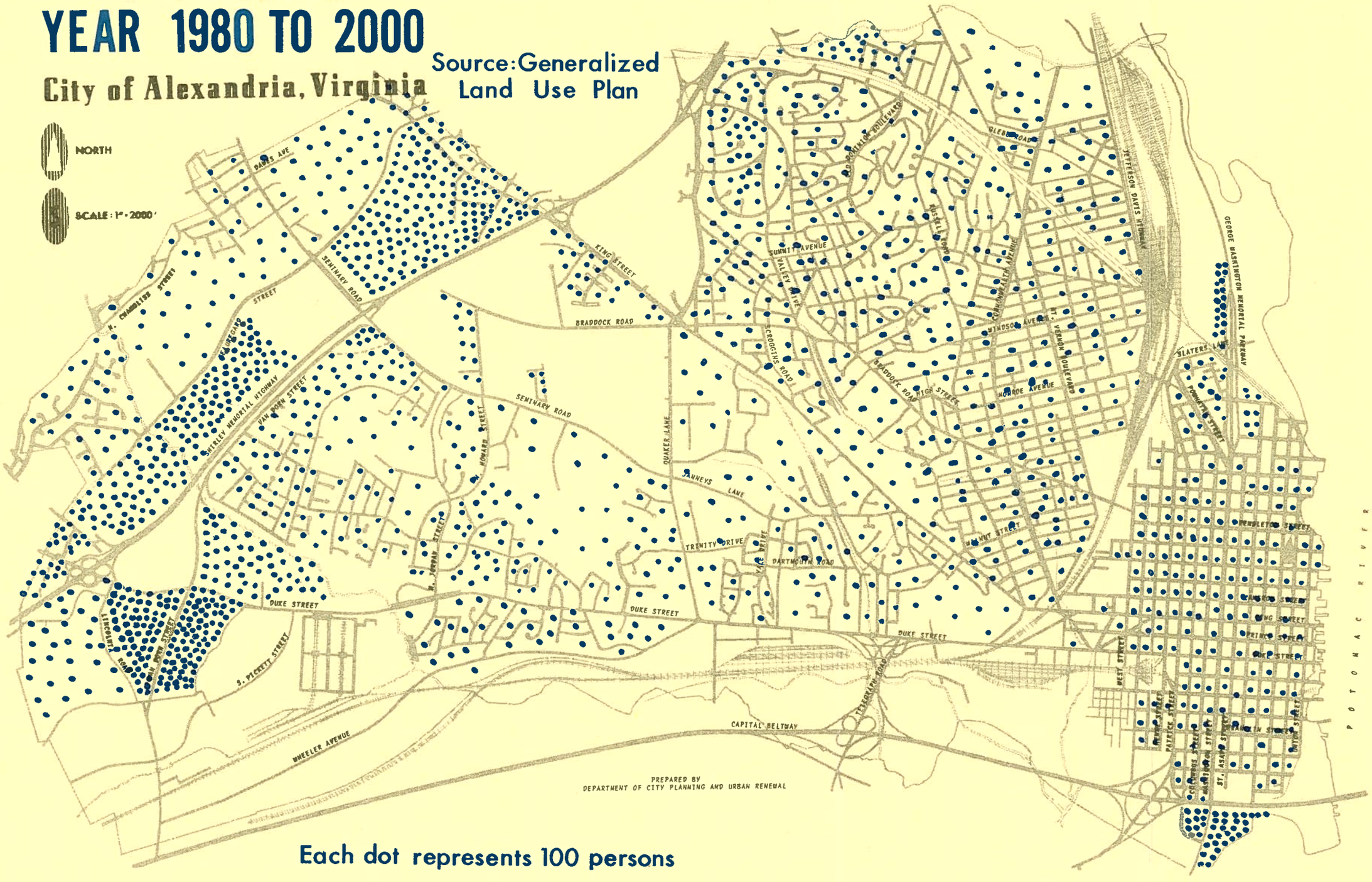
Each dot represents 25 persons

4

ADJUSTED MAXIMUM POPULATION YEAR 1980 TO 2000

City of Alexandria, Virginia

Source: Generalized Land Use Plan



Each dot represents 100 persons

3

5

PARKS, RECREATION AND SCHOOLS

SCOPE

The City of Alexandria is served at the present time with 234.9 acres of park and recreational areas or 2.4 acres per 1,000 existing population. This report examines the amount and variety of existing park and recreational space and recommendations contained herein are based on supplying the reasonably expected maximum population with adequate service based on an adaptation of nationally accepted standards. It is likely that the maximum population will be attained within the next 20 to 40 years and quite possibly sooner than that.

Table I on Page 7 indicates that Alexandria compares unfavorably with its neighbors in supplying park land, however, all but Prince William and Fairfax Counties are providing inadequate park land based on national standards. It must be pointed out that having adequate park land does not mean adequate service since large picnic groves do not provide good areas for competitive team sports and vice versa.

This plan recommends not only a reasonably proper amount of park land based on the City's maximum population, but also the appropriate varieties and proportion which only can be determined by the individual city characteristics. Phoenix, Arizona, is well known as a retirement city, as a result of its favorable climatic conditions. It therefore, does not need playgrounds and playfields in the amount recommended for Alexandria. Alexandria is a City of young families, but by the time it becomes saturated with construction the population age groups will become more normally distributed. This trend is evident and is pointed out in the Generalized Land Use Plan. The recommendations for future parks in Alexandria include tot-lots in areas of high density, neighborhood parks (1 acre per 1,000 persons centrally located within neighborhoods), playgrounds ($1\frac{1}{2}$ acres per 1,000 persons also centrally located within neighborhoods), playfields (1 acre per 1,000 persons) orientated to the communities, consisting of approximately six neighborhoods, and City-wide parks, orientated to the entire City as scenic or historic areas. Grade school buildings are suggested for construction on recommended playgrounds in most neighborhoods not presently served by such a facility or where such a facility is improperly located. High school buildings are recommended where inadequate service is evident and at locations to provide the maximum projected population with adequate facilities.

In most instances this report does not select particular sites nor does it indicate approximate costs.

OBJECTIVES

Essential to adopting a long range park program is the

TABLE I

* INVENTORY OF:

PUBLIC RECREATIONAL LAND BY JURISDICTION IN NORTHERN VIRGINIA REGION AS A PERCENT OF TOTAL REGIONAL RECREATIONAL LAND IN EACH JURISDICTION AND ACRES PER 1000 PERSONS (SCHOOL PROPERTIES INCLUDED)

JURISDICTION	PUBLIC PARK & SCHOOL ACRES	PERCENT OF REGIONAL TOTAL	ACRES/1000 PERSONS
ARLINGTON COUNTY	637.77	3.34	3.91
CITY OF ALEXANDRIA	338.40	1.77	3.71
CITY OF FALLS CHURCH	63.73	.33	6.37
FAIRFAX COUNTY	2,759.70	14.47	10.03
LOUDOUN COUNTY	114.50	.75	6.02
PRINCE WILLIAM COUNTY	15,125.40	79.31	302.50
NORTHERN VIRGINIA REGION	19,069.50	100.00	31.05

* Information taken from "Public Parks and Recreation, Survey and Analysis, Northern Virginia Region"

NOTE: Public vacant land is also included in above figures.

(Cont'd from page 6)

establishment of a target for the City to shoot at. The following set of objectives are recommended to guide future public actions toward providing the City with the most desirable and reasonable system of open spaces considering the City's economic and physical location within the Washington Metropolitan Area.

No. 1

Encourage undeveloped areas along the Potomac River to remain free of construction in all but port orientated improvements. The Potomac River is scenic and offers regional city-wide park locations along its banks. The river's usefulness as a recreational area will be realized when the Potomac River

is once more free of polluting materials.

No. 2

Provide the Alexandria population with reasonably adequate park space, a complete variety of park types and in appropriate portions to supply both young and old with ample open space for passive and active recreation.

No. 3

Establish an active program immediately to acquire vacant land required to provide park or school service to neighborhoods and communities.

When necessary acquire at earliest opportunity land and obsolete structures to provide adequate open space and park or school facilities for neighborhoods already saturated with construction.

No. 4

Recognize the necessity of regional parks and make every effort to coordinate Alexandria Park plans with regional plans and contribute in the future to regional park acquisition to prohibit future overcrowding. Joining the Northern Virginia Park Authority will effectively accomplish this objective.

No. 5

Provide neighborhood parks and school facilities in locations where they can be reached within convenient and safe walking relationships.

No. 6

Continued cooperation between the City of Alexandria and Alexandria School Board in an effort to achieve efficient use of public properties. Multiple use of public sites for neighborhood oriented public facilities such as grade school buildings, playgrounds, neighborhood relaxation areas and tot-lots are recommended throughout the report to accomplish this objective.

DEFINITIONS

The following terms are used frequently in the report. For the purpose of clarity the following definitions are provided.

CITY-WIDE PARK

The city-wide parks are intended to serve all ages with such facilities as arboretums, natural woods and streams, picnic and camping areas, hiking and riding trails, and swimming and boating areas. They may also include tot-lots, playgrounds, neighborhood parks, and playfield facilities. City-wide parks provide an opportunity for people to get away from the noise and rush of city life and their location is usually determined by natural features.

COMMUNITY

A community consists of several neighborhoods served by a high school. It is generally bounded by major natural or man made barriers, and encompasses a population of 20,000 to 40,000 persons.

COMMUNITY BUILDING

A structure designed and used for indoor recreational activities especially including a gymnasium. Such buildings are intended to serve communities coincident with playfields.

GRADE SCHOOL

A grade school provides educational facilities for children ages 6 through 12 and includes grades 1 through 7. It serves as the central feature of a neighborhood.

HIGH SCHOOL

A high school provides educational facilities for pupils ages 13 through 17 including grades 8 through 12. It is a central feature in the community and efficiently serves a minimum of 1500 pupils.

NEIGHBORHOOD

A neighborhood is an area served by an elementary school usually bounded by major thoroughfares or natural barriers. It generally consists of a population between 2,000 and 8,000 persons.

NEIGHBORHOOD PARK

The neighborhood park serves as a relaxation area for all age groups. It is developed with trees, shrubs, and lawn areas. Park benches should be provided at shaded locations and offer best possible views. 10,000 square feet or approximately 0.25 of an acre is considered a minimum size to provide the intended service. A tot-lot may be provided for convenience as a separate part of a neighborhood park. With proper treatment this becomes an economical advantage. It is a central public feature in the neighborhood and advantageously provided as part of a grade school site.

PLAYFIELD

The playfield serves those active persons over 15 years of age with baseball, softball, basketball, tennis courts, and skating. A large area is required consisting of a minimum of 10 acres to provide adequate service. It is advantageously provided as part of a high school site.

PLAYGROUND

A playground is intended to provide children 5 - 15 years of age with an area for competitive team sports, softball and touch football are typical. Tennis courts, basketball courts and areas for free play are also provided to offer adequate service. The size of a playground is determined by the population it serves. It is a central public feature in the neighborhood and advantageously provided as part of a grade school site.

TOT-LOT

A tot-lot serves the youngest age group children ages 1 - 5. An area of 5,000 square feet or approximately 0.1 acre is sufficient in most cases. Swings, teeters, sandboxes, and monkey bars are major types of apparatus provided. Benches should be furnished for guardians. Hazards which abutt a tot-lot should

be separated by fencing for the children's safety. More than any other park type, the tot-lot should be away from the heavily traveled streets, railroads, and bodies of water.

20 YEARS OF PARK PLANNING

During the past 20 years the City of Alexandria has received three park plans. The first plan was prepared and recommended by the Alexandria Planning Commission in September, 1940, the second plan was prepared by the National Recreation Association in 1944, and the third prepared for the Alexandria Community Welfare Council in 1957, also by the National Recreation Association.

The 1940 plan suggested the acquisition of park properties in an effort to provide 1 acre of park land per 300 persons. Many of the proposed park acquisitions were purchased by the City of Alexandria at a later date.

The 1944 park plan included an extensive study of the City by neighborhoods, then composed of Planning Districts 1 and 2. The proposed land acquisitions contained in the report were based on a standard of 1 acre per 100 persons. It recommended the acquisition of 365 acres for the purpose of providing Alexandria with large city parks. Some of this land has since been developed privately for residential purposes. It further recommended the acquisition of approximately 43 acres of land for the purpose of providing the City with 20 additional neighborhood playgrounds. Many of these properties have since been developed privately for residential purposes.

The 1957 plan did not include recommendations for park site acquisition nor improvement of existing parks. It suggested a variety of parks and equipment from which to choose and provided a foundation to later place a solid park plan and planning program. Among its recommendations were the following:

1. That a detailed neighborhood and community study follow immediately after completion of a Land Use Plan.

2. That a comprehensive area and facility plan follow this neighborhood study.

3. That site plans be prepared for the development of each recreation area before development is initiated.

4. That a long range capital improvement plan be developed based on an area and facility study.

5. That formal agreement be entered into between the City and School Board.

6. That further development by National Capital Parks be explored along with the ultimate use of Jones Point.

7. That the plans for urban renewal contain provision for recreation needs in the area proposed for redevelopment.

8. That the Planning Commission maintain a close relationship with the City Park and Recreation Department on the overall planning

need for recreation, and

9. That the City cooperate with other jurisdictions in the acquisition of large regional facilities.

This plan subscribes to each of the proposals mentioned above and many of the proposals are incorporated in the scope of this report. Those that are not contained herein should receive attention in the future.

STANDARDS

The following is a set of standards modified from standards developed by the Denver, Colorado Inter-County Regional Planning Commission, noted by the Urban Land Institute as one of the most intelligent approaches they had seen in the organization of criteria for new urban development. The standards below also stem from standards already adopted by cities of similar characteristics as Alexandria and standards developed by the National Recreation Association.

Safety standards should be established for all park types including adequate fencing to protect children from any hazards. In addition it is recommended that full time supervision be provided at all community park and recreational areas including playfields and city-wide parks. Such supervision should be capable of administering first aid, providing recreation and park information and directing team competition.

TABLE II

MINIMUM STANDARDS FOR TOT-LOTS

Age Group:	1 to 5 years
Size:	40 Sq. Ft. Per Child. Total 1500 to 5000 square feet
Service Area:	Within block in area of high density
Distribution:	One per block (in area of high density development)
Location:	Close to center of block

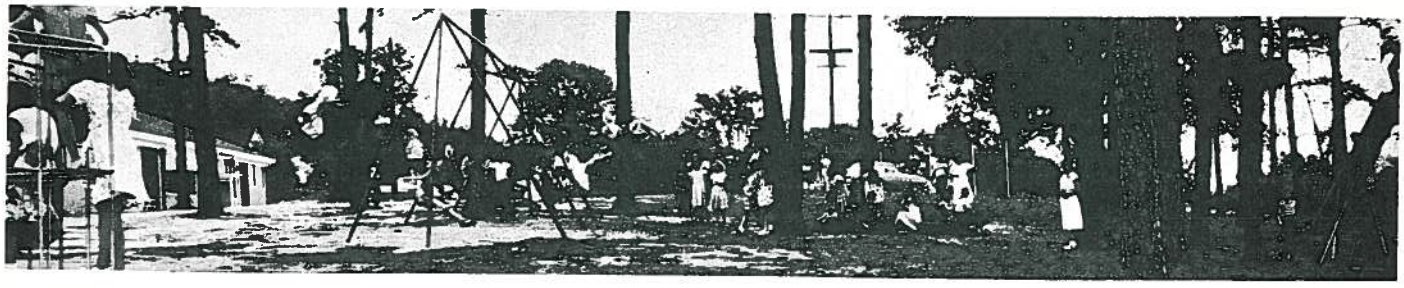


TABLE II CON'D

MAXIMUM SERVICE RADIUS FOR TOT-LOTS

RESIDENTIAL DENSITY	MAXIMUM RADIUS	
	For Tot-Lots 3,000 Sq. Ft.	For Tot-Lots Over 3,000 Sq. Ft.
HIGH DENSITY (Apartments)	400'	500'
MEDIUM DENSITY (Two Family & Town House)	500'	600'
LOW DENSITY (Single Family)	800'	1000'

TABLE III

MINIMUM STANDARDS FOR NEIGHBORHOOD PARKS

Age Group: All Ages

Size: 1/4 acre or larger

Distribution: At least one acre of quiet park per 1000 population, located every square mile or less

Location: Separate small area, or in conjunction with playground, playfield, or other areas

MAXIMUM SERVICE RADIUS FOR NEIGHBORHOOD PARKS

RESIDENTIAL DENSITY	RADIUS		
	Lot Size 0 - 1.5 Acres	Lot Size 1.6 - 3.0 Acres	Lot Size 3.1 & over
HIGH DENSITY (Apartments)	700'	1000'	1200'
MEDIUM DENSITY (Two Family & Town House)	1400'	1800'	2200'
LOW DENSITY (Single Family)	1800'	2200'	2600'

TABLE IV

MINIMUM STANDARDS FOR PLAYGROUNDS

Age Group:	5 to 15 years
Size:	1½ acres per 1,000 population 200 children need 2½ acres 600 children need 3½ acres 1000 children need 6 acres
Service Area:	Radius of 1/4 to 1/2 mile
Distribution:	One per 2,000 to 8,000 population
Location:	Adjoining or as part of school site or large park near center of neighborhood

MAXIMUM SERVICE RADIUS FOR PLAYGROUNDS

RESIDENTIAL DENSITY	RADIUS		
	Lot Size 0 - 2.0 Acres	Lot Size 2.1 - 4.0 Acres	Lot Size 4.1 & Over
MEDIUM DENSITY (Two Family & Town House)	1400'	1800'	2000'
LOW DENSITY (Single Family)	1800'	2200'	2600'

TABLE V

MINIMUM STANDARDS FOR PLAYFIELDS

Age Group:	All ages over 15 years.
Size:	One acre per 1,000 population. Minimum 10 acres, preferably 20
Service Area:	Radius of 1/2 to 1 mile.
Distribution:	One per 20,000 population.
Location:	Near center of service area (Community), adjoining or as part of a high school.

TABLE VI

CITY-WIDE PARK STANDARDS

Age Group:	A11 ages.
Size:	Determined by natura1 features, usua11y 100 acres or more.
Service Area:	Entire city.
Distribution:	One per 40,000 popu1ation.
Location:	Determined by natura1 features such as 1akes, streams, cana1s, ravines and woods.

TABLE VII

MINIMUM STANDARDS FOR PUBLIC GRADE SCHOOL SITES

Age Group:	6 through 12 years, grade 1 through 7.
Size:	5 acres p1us 1 acre per 100 chi1dren.
Service Area:	Radius of 1/4 to 1/2 mi1e.
Distribution:	One per 2,000 to 8,000 popu1ation.

OPTIMUM NUMBER OF PUPILS:

Minimum - 175
Desirable Minimum - 300
Desirable Range - 350 to 500

Location:	Adjoining or as part of p1ayground or 1arge park site, near center of neighborhood.

TABLE VIII

MINIMUM STANDARDS FOR PUBLIC HIGH SCHOOL SITES

Age Group:	13 through 17 years, grade 8 through 12

TABLE VIII CON'D

Size: 10 acres plus 1 acre per 100 children.

Service Area: 1/2 to 1 mile.

Distribution: One per 20,000 to 40,000 population.

OPTIMUM NUMBER OF PUPILS:

Minimum - 500
Desirable Minimum - 1,500
Desirable Range - 2,500

Location: Adjoining or as part of playfield or large park, near center of community.

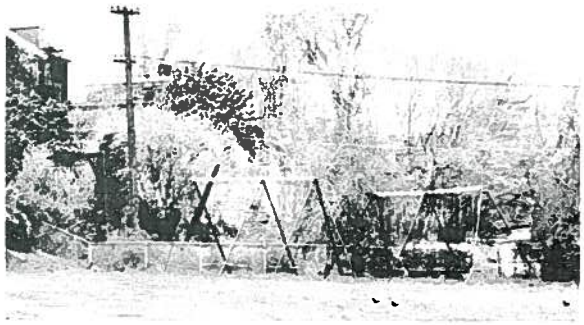
EXISTING PARKS

The City of Alexandria contains 33 separate and equipped public park sites within its city limits. Nineteen of these sites are provided by the School Board. In total the 33 sites encompass 234.9 acres, 198.5 acres of which are in School Board ownership. Based on the existing population estimated at 96,362 persons, the City contains 2.4 acres of public park per 1,000 persons.

In detail the City contains 5 tot-lots comprising a total of 1.1 acres. It contains 18 playgrounds and neighborhood parks encompassing a total of 97 acres or 1.0 acres per 1,000 persons. It contains 11 playfields consisting of 138 acres or 1.5 acres per 1,000 persons. No improved city-wide parks are existing at the present time; however, the Fort Ward Park site will be improved directly.

The following table and map describes locations, descriptions, and acreages of each existing improved public park.

Fort Ward
Cannon Emplacement



Tot-Lot Equipment
at Potomac View Park

INVENTORY OF SCHOOLS, PARKS & RECREATIONAL AREAS

July, 1962

NOTE: Numbers correspond to number on Plate 4, Page

NO.	SCHOOL AND LOCATION	ACRES	FACILITIES ON SITE	AVAILABLE INDOOR FACILITIES
1	Cora Kelly School Commonwealth Avenue & Reed Avenue	12	Swings Jungle Gym and/o Horizontal Bars Paved Play Area Basketball Courts (2) Softball Facilities Baseball Facilities	
2	George Mason School Cameron Mills Road & Virginia Avenue	9	Swings Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Courts (2) Softball Facilities Baseball Facilities	
3	Mt. Vernon School Mt. Vernon Avenue & Commonwealth Avenue including Del Ray Center	5	Swings Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Courts (2) Softball Facilities	
4	Ficklin School Montgomery, Second, & Pitt & Royal Streets	5	9 Seat Swings Monkey Bars Paved Play Area Basketball Court Softball Field w/ grandstand seating	1 Large Playroom
5	George Washington High School, Mt. Vernon Avenue & Braddock Road	23	Tennis Courts (2) Softball Facilities Baseball Facilities Football Field (Stadium & Lights)	1 Gymna- sium with seating

INVENTORY OF SCHOOLS, PARKS AND RECREATIONAL AREAS CONT'D

NO.	SCHOOL AND LOCATION	ACRES	FACILITIES ON SITE	AVAILABLE INDOOR FACILITIES
6	Parker Gray High School, Madison & Fayette Streets	15	Paved Play Area Basketball Court Softball Facilities Baseball Facilities Football Field (Stadium & Lights)	1 Gymnasium with seating
7	Lyles Crouch School Wilkes, St. Asaph, & Pitt Streets	3	Swings Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Courts (2)	1 Combination Auditorium and Play Space - Movable Seats
8	Maury School Russell Road & Rucker Place	7	Swings Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Court Softball Facilities	
9	Charles Houston School Madison & Patrick Streets	3	Swings Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Court	
10	Stonewall Jackson-Duke Street School Duke Street & Quaker Lane	15	Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Court Tennis Court Softball Facilities Baseball Facilities	Combination Auditorium and Play Space - Movable Seats
11	Jefferson School Cameron & West Streets	8	Basketball Court Tennis Courts (4) Softball Facilities Baseball Facilities Football Field (no lights or seats)	

INVENTORY OF SCHOOLS, PARKS AND RECREATIONAL AREAS CONT'D

NO.	SCHOOL AND LOCATION	ACRES	FACILITIES ON SITE	AVAILABLE INDOOR FACILITIES
12	Robert E. Lee School Patrick & Franklin Streets	15	Swings Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Courts Softball Facilities	
13	William Ramsey School North Beauregard Street and Sanger Avenue	15	Paved Play Area Basketball Court Softball Facilities Baseball Facilities (Youth only)	
14	Francis Hammond High School, Seminary Road & North Pegram Street	25	Paved Play Area Tennis Court Softball Facilities Baseball Facilities Football Field (No lights or seats)	Gymnasium with seating
15	Minnie Howard School Braddock Road & North Early Street	12	Swings Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Courts (2) Softball Facilities Baseball Facilities	
16	Patrick Henry School Taney Avenue & Latham Street	15	Swings Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Courts (2) Softball Facilities Baseball Facilities (Youth only)	
17	MacArthur School Janneys Lane & Yale Drive	6	Swings Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Courts (2)	

INVENTORY OF SCHOOLS, PARKS AND RECREATIONAL AREAS CONT'D

NO.	SCHOOL AND LOCATION	ACRES	FACILITIES ON SITE	AVAILABLE INDOOR FACILITIES
18	Charles Barrett School Valley Drive & Martha Custis Drive	5	Swings Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Courts (2)	
19	Prince Street School Prince & Henry Streets	1/2	Jungle Gym and/or Horizontal Bars Paved Play Area Basketball Court	

INVENTORY OF CITY OWNED PARKS & RECREATIONAL AREAS

NO.	LOCATION	ACRES	FACILITIES ON SITE	AVAILABLE INDOOR FACILITIES
20	200 Block South Royal Street	0.2	1 Set of 6 Swings 1 Climb-around 1 Merry-go-round	
21	300 Block West Taylor Run Parkway	2.5	1 Softball Backstop Basketball Backboard	Shelter but no facilities
22	Overlook & South Overlook Drives	1.0	Small softball Backstop Basketball Backboard	
23	Chinquapin Village	Part of Taylor Run Park 1.5	1 Combination Set 2 Basketball Backboards 1 Climb-around 1 Tether Pole 1 Maypole	

INVENTORY OF CITY OWNED PARKS AND RECREATIONAL AREAS CONT'D

NO.	LOCATION	ACRES	FACILITIES ON SITE	AVAILABLE INDOOR FACILITIES
24	Holmes Run Parkway & North Van Dorn Street	3.7	1 Basketball Backboard 1 Set of 6 Swings 1 Climb-around 2 Paddle Tennis Standards 4 Fire Places	
25	South Jordan To South Jenkins Streets	1.1	1 Basketball Backboard 1 Combination Set 1 Climb-around 2 Paddle Tennis Standards 1 Firebox	
26	Unit Block East Mason Avenue	0.1	1 Set of Swings 1 Climb-around	
27	Montgomery, Royal, First, Fairfax Streets	2.0	1 Baseball Backstop 1 Baseball Field	
28	Monroe & Jefferson Davis Highway (Stadium)	13.0	2 Baseball Fields 15 Sets of Bleachers 2 Baseball Backstops 2 Basketball Backboards	1 Storage Building 1 Snack Bar w/toilet facilities 1 office & storage building w/toilet facilities
29	Pendleton, Royal, Wythe, & Fairfax Streets	2.0	2 Sets of 6 Swings 2 Paddle Tennis Standards	

INVENTORY OF CITY OWNED PARKS AND RECREATIONAL AREAS CONT'D

NO.	LOCATION	ACRES	FACILITIES ON SITE	AVAILABLE INDOOR FACILITIES
30	1005 Pendleton Street	0.5	1 High Hat Set 1 Cooley Climber 2 Toad Stools	Gym equipped for basketball and stage
31	South Lee & Gibbon Streets	2.0	2 Basketball Backboards 2 Paddle Tennis Standards 1 Set of 6 Swings 1 Set of 5 Swings 1 Combination 1 Hi Ladder 10 Benches 2 Drinking Fountains	
32	Sunset Drive & King Street	0.1	1 Set of Swings 1 Merry-go-round 1 Fire Engine 1 Combination Set	
33	Block Henry Street	2.0	2 Basketball Backboards 1 Set of 6 Swings 1 Merry-go-round 1 Climb-around 1 Dixie Climb-around 1 Softball Backstop	1 Shelter no facilities
34	Woodbine 1500 Block Woodbine	0.1	2 Slides 1 Hi Ladder 1 Climb-around 1 Set of 4 Swings	
35	Maury Park 700 Block Junior	1.5	1 Set of 8 Swings 1 Bar B.Q. on Stand 2 Paddle Tennis Standards	

INVENTORY OF CITY OWNED PARKS AND RECREATIONAL AREAS CONT'D

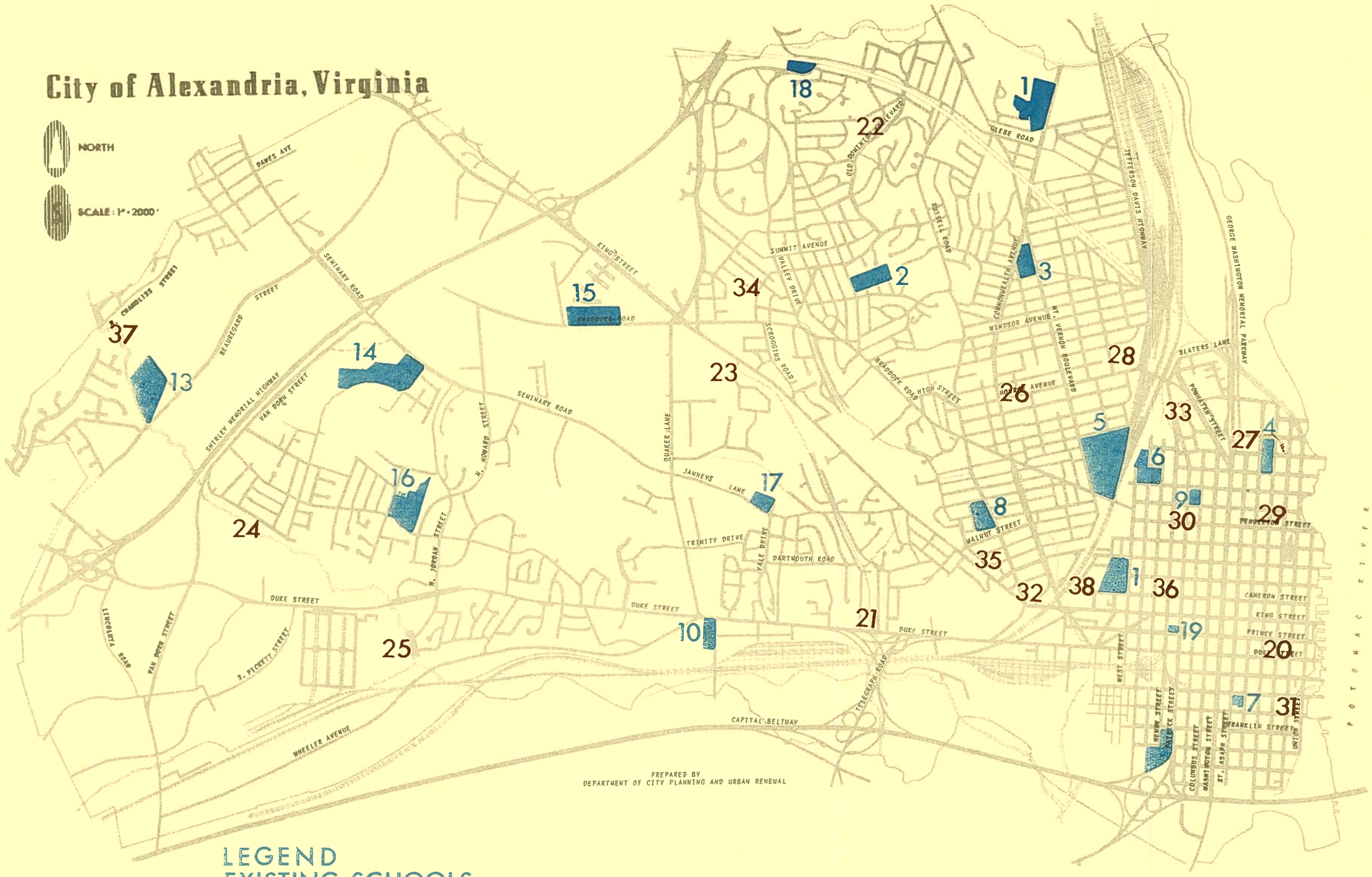
NO.	LOCATION	ACRES	FACILITIES ON SITE	AVAILABLE INDOOR FACILITIES
36	Fayette & Queen Streets	.1	4 Basketball Backboards 2 Paddle Tennis Standards	Building now leased to American Legion
37	Hamlet West, Sanger Avenue just West of Ramsey School	1.0	1 Spider 1 Stage Coach 2 Tables 4 Benches 2 Fire Boxes 1 Coolie Climber	
38	Cameron Street Recreation Center	2.0	Swimming Pool Stage Departmental Offices	Indoor Basketball Court - Gym equipped for basketball, stage included.

VACANT LAND

The City of Alexandria contains 328.62 acres of governmentally owned vacant land on 43 different sites. Since 31 of these sites are far too small for other than tot-lot development, only 12 sites are recommended for park improvement. Five of these sites totaling 260 acres are recommended for city-wide park development. The seven remaining sites, totaling 57.6 acres, are recommended for development as playgrounds and neighborhood parks. In total 317.6 acres of public vacant land are recommended for park development. The map on page 24 indicated vacant publicly owned sites and related acreages.

EXISTING PARKS AND SCHOOLS

City of Alexandria, Virginia

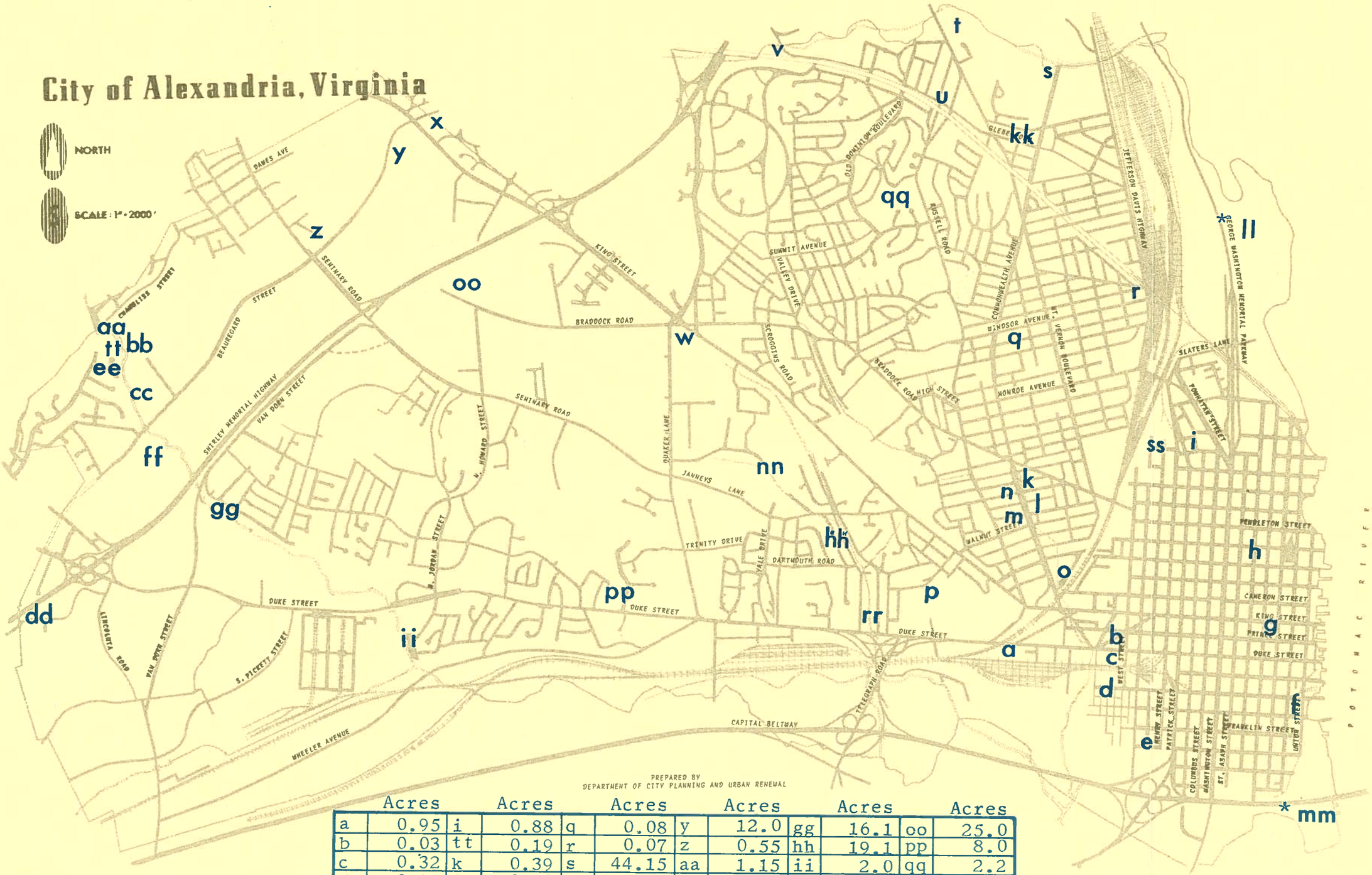


LEGEND
EXISTING SCHOOLS
EXISTING PARKS

GOVERNMENTAL OWNED VACANT LAND

5

City of Alexandria, Virginia



PREPARED BY
DEPARTMENT OF CITY PLANNING AND URBAN RENEWAL

	Acres		Acres		Acres		Acres		Acres		Acres
a	0.95	i	0.88	q	0.08	y	12.0	gg	16.1	oo	25.0
b	0.03	tt	0.19	r	0.07	z	0.55	hh	19.1	pp	8.0
c	0.32	k	0.39	s	44.15	aa	1.15	ii	2.0	qq	2.2
d	0.22	l	0.10	t	1.52	bb	0.11	ss	4.6	rr	21.5
e	0.04	m	0.13	u	0.50	cc	1.0	kk	0.55		
f	0.09	n	0.08	v	0.78	dd	0.28	ll	99.0		
g	0.11	o	0.11	w	0.13	ee	4.6	mm	62.0		
h	0.11	p	0.10	x	0.70	ff	1.6	nn	17.0		

* Owned by Federal Government

PLAN FOR NEIGHBORHOOD GRADE SCHOOLS AND PARKS

The analysis of tot-lots, neighborhood parks, playground space, and grade school locations were conducted at the neighborhood level. The City was divided into 31 residential districts for this purpose, the boundaries of which, consist of major thoroughfares and other physical barriers, such as, vast open spaces, creeks, and major shopping and industrial areas.

Each district was examined on the basis of April, 1960 population recordings by the United States Bureau of Census and population trends. Trends were estimated from population projections to 1963, and a realistically anticipated maximum population. 1963 projections were obtained from residential building completion reports filed with the Department of Construction and Inspection subsequent to April, 1960, and from valid residential building permits issued by the same office. Maximum population estimates were derived from the Generalized Land Use Plan and qualified by computing from existing construction when not expected to be replaced prior to the City's population saturation period. Regional trends indicated that Alexandria will be saturated prior to the year 2000 and possibly as soon as 1980.

Existing school and park sites were inventoried for each neighborhood. Neighborhood orientated park sites were examined on the basis of their neighborhood's maximum population limits and park standards contained in this report. Additional neighborhood parks and playgrounds were recommended in every neighborhood where these facilities were found lacking. Separate tot-lots are recommended only where high density apartment development exists or is anticipated. It is strongly recommended that property developers provide such facilities and maintenance within their projects. Tot-lot facilities were also recommended on many existing and recommended playgrounds regardless of population densities in an effort to get maximum usage of these sites.

School sites were analyzed on the basis of the expected maximum user population within each neighborhood and school standards prescribed by the State of Virginia.

Estimates of the user population was accomplished by computing 14% of the anticipated single-family populations and 6.5% of anticipated apartment population. The private grade school children and other children not requiring enrollment in the Alexandria Grade School System were extracted from this group by extracting 23% of the total grade school age population in each neighborhood. These computations are reflected in the existing Alexandria population analysis.

New school sites were recommended in most neighborhoods were one does not exist or where the existing facility is inappropriately located. Wherever possible, sites are recommended in the centers of neighborhoods and extensive enough in area to accommodate a variety of neighborhood orientated park and school service. This is both an effort to obtain maximum usage of the

site and an economical consideration.

A Public Grade School System including grades 1 through 7 was used in projecting user population figures. This system plus a high school system involving grade 8 through 12 is recommended by the State and accepted by the Alexandria School Board as most practical.

Presently 8 playgrounds and neighborhood parks are provided on City property on sites ranging in size from 0.2 acres to 3.7 acres. A total of 13.7 acres of land are consumed by these neighborhood orientated parks. In addition, 10 sites are provided for these purposes on school property. These sites range in size from 0.5 acres to 15.0 acres. These 10 sites occupy a total of 74.5 acres of land. In total 97 acres of public playgrounds and neighborhood parks are provided for the City's estimated 96,362 July 1, 1962, inhabitants or 1.0 acre per 1,000 persons. Considering the fact that adequate service would require 2.5 acres per 1,000 persons, the City provides only 1/3 as much as would be required based on today's population. Additional space will be required to serve the existing population as well as the additional 64,000 persons expected to live in Alexandria in the future.

This plan recommends 27 additional sites plus the expansion of an existing site to fill the deficit of today and also adequately serve the maximum population; 8 of these sites are recommended on public vacant property totaling 69.6 acres. The remaining sites will require acquisition of 232.9 acres of private property. The 390.7 acres of existing and recommended playground and neighborhood park area on 47 sites will provide the City with 2.43 acres per 1,000 persons at desirable locations based on the anticipated maximum population. Standards prescribe 2.5 acres per 1,000 persons for this purpose.

Only 5 separate tot-lots are located within the City at this time, accounting for a total of 1.1 acres. It is not recommended that any additional tot-lots be provided by the City except as part of larger parks. Separate tot-lots are a burden to the City as a result of maintenance problems. It is more reasonable to expect that these facilities be provided by the management of apartment projects including maintenance and any necessary supervision.

The 16 grade schools located in Alexandria cannot be expected to provide adequate service in the future by any stretch of the imagination. 14 additional schools are recommended to service the maximum population. The Stonewall Jackson-Duke Street, Ficklin, and Mt. Vernon Schools are recommended for alternative use because of their improper locations with respect to today's population and the anticipated future population. Disposal of the building must be determined by the ability of the building and its location to serve in an alternative capacity, degree of obsolesence, and the possibility of providing an alternative school site in a proper location.

THE PARK AND SCHOOL PLAN BY NEIGHBORHOODS

Neighborhood "1"

Located in the extreme northwest section of the City and bounded by the City limits on the north and west, Seminary Road on the south, and North Beauregard Street on the east, presently encompasses 108 persons. It is not likely that the population will increase beyond 725 persons by the end of 1963, however, prior to the year 2000 the population can be expected to reach a maximum level of 3,700 persons, at least 250 of whom will require enrollment in a public grade school.

Based on the realistically expected maximum population and standards contained in this report, 3.7 acres of neighborhood park and 5.6 acres of playground space will be required to adequately serve the future population with park facilities. A site should be selected within the center of the neighborhood consisting of 9.3 acres to serve the neighborhood as a combined neighborhood park - playground facility also equipped with tot-lot apparatus. It is also proposed that a grade school be constructed on this site to serve the children requiring the facility. The building need not be constructed until the neighborhood yields 175 children ages 6 through 12. The 9.3 acre site should be acquired in the near future, however, in order to prevent second choice, less than desirable site selection. The combined facility will afford the neighborhood a most efficient and adequate public facility.

Neighborhood "2"

Located in the extreme western portion of the City, and bounded by Fairfax County on the west, Seminary Road on the north, North Beauregard Street on the east, and Sanger Avenue on the south, encompassed 588 persons in April, 1960, as computed by the United States Bureau of Census. By the end of 1963 the population will reach 1,095 persons, 150 of whom will be children ages 6 through 12. Prior to the year 2000 the neighborhood will likely contain a maximum of 3,824 persons, approximately 325 of whom will require enrollment in the Alexandria Grade School System.

The neighborhood is presently served by the William Ramsey Elementary School and Holmes Run Park located in the extreme southern portion of the neighborhood along Sanger Avenue. The school building will have a capacity of 1,050 children after completion of the proposed expansion. The school property consists of 15 acres and is equipped with a paved play area, basketball court, softball facilities, and baseball facilities for youth only. Holmes Run Park consists of 1.0 acre and serves the neighborhood as both tot-lot and neighborhood park.

Based on the expected maximum population the neighborhood will require 5.5 acres of playground space and 3.8 acres of neighborhood park. William Ramsey School can adequately serve this neighborhood as well as Neighborhood "3" as a playground and school facility. In addition the school capacity, after expansion, will afford service to Neighborhood "4".

The City has received by dedication approximately 9.2 acres along Holmes Run between

North Beauregard Street and North Chambliss Street. The property was dedicated for the purpose of eventual construction of a parkway and presently remains vacant. It is proposed that the City acquire an additional 3.8 acres to provide an unbroken right-of-way between North Beauregard and North Chambliss Streets. It is further proposed that an extensive portion of this 13 acre right-of-way be made available to neighborhoods "2" and "3" as a neighborhood park.

Neighborhood "3"

Located in the extreme western section of the City, and bounded by Holmes Run on the north, North Beauregard Street on the east, and Fairfax County on the south and west, encompassed 816 persons in April, 1960, as computed by the United States Bureau of Census. The population is not expected to change much by the end of 1963, and the maximum population is not likely to reach more than 1,000 persons nor yield more than 110 children who will require enrollment in the Alexandria Grade School System.

The neighborhood is served by the William Ramsey Elementary School located on a 15 acre tract in the northern section of the neighborhood. The school can provide adequate service for the maximum population of this neighborhood as well as the maximum population anticipated for Neighborhood "2" and "4". The school site, being equipped with a paved play area, basketball court, softball facilities, and baseball facilities for youth only, also serves this neighborhood as well as Neighborhood "2" as a playground. Also the proposed 13 acre park, 9.2 acres of which have been already dedicated to the City, will more than adequately serve this neighborhood as well as Neighborhood "2" as a neighborhood park in addition to providing a parkway facility.

Neighborhood "4"

Located in the western portion of the City, and bounded by North Beauregard Street on the west, Holmes Run on the north, Shirley Highway on the east, and Lincolnia Road on the south, contained 122 persons in April, 1960, as reported by the United States Bureau of Census. By the end of 1963, the population will reach 1,800 persons, 100 of whom will be children ages ranging from 6 through 12. It is anticipated that the population will reach a maximum of 9,000 persons prior to the year 2000 and yield 450 children requiring enrollment in a public grade school.

No public property is located within this neighborhood at the present time with the exception of a 1.6 acre tract located along Holmes Run adjacent to Shirley Memorial Highway. It is proposed that the remaining banks of Holmes Run be acquired between North Beauregard Street and Shirley Highway consisting of 10.3 acres to serve as both right-of-way for Holmes Run Parkway and a neighborhood park for Neighborhood "4" and "5". It is further recommended that tot-lot equipment be provided on each side of Holmes Run to serve anticipated apartment developments.

Based on standards contained in this report, Neighborhood "4"

will require 13.5 acres of playground space to adequately serve the neighborhood's maximum population. It is recommended that this site be located within the center of the neighborhood and also include tot-lot equipment and some open space to serve as a combined playground-neighborhood park.

Virginia state standards require a grade school site of 9.4 acres to serve the maximum anticipated population. The proposed centrally located 13.5 acre park will be more than adequate to contain such a facility. The proposed multiple use of this property will supply the neighborhood with a most efficient public facility.

Neighborhood "5"

Located in the western portion of the City along the west side of Shirley Memorial Highway and also bounded by Seminary Road, North Beauregard Street and Sanger Avenue, encompassed 125 persons in April, 1960, as reported by the United States Bureau of the Census. The population will reach 2,500 persons by the end of 1963, and prior to the year 2000 the population of this neighborhood will likely reach 8,750 persons as many as 440 of whom will be children requiring enrollment in the Alexandria Public Grade School System. This is a conservative estimate since the land proposed for commercial development was not used in projecting the neighborhood's future population.

The estimated maximum population for the community west of Shirley Memorial Highway is approximately 40,274 persons. Computing 3.3% of anticipated apartment development and 7% of anticipated single family development indicated that the maximum population will yield 2,086 youths ages 13 thru 17. Determining 81% of the youths in this age bracket indicates that approximately 1,700 youths will require enrollment in a public high school. Since this is the most centrally located neighborhood west of Shirley Highway, it is recommended that a high school be located along the east side of North Beauregard Street on a minimum 27.0 acre site as prescribed by Virginia state standards. This site should also be equipped with enough playfield equipment to serve the community as a dual high school-playfield.

Providing the neighborhood with adequate playground equipment will require a 13.1 acre site. It is recommended that this site be acquired behind the proposed high school site and also contain tot-lot equipment and neighborhood park facilities. It is further proposed that a grade school be constructed on this site at a time when the neighborhood yields 175 children in this age bracket.

The 10.1 acre neighborhood park site recommended along the banks of Holmes Run between North Beauregard Street and Shirley Memorial Highway will serve this neighborhood as well as Neighborhood "4".

Neighborhood "6"

Located in the northwestern section of the City and bounded by North Beauregard Street on the west, King Street on the north, Shirley Memorial Highway on the east, and Seminary Road on the south, contained 960 persons in

April, 1960, as reported by the U.S. Bureau of Census. During 1963, it will likely reach 3,190 persons as a result of high-rise apartment construction initiated in mid 1962. It is anticipated that prior to the year 2000 the population of this neighborhood will reach 14,000 persons as a result of anticipated apartment construction based on the Generalized Land Use Plan. The neighborhood at the present time encompasses only one publicly owned tract located in the extreme northern section of the neighborhood. As a result of the awkward location of this 12.0 acre parcel, it is not recommended that any school facilities be provided on this property. It is recommended instead that a 20 acre site be selected within the central most portion of this neighborhood to be acquired at the earliest possible time, and that playground-neighborhood park and tot-lot equipment be provided in addition to a public grade school, at a time when the neighborhood yields 175 children requiring admission in the Alexandria Grade School System. The 12.0 acre parcel can be retained as a neighborhood park. Construction of this facility should respect the fact that this neighborhood will likely yield 910 children in this age bracket, of which 700 will likely require enrollment in this facility, based on the anticipated maximum population of the neighborhood.

It is strongly recommended that during residential construction in this neighborhood the developers provide tot-lot apparatus within their projects to be maintained by the management. The location of these tot-lots will be determined only at the time that construction takes place.

Neighborhood "7"

Located in the northwestern portion of the City and bounded by Braddock Road on the north, the Virginia Theological Seminary on the east, Seminary Road on the south, and Shirley Memorial Highway on the west, accounted for 225 persons in April, 1960, as reported by the United States Bureau of Census. The population is not expected to increase by the end of 1963, and prior to the year 2000 it is not anticipated that the population will rise beyond 1,197 persons nor yield more than 130 children requiring entrance in the Alexandria Grade School System.

At the present time there are no park or school properties within this neighborhood and as a result of the neighborhood's size and limited population expectation, it does not seem advisable to locate park or school facilities within the neighborhood in the future.

Francis Hammond High School, being located along the southern boundary of this neighborhood and Fort Ward Park just north of the neighborhood, will supply the required park facilities for Neighborhood "7". It is recommended that the grade school children within the neighborhood attend Minnie Howard School because of the site and buildings capability to serve this neighborhood as well as its own.

Neighborhood "8"

Located in the mid-western

portion of the City lying along the east side of Shirley Memorial Highway and also bounded by Seminary Road on the north, North Pickett Street on the east, and Holmes Run on the south encompassed 2,224 persons in April, 1960, as reported by the United States Bureau of Census. By the end of 1963, the population will increase to 4,547 and prior to the year 2000 a maximum population of 6,764 persons will reside in this neighborhood.

At the present time the neighborhood is served by the Francis Hammond High School playfield consisting of 25 acres and equipped with a paved play area, tennis courts, softball, baseball, and football facilities, and a gymnasium with seating, available to the public after school hours. The neighborhood is also served by Holmes Run Park consisting of 3.7 acres and equipped with neighborhood park and playground facilities. In addition to the 3.7 acre park, 12.4 acres of land have been dedicated to the City along Holmes Run to serve as right-of-way for Holmes Run Parkway. It is recommended that additional property be acquired along Holmes Run to complete the right-of-way connection from Shirley Highway to Duke Street, consisting of an additional 31.9 acres of which maximum usage is recommended for a neighborhood park.

At the time when the neighborhood reaches its maximum population it will yield approximately 425 children of grade school age requiring a grade school with a site consisting of a minimum of 9.3 acres. This site will supply the adequate space required to provide desirable combined neighborhood park-playground service for the maximum population. The property should also contain tot-lot apparatus to provide maximum diversification. It is recommended that the site selected by the Alexandria School Board between North Pegram and North Pickett Streets be acquired at the earliest possible time and that a school be constructed immediately thereafter to provide the approximate 230 grade school age children presently contained within the neighborhood with a school within convenient and safe walking distances from their homes. Such a school building should be designed in cognizance of the maximum number of grade school age children that the neighborhood will yield.

Neighborhoods 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16 encompassed approximately 450 youths in April, 1960, as extracted from the United States Bureau of Census data. It is anticipated that these neighborhoods will contain a maximum of 26,159 persons residing in apartment units and 4,816 persons living in single-family dwellings. Determining the maximum number of high school age youths that will reside in these neighborhoods was accomplished by projecting the present age distribution enrolled in the Public High School System indicating that a maximum of 2,050 and a minimum of 1,660 youths will be contained in these neighborhoods based on the Generalized Land Use Plan.

Francis Hammond High School located in Neighborhood "8" should be retained to serve this future population. Based on present Virginia state standards, the 25 acre

high school site will more than adequately accommodate the maximum public high school pupil population likely to be contained in the community.

Neighborhood "9"

Located in the southwestern portion of the City and bounded by the proposed Van Dorn Street on the west, Holmes Run on the north and east, and Duke Street on the south, contained 113 persons in April, 1960, as reported by the United States Bureau of Census. It is not anticipated that the population will increase beyond 310 persons by the end of 1963. Prior to the year 2000 it can reasonably be expected that the population will reach a maximum level of 3,500 persons. The maximum population will likely yield a minimum of 175 children requiring enrollment in the Alexandria Public Grade School System.

The neighborhood will require 5.2 acres of playground space and 3.5 acres of neighborhood park for adequate service based on standards contained in this report. It is recommended that an 8.7 acre site be selected centrally located with respect to the population served and provide neighborhood park facilities, playground equipment, and tot-lot apparatus.

A grade school is recommended to serve the maximum population in this age bracket. It should be constructed on the recommended 8.7 acre site in an effort to obtain maximum public usage from the site. The recommended central location of the site will provide the entire grade school age population with a facility within minimum walking distances.

A city playfield is recommended for this neighborhood consisting of approximately 20 acres in an effort to supply the youths and active adults contained in this neighborhood as well as the entire city with a proper area for competitive team sports. The playfield is intended to provide the same function as the Municipal Stadium, but on a much larger site. It is also conceivable that the playfield can serve a dual function for the city as an area for carnival affairs. Its location in close proximity to the proposed regional shopping center demands maximum usage of the proposed 20 acre facility.

Neighborhood "10"

Located in the southwest portion of the City along the south side of Duke Street and bounded also by Reynolds Street on the east, Edsall Road on the south, and Lincolnia Road on the west, contained 114 persons in April, 1960, as reported by the U. S. Bureau of the Census. The population is not expected to increase beyond 500 persons by the year 1963. However, it is likely that the population of this neighborhood will reach a maximum level of 12,000 persons prior to the year 2000, of which 600 will be children requiring enrollment in a public grade school.

Based on the standards contained in this report, the neighborhood will require 12.0 acres of neighborhood park and 18 acres of playground space to adequately serve the maximum population. It is recommended that two 15 acre neighborhood-playground combined sites be located in this neighborhood, one east of the proposed Van Dorn Street and the other west. In addition, it is further recommended

that tot-lot equipment be provided on these sites to serve the anticipated apartment projects. The neighborhood will require a grade school building to serve the anticipated 600 grade school age children. Such facility should be constructed on the park site west of the proposed Van Dorn Street since this site would be most centrally located with respect to the entire neighborhood. The school building need not be constructed until the neighborhood yields 175 children in this age bracket. The site, however, should be acquired prior to the neighborhoods development to assure proper location.

Neighborhood "11"

Located in the southwest section of the City and bounded by Fairfax County and Shirley Memorial Highway on the west, Duke Street on the north, Lincolnia Road on the east, and the proposed industrial complex on the south, contained approximately 133 persons in April, 1960, as computed by the United States Bureau of the Census. The population is not expected to increase to any great extent by the end of 1963. However, prior to the year 2000, it is anticipated that the neighborhood will encompass a maximum of 2,875 persons and yield approximately 180 children requiring enrollment in the Alexandria Public School System.

In an effort to afford the anticipated maximum population with adequate park facilities, it is recommended that a minimum of 7.2 acres of the 12.0 acre vacant tract owned by the City and located south of Stevenson Avenue be facilitated with playground, tot-lot, and neighborhood park equipment as well as a grade school building. The 7.2 acres will surpass minimum standards recommended for grade school sites by the State of Virginia. Construction of the school and installation of equipment need not take place until the neighborhood yields 175 children of grade school age, however.

The remaining 4.8 acres of the City owned tract should be used for the best interests of the City. It should not be released until all other possible public use of this property is fully appraised.

Neighborhood "12"

Located in the mid-western portion of the City and bounded by Seminary Road on the north, North Howard and North Jordan Streets on the east, Duke Street and Holmes Run on the south and the proposed North Pickett Street on the west, contained 4,036 persons in April, 1960, as computed by the United States Bureau of Census. By the end of 1963, the population will have reached 4,276 persons and prior to the year 2000 the population will reach a maximum of 4,639 persons of which 350 will be children requiring enrollment in the Alexandria Public School System.

Based on the maximum population and standards contained in this report for neighborhood parks, playgrounds, and school facilities, it does not seem advisable that any additional park or school facilities be provided for this neighborhood. The Patrick Henry School site located centrally within the neigh-

borhood consisting of 15 acres and providing a paved play area, two basketball courts, baseball and softball facilities for youth only, as well as swings, jungle gym and horizontal bars, will serve the maximum population more than adequately. The only recommendation is that a portion of Patrick Henry School be designated for neighborhood relaxation in order to promote the most diversified usage of the existing 15 acre site.

Neighborhood "13"

Located in the central portion of the City and bounded by Seminary Road on the north, the proposed Fort Williams Parkway on the east, Duke Street on the south, and North Howard and North Jordan Streets on the west, contained 4,572 persons in April, 1960, as reported by the United States Bureau of Census. By the end of 1963, the population will be approximately 5,310 persons and prior to the year 2000 it can be reasonably expected that the neighborhood will reach a maximum of 6,327 persons.

A centrally located school site should be acquired at the earliest possible time to provide the existing population with a school facility within convenient and safe walking distances. It is estimated that approximately 800 children of grade school age reside in the neighborhood at the present time. The maximum population will yield approximately 650 children within this age group, 625 of whom will likely require enrollment in the Alexandria School System. The school site should consist of 12 acres in order to meet standards prescribed by the State of Virginia to serve both Neighborhood "13" and "15". The site should be facilitated with playground and neighborhood park equipment, in addition to tot-lot equipment in order to provide maximum public usage of the site. The 8.0 acre tract located in the southeastern portion of the neighborhood, presently owned by the City, should be improved as a neighborhood park.

Neighborhood "14"

Located in the southern portion of the City bounded by Duke Street on the north, South Quaker Lane on the east, and Fairfax County and Cameron Run on the west, contained 2,548 persons in April, 1960, as reported by the United States Bureau of Census. It is not anticipated that the population will increase by the year 1963, however, it can reasonably be expected that the population will exceed 3,000 persons prior to the year 2000. The neighborhood's shape is extremely elongated in an east west axis.

The present Stonewall Jackson-Duke Street school facilities are located in the extreme eastern section of the neighborhood on a 15 acre site equipped with playground and playfield facilities, in addition to tot-lot apparatus. In addition an auditorium with play space and movable seats is available to the public after school hours. The neighborhood is also served by Holmes Run Park located in the extreme western section of the neighborhood consisting of approximately 1.13 acres and facilitated with playground and tot-lot equipment.

It is recommended that a

site be selected within the central portion of the neighborhood to provide playground, neighborhood park, and tot-lot facilities. At a time when the Stonewall Jackson-Duke Street School can be made available for an alternative public purpose, it is also recommended that a school building be constructed on this centrally located site to serve the neighborhood in a more desirable and convenient manner. The Strawberry Hills Citizens Association is cognizant of both the poor location of the school and playground and strongly recommends that the City purchase a central property for playground purposes. The Park and Recreation Department is in sympathy with their recommendation. The vacant 5.0 acres of vacant property fronting on the east side of South Early Street seems to be the one feasible alternative for providing a playground within safe and convenient walking distance to the children. Virginia state standards prescribe that a grade school site for this neighborhood be a minimum of 8.0 acres to provide adequate space for the anticipated 300 children who will require admission to the Alexandria Public Grade School System. Such a site is virtually impossible to acquire at this time without costly building destruction measures.

Neighborhood "15"

Located in the central portion of the City and bounded by Seminary Road on the north, North Quaker Lane on the east, Duke Street on the south, and the proposed Fort Williams Parkway on the west, accounted for 170 persons in April, 1960, as reported by the United States Bureau of the Census. It is anticipated that the population will increase to 488 persons by the end of 1963, and prior to the year 2000, the population will likely contain 1,600 persons. The relatively low population projection for this neighborhood is based on the very restrictive zoning contained within its boundaries.

Based on the maximum projected population and the standards contained within this report, the neighborhood will require a playground area consisting of 2.4 acres and a neighborhood park consisting of 1.6 acres.

It is recommended that these two park types be combined in one 4.0 acre tract located centrally within the neighborhood. It is further recommended that tot-lot equipment be provided on the site in an effort to provide maximum multiple usage of the public facility.

It is not anticipated that more than 170 children requiring admission to the Public Grade School System will ever reside in this neighborhood. Considering this fact, no school building is recommended for this neighborhood. The alternative recommendation is that the school site recommended for Neighborhood "13" serve this neighborhood as well as its own.

Neighborhood "16"

Located in the north central portion of the City and bounded by King Street on the north, the Bradlee Shopping Center on the east, Braddock Road on the south

and the proposed expansion to Fort Ward Park on the west, contained 2,002 persons in April, 1960, as reported by the U.S. Bureau of Census. It is anticipated that this neighborhood will contain 3,002 persons by the year 1963, and prior to the year 2000, it can be reasonably anticipated the neighborhood will encompass 3,700 persons and yield 225 children requiring enrollment in the Alexandria Public School System.

The neighborhood is presently served by the Minnie Howard School, consisting of 12 acres and equipped with playfield, playground, and tot-lot facilities including swings, jungle gym, horizontal bars, paved play area, basketball, softball, and baseball facilities. Considering the maximum number of children of grade school age expected to attend the facility, in addition to the 225 children contained in Neighborhood "7" who will use the school, it does not seem necessary to add new grade school properties nor expand the existing facility. The Minnie Howard School site will also serve the neighborhood most effectively as a playground. It is recommended, however, that a portion of the property be improved to serve the neighborhood with a relaxation area.

Also located within this neighborhood is Fort Ward Park consisting of 25 acres. It is recommended that this historic city-wide park site be expanded with an additional 17 acres to more fully portray its original function as a Union defense fortification during the Civil War.

Neighborhood "17"

Located in the north central portion of the City and bounded by West Glebe Road on the north, Russell Road on the east, Beverley Drive on the south and Arlington County on the west, accounted for 6,990 persons in April, 1960, as reported by the United States Bureau of Census. It is not anticipated that this population will increase to beyond 7,035 by the year 1963, and prior to the year 2000, it will likely contain a maximum population of not more than 7,225 persons and yield approximately 700 children ages 6 through 12 of which 550 will require enrollment in the Alexandria School System.

The neighborhood is presently served by the Barrett Grade School containing 5.0 acres and facilitated with playground and tot-lot equipment. The size of the Barrett School site is far less than what would be prescribed by the State of Virginia to adequately serve this neighborhood.

It is recommended that the 9.2 acre private park property adjacent be made available for school use. The neighborhood is also served by a 1.0 acre playground located on Overlook Drive.

Neighborhood "18"

Located in the central portion of the City having an irregular boundary formed by Beverley Drive on the north, Russell Road on the east, Braddock Road, Oakland Terrace and King Street on the south, Arlington County on the west, contained approximately

5,972 persons in April, 1960, as reported by the U.S. Bureau of Census. By the end of 1963, it is anticipated that the population will reach 6,160 persons and prior to the year 2000, the neighborhood will likely encompass 6,300 persons.

Based on the maximum population and standards applied in this report the neighborhood will require 9.4 acres of playground space in addition to 6.3 acres of neighborhood park. At the present time it is served by the George Mason Grade School erected upon a 9.8 acre site equipped with playfield and playground equipment including baseball facilities, softball facilities, basketball courts and a paved play area, in addition to a 1.12 acre tot-lot equipped with apparatus including swings and jungle gym. The neighborhood also contains Timberbranch Park consisting of 18.5 acres located in a stream valley. This property is useful only as a scenic drive. Also within this neighborhood is a tot-lot located on Woodbine Street.

It is anticipated that at the time the neighborhood reaches its maximum population it will yield 625 children requiring enrollment in the public grade school system. The George Mason School lacks only 1.4 acres of conforming to standards established by the State of Virginia. It is recommended that a 3.6 acre park site be acquired, centrally with respect to the neighborhood, to be developed as a neighborhood park, playground, and tot-lot. It is recommended that a portion of George Mason School be improved with neighborhood park equipment and the 2.2 acre Monticello Park site be improved with playground, neighborhood park, and tot-lot equipment.

Neighborhood "19"

Located in the center of the City and bounded by King Street, Janneys Lane, and Quaker Lane, contained a population of 2,417 persons in April, 1960, as reported by the U. S. Bureau of Census. By the end of 1963, it is anticipated the population will approach 2,500 persons and prior to the year 2000, it is likely this neighborhood will contain a maximum 2,590 persons yielding approximately 275 children requiring enrollment in the Alexandria Public Grade School System.

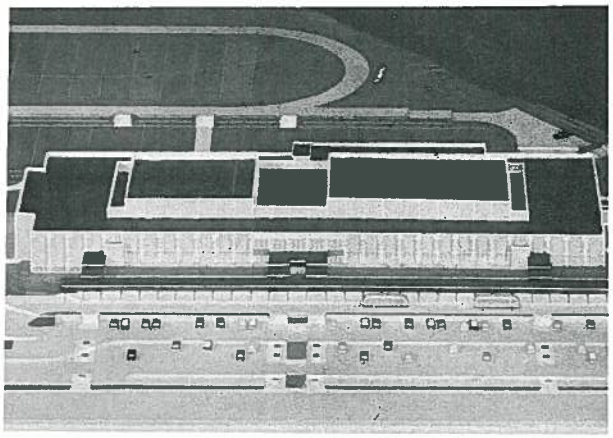
Based on the maximum projected population and the standards employed in this report, the neighborhood will require 3.9 acres of playground space and 2.6 acres of neighborhood park.

The neighborhood is presently served by a 1.5 acre privately owned playground also equipped with tot-lot apparatus located at 1000 Braddock Road. The 6.0 acre MacArthur School site, also located within this neighborhood, is equipped with playground and tot-lot apparatus. Forrest Park, containing 17 acres, is also located in this neighborhood but at present is unimproved with any park facilities.

It is recommended that a high school site consisting of 25 to 29 acres be provided within this neighborhood to serve the maximum number of high school age children and youths who will require enrollment in the Alexandria High School System, estimated at 1,550 to 1,900

pupils. The high school would serve the community containing neighborhoods 17, 18, 19, 20, 21, 22, and 23. The high school site as proposed in the Mud Town Urban Renewal Project will provide sufficient space to accommodate the maximum number of pupils based on standards established by the State of Virginia.

When comparing the existing neighborhood orientated park and school facilities to standards contained in this report, it appears evident that any future land acquisitions for this neighborhood beyond what is proposed for the high school is unnecessary. It is recommended, however, that the 17.0 acre Forrest Park site be improved as a neighborhood park to be equipped with benches in an effort to serve the neighborhood as a relaxation area.



Model of proposed
T. C. Williams High School

Neighborhood "20"

Located in the south central portion of the City and bounded by King Street and Callahan Drive on the east, Duke Street on the south, North Quaker Lane on the west, and Janneys Lane on the north accounted for 4,022 persons in April, 1960, as reported by the U. S. Bureau of Census. It is anticipated that by the end of 1963, the population will approach 4,400 persons and prior to the year 2000, it is estimated that the neighborhood will be populated by a maximum of 4,915 persons and yield approximately 450 children requiring attendance in the Alexandria Public Grade School System.

Based on the maximum projected population and standards contained in this report, the neighborhood will require 4.9 acres of neighborhood park and 7.4 acres of playground space.

At the present time the neighborhood contains Taylor Run Park consisting of approximately 19 acres. A small portion (2.5 acres) of this park, located in the southern section of the neighborhood, is equipped with playground facilities. Much of the remaining portion of this park is unusable as a result of rugged terrain. Upon completion of the Taylor Run Parkway the entire open space will likely be used as a scenic drive.

It is recommended that a 29.0 acre site be developed in the southern portion of the neighborhood west of the George Washington Masonic Memorial to serve as a city-wide park. The Alexandria Reservoir occupies approximately 1/3 of this property. It is further recommended that a school be constructed in the northwest portion of this recommended city-wide park in an effort to serve the anticipated maximum number of public grade school children with an adequate facility within safe walking distances of

the neighborhood. Approximately 12 acres of this park should be allocated for playground and neighborhood park facilities, in addition to tot-lot equipment to serve also as the grade school site, leaving the remaining 17.4 acres for city-wide park activities.

Neighborhood "21"

Located in the extreme northern portion of the City and bounded by Arlington County on the north, Mt. Vernon Avenue and Russell Road on the east, and the W. & O. D. Railroad on the south, encompassed 3,116 persons in April, 1960, as reported by the U. S. Bureau of Census. It is not anticipated the population will change by the year 1963, and it is not estimated that the maximum population of this neighborhood will ever exceed 3,450 persons or contain more than 175 children requiring enrollment in the Alexandria Public School System.

Based on the anticipated population and the standards contained in this report, the neighborhood will require 5.1 acres of playground space, in addition to 3.4 acres of neighborhood park. A school site would also be required to serve the neighborhood, to be erected on a 6.7 acre parcel based on standards recommended by the State of Virginia.

It is recommended that a site consisting of approximately 8.5 acres be selected centrally located, as is economically possible, with respect to the neighborhood population. Such a site should be facilitated with playground and neighborhood park equipment, tot-lot apparatus, and a school building. This will allow maximum usage of the public improvement.

Neighborhood "22"

Located in the extreme northern portion of the City and bounded by Arlington County on the north, Jefferson Davis Highway on the east, W. & O. D. Railroad on the south and Mt. Vernon Avenue and Russell Road on the west, contained 5,016 persons in April, 1960, as reported by the U. S. Bureau of Census. The maximum projected population is 5,500 persons approximately 450 of whom will require enrollment in the Alexandria Grade School System. It is not anticipated that this population will change considerably.

Based on the population and standards contained in this report, the neighborhood requires 8.2 acres of playground in addition to 5.5 acres of neighborhood park. At the present time it is served by the 12.0 acre Cora Kelly School site which is equipped with playfield and playground facilities including paved play area, basketball courts, softball and baseball facilities. It is also facilitated with tot-lot equipment including swings and jungle gyms.

It is recommended that a portion of the Cora Kelly School site be improved as a neighborhood park and recommended further that the 44.0 acre publicly owned property north of the school be improved with picnicking facilities to serve the City of Alexandria as a city-wide park.

Neighborhood "23"

Located in the north central portion of Planning District No. 2, and bounded roughly by the W. & O. D. Railroad on the north, Commonwealth Avenue on the east, Mt. Ida Avenue on the south, and Russell Road on the west, contained 3,488 persons in April, 1960, as computed by the U. S. Bureau of Census. By the end of 1963, the population will rise to 3,870 persons, but will not increase to any extent beyond 1963. The 1963 population will also yield approximately 400 children requiring enrollment in the Alexandria School System.

Based on the maximum population and the standards used in this report, the neighborhood will require 5.7 acres of playground area, in addition to 3.8 acres of neighborhood park.

At the present time the neighborhood has no school or park facilities. It is recommended that a combination neighborhood park-playground site consisting of 9.5 acres be selected, centrally located within the neighborhood. It is further recommended that the site be improved with a school building and tot-lot apparatus, to obtain maximum usage from the public property.

Neighborhood "24"

Located in the eastern portion of Planning District No. 2 and bounded roughly by Commonwealth Avenue and Russell Road on the west, Mt. Vernon Avenue on the east, and Braddock Road on the south, and Mt. Ida Avenue on the north, encompassed 5,072 persons in April, 1960, as reported by the U. S. Bureau of Census. This population will increase to 5,150 persons by 1963, but is not expected to increase to any considerable extent during the following 20 - 40 years, unless a considerable change is made to the Generalized Land Use Plan in this area. The neighborhood will contain approximately 500 children requiring enrollment in the Alexandria Grade School System.

At the present time the neighborhood is served by the Mt. Vernon Grade School located on a 5 acre site, facilitated with playground and tot-lot equipment. In addition a 0.15 acre tot-lot lies within this neighborhood on Mason Avenue.

Virginia state standards prescribed that a grade school site serving 500 school children be a minimum of 10.0 acres. It is recommended that a site this size be acquired, centrally located within the neighborhood, at a time when such acquisition becomes possible and at a time when an alternative use of the existing school building is determined or when the existing school building becomes obsolete. Park use of the property should be retained, however. The 10.0 acre site should also be facilitated with neighborhood park and playground equipment in addition to tot-lot apparatus to achieve maximum usage of the public property.

Neighborhood "25"

Located in the eastern portion of Planning District No. 2 and bounded by Hume Avenue on the north,

the R. F. & P. Railroad on the east, Braddock Road on the south, and Mt. Vernon Avenue on the west, contained approximately 4,945 persons in April, 1960, as reported by the U.S. Bureau of Census. It is anticipated by the year 1963, the population of this neighborhood will reach 5,150 persons and yield approximately 525 children requiring admission in the Alexandria Public Grade School System. The population will not likely increase to any great extent prior to the year 2000 unless considerable change is made to the Generalized Land Use Plan in this area.

The neighborhood is presently served by the George Washington High School playfield consisting of 23 acres and the Municipal Stadium playfield consisting of 13 acres.

Based on the maximum population anticipated for this neighborhood, 7.7 acres of playground space, in addition to 5.1 acres of neighborhood park will be required. Since the neighborhood is not served by a grade school at this time, and since the service provided by the high school and Municipal Stadium is orientated to the community rather than the neighborhood, it is recommended that a site be acquired centrally located with respect to the neighborhood consisting of 12.8 acres on which a grade school can be constructed and where playground and neighborhood park facilities can be provided, in addition to tot-lot apparatus.

George Washington High School had an enrollment in April, 1960, of 1,571 pupils and a capacity for 1,530 pupils. This enrollment has been steadily increasing during past years. It is estimated that this school will contain between 1,800 to 2,200 pupils if future redevelopment of Neighborhoods 24, 25, 26, 27, 28, 29, 30, and 31 take place as anticipated. The high school site does not satisfy Virginia state standards at the present time and will satisfy the State's standards even less in the future. It is suggested that the high school be improved to handle this additional load or a better location be selected in the future centrally with respect to the high school population. Planning District No. One should be strongly considered.

Neighborhood "26"

Located along the west boundary of the R. F. & P. Railroad and also bounded by Braddock Road on the north, King Street on the south, and the Ivy Hill Cemetary and Oakland Terrace on the west, encompassed 4,498 persons in April, 1960, as computed by the U. S. Bureau of Census. The population will not increase beyond 4,150 by the year 1963, and prior to the year 2000, it is anticipated that the population will not reach more than 4,700 persons, yielding approximately 510 children requiring enrollment in the Alexandria Public Grade School System.

The neighborhood is presently served by the centrally located Maury School site consisting of 7.0 acres and containing a paved play area, basketball court, and softball facilities in addition to a 1.49 acre tract with a

jungle gym and horizontal bars; therefore, serving the neighborhood as a playground with tot-lot facilities. The neighborhood also contains the Sunset Drive tot-lot consisting of 0.1 acres located on the corner of Sunset Drive and King Street. Based on the maximum population which can be attained in the neighborhood, it is recommended that a 5.5 acre playground-neighborhood park site be selected east of Commonwealth Avenue, also to be equipped with tot-lot apparatus. Although the Maury School site is inadequate, according to Virginia state standards, it is not recommended that the site be expanded as a result of adjacent obstacles. It is recommended; however, that a small portion of this site be used as a neighborhood park.

Neighborhood "27"

Located to the east of the R. F. & P. Railroad and also bounded by Pendleton Street on the north, Washington Street on the east, and Cameron Street on the south, contained 4,557 persons in April, 1960, as reported by the U. S. Bureau of Census. By the end of 1963, the population will not likely increase to any great extent, but prior to the year 2000, the neighborhood might contain 5,800 persons if developed as proposed in the Generalized Land Use Plan.

The neighborhood is presently served by the Jefferson School containing 8.0 acres on which is located basketball courts, tennis courts, softball and baseball facilities, in addition to a football field without lights and seating. The school structures have a capacity to more than handle the possible 550 children who will require enrollment in the grade school system. The school can also handle the projected 100 children between King and Cameron Streets south of Jefferson School, and 170 children projected in Neighborhood "29". The Cameron Street Center, comprising 2.0 acres, is also located in this neighborhood, in addition to a 1.5 acre playground at Queen and Fayette Streets.

Based on the maximum projected population of this neighborhood and standards contained in this report, the neighborhood will require 5.1 acres of additional park space. It is recommended that the existing playgrounds receive minor alterations so that the neighborhood may be supplied with neighborhood park facilities in addition to tot-lot equipment. It is further recommended that the Jefferson School site be expanded an additional 5.2 acres to provide the additional required open space acreage.

Neighborhood "28"

Located in the northern portion of Planning District No. 1 and bounded roughly by Slater's Lane and the W. & O. D. Railroad on the north, Washington Street on the east, Pendleton Street on the south, and the R. F. & P. Railroad on the west, encompassed approximately 5,139 persons in April, 1960, as reported by the U. S. Bureau of Census. It is not anticipated that the population will surpass the 5,210 mark by the end of 1963, nor is it anticipated that the population will increase considerably prior to the year 2000. It is estimated that approximately 330 children will require enroll-

ment in the Alexandria Grade School System at the present time.

The neighborhood is presently served by a playground also facilitated with tot-lot apparatus located on Henry Street and consisting of 2.0 acres. After future widening of Henry Street the playground will be reduced in size to approximately 1.0 acres. The neighborhood is also served by the Charles Houston Grade School site consisting of 3.0 acres and equipped with a basketball court, paved play area, in addition to a jungle gym and swings, in addition to the 15.0 acre Parker Gray High School site containing both playground and playfield facilities and a 0.5 acre tot-lot located at 1005 Pendleton Street.

Ficklin School is located immediately outside this neighborhood and surrounded for the most part by industrial and commercial properties. Because of the low density of residential population on properties surrounding the Ficklin School site, and since these same properties are proposed for other than residential purposes on the Generalized Land Use Plan, Ficklin School and adjoining properties have been excluded from residential neighborhoods. It is recommended that the Ficklin School site and adjacent park property consisting of a total of 7.0 acres and that the 99.0 acre Federally owned waterfront park be requested for city-wide park improvement.

Based on the maximum expected population, the neighborhood has an adequate supply of playground and neighborhood park area; however, Virginia state standards recommend that a school site serving 330 children consist of a minimum of 8.3 acres. It is recommended that in the future the existing public school site be enlarged to provide the adequate space recommended by standards or that an alternative site be acquired centrally located with respect to the neighborhood on which all these facilities can be installed.

Neighborhood "29"

Located just north of the King Street Central Business District, and also bounded by Washington Street on the west, Pendleton Street on the north, and the Potomac River on the east, contained 2,210 persons in April, 1960, as reported by the U. S. Bureau of the Census. It is not likely that this population will change through the year 1963, and prior to the year 2000, it is not anticipated that the neighborhood will increase to beyond 2,310 persons based on redevelopment conforming to the Generalized Land Use and Urban Renewal Plans.

The neighborhood at present does not contain any park or school facility. Immediately adjoining, however, is the Pendleton Recreation Center containing tot-lot apparatus and playground equipment and consisting of 2.0 acres. Also included on this site is a recreation building.

Based on the maximum projected population and standards contained in this report, the neighborhood will require 3.8 acres to install a neighborhood park, playground, and tot-lot facilities.

It is recommended that such a site be selected on the waterfront in the vicinity of and include the Government Records Storage Center. It is recommended that the anticipated 170 children requiring grade school attendance be enrolled in Jefferson School.

Neighborhood "30"

Located in the southeastern portion of the City and bounded by the Central Business District on the north, Washington Street on the east, Fairfax County on the south, and Payne Street on the west, contained 4,205 persons in April, 1960, as computed by the U. S. Bureau of the Census. It is not anticipated that the population of this neighborhood will increase through the year 1963. If redevelopment takes place as proposed in the Generalized Land Use Plan, however, it is likely that the population of this neighborhood might reach 5,800 persons prior to the year 2000 and yield approximately 340 children requiring attendance in the Alexandria Public Grade School System.

The neighborhood is presently served by the 15 acre Robert E. Lee Grade School site containing tot-lot apparatus and playground equipment such as a paved play area, basketball court, softball facilities, swings, and a jungle gym. Located adjacent is the 0.5 acre Prince Street School site equipped with playground and tot-lot facilities. It is recommended that this property be used alternatively in the future as parking for the Central Business District.

Standards contained in this report indicate that the neighborhood will require 5.2 acres of neighborhood park and 7.8 acres of playground space based on the maximum anticipated population. The Robert E. Lee School site supplies ample space to accommodate these facilities. It is recommended that a portion of this site be improved as a neighborhood park. It is further recommended that the southern part of this neighborhood, south of the Capital Beltway to the Fairfax County limits, receive fill treatment to transform the existing swamp and water covered land into a 30.0 acre city-wide park. This recommendation is also expounded in the 1944 park plan by the National Recreation Association.

Neighborhood "31"

Located in the extreme southeast section of the City, encompassing much old and historic development, and bounded roughly by the Central Business District on the north, the Potomac River on the east and south, and Washington Street on the west, accounted for 5,180 residents in April, 1960, as reported by the U. S. Bureau of the Census. By the end of 1963, the population is expected to rise to 5,260 persons and as a result of population estimates, including anticipated high-rise apartment development in the vicinity of Hunting Towers, the maximum population projection is estimated at 6,760 persons, yielding approximately 535 children who will require enrollment in the Alexandria Grade School System.

The neighborhood at the present time contains a tot-lot con-

sisting of 0.2 acre located on the 200 block of South Royal Street. It also includes the 2.0 acre Potomac View Park located along the river between Wilkes and Gibbon Streets and facilitated with playground, tot-lot, and neighborhood park equipment including two basketball backboards, two paddle tennis standards, swings, combination ladder, benches and drinking fountains. Also contained within this neighborhood is the 3.0 acre Lyles Crouch School site including swings, jungle gym, paved play area and basketball courts, as well as playground and tot-lot equipment.

It is recommended that the Lyles Crouch site be improved with neighborhood park facilities in an effort to receive maximum usage of the public property. Although the school site is far below Virginia state standards to serve the anticipated 535 children, the buildings capacity is more than satisfactory. In addition, it is strongly recommended that the 62.0 acre Jones Point area, under ownership of the U. S. Government, be developed as a city-wide park. One of the objectives contained in this report is to derive maximum usage of the Potomac River for its natural beauty. The use of this property as a city-wide park site has been recommended for open space development for the past 20 years. It is again recommended in this report. Attempts should be made in the immediate future to negotiate with the Federal Government for proper treatment of this property as a city-wide park offering such advantages as picnicking, boating, tennis, articicially cooled ice skating rink, open air theater, natural pond, and parking.

"To be able to fill leisure times intelligently is the last product of civilization."

-----Bertrand Russell

TABLE IX

HIGH SCHOOL ENROLLMENT

APRIL, 1960

SCHOOL	NUMBER OF PUPILS
George Washington High School	1,571
Francis Hammond High School	1,866
Parker Gray High School	473
TOTAL	3,910

NOTE: Total high school enrollment represents 81% of high school age population.

GRADE SCHOOL ENROLLMENT

(Including Grades 1 through 8)

APRIL, 1960

SCHOOL	NUMBER OF PUPILS
Charles Barrett	478
Cora Kelly	517
MacArthur	531
George Mason	660
Jefferson (8th only)	515
Maury	524
Minnie Howard	504
Mt. Vernon	1,279
Henry	1,086
Prince Street	286
Robert E. Lee	748
Stonewall Jackson	323
Ficklin	254
William Ramsey	646
Houstin	846
Lyles Crouch	728
TOTAL	9,925

NOTE: Total grade school enrollment represents 77% of grade school age children.

TOTAL SCHOOL ENROLLMENT APRIL, 1960	13,835
TOTAL SCHOOL AGE CHILDREN - U. S. CENSUS	17,681

TABLE X

ALEXANDRIA PUBLIC SCHOOLS
ALEXANDRIA, VIRGINIA

ENROLLMENT OCTOBER 1, 1962

SCHOOL	OCTOBER 1, 1961	OCTOBER 1, 1962	DIFFERENCE	CAPACITY
Charles Barrett	438	410	- 28	540
Cora Kelly	512	562	+ 50	600
Douglas MacArthur	550	559	+ 9	630
Duke Street	190	194	+ 4	240
Francis Hammond High	1,853	2,084	+231	1,980
George Mason	596	572	- 24	720
George Washington High	1,787	1,811	+ 24	1,680
Jefferson	829	808	- 21	780
Maury	622	617	- 5	660
Minnie Howard	606	676	+ 70	750
Mount Vernon	1,302	1,257	- 45	1,175
Patrick Henry	911	934	+ 23	990
Prince Street	217	196	- 21	450
Robert E. Lee	599	567	- 32	900
Stonewall Jackson	481	485	+ 4	480
Theodore Ficklin	235	259	+ 24	360
William Ramsey	640	741	+101	1,050
Charles Houston	972	1,031	+ 59	810
Lyles-Crouch	756	765	+ 9	930
Parker-Gray High	570	568	- 2	435
	14,666	15,096	+430	

TABLE XI

POPULATION DISTRIBUTION BY CENSUS TRACTS

APRIL, 1960

CENSUS TRACT	AGES 6-13	PERCENT OF TOTAL	AGES 13-18	PERCENT OF TOTAL	TOTAL POPULATION
1	364	13.5	187	6.9	2,719
2	339	14.7	131	5.7	2,305
3	748	21.0	343	9.8	3,507
4	77	18.0	41	9.7	422
5	449	7.0	148	2.3	6,248
6	669	18.0	265	7.0	3,737
7	328	12.8	160	6.2	2,561
8	982	15.0	558	8.7	6,439
9	887	16.6	662	12.4	5,353
10	260	6.3	159	3.8	4,145
11	734	11.2	456	6.9	6,577
12	1,216	14.3	706	8.3	8,504
13	597	12.1	407	8.2	4,945
14	566	11.2	369	7.3	5,072
15	567	12.6	386	8.6	4,498
16	831	15.2	376	6.9	5,482
17	61	6.2	41	4.2	992
18	651	10.2	389	6.1	6,417
19	332	10.3	229	7.1	3,219
20	616	7.8	393	5.0	7,881
TOTAL	11,275	12.4	6,406	7.0	91,023

CENSUS TRACTS

6

City of Alexandria, Virginia

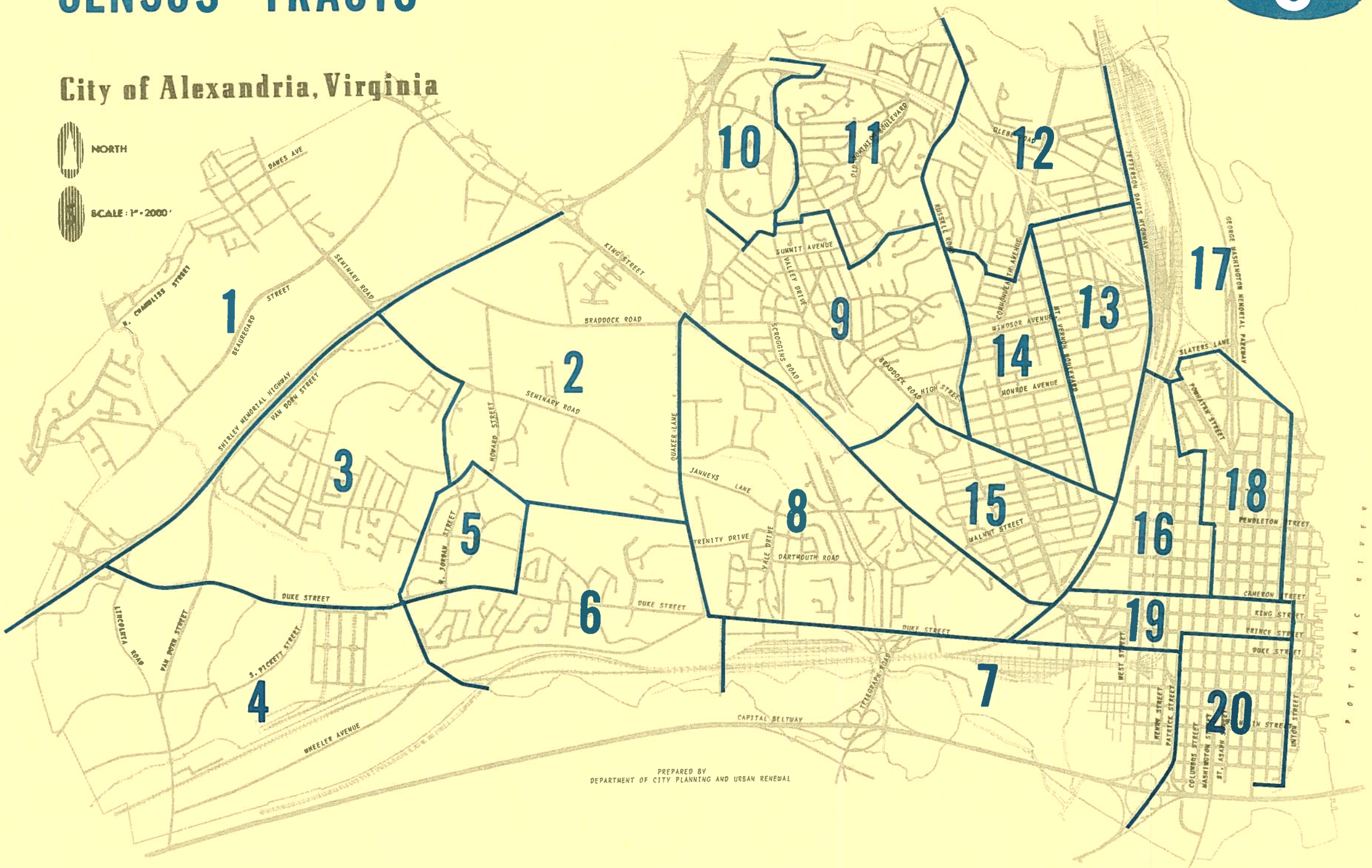


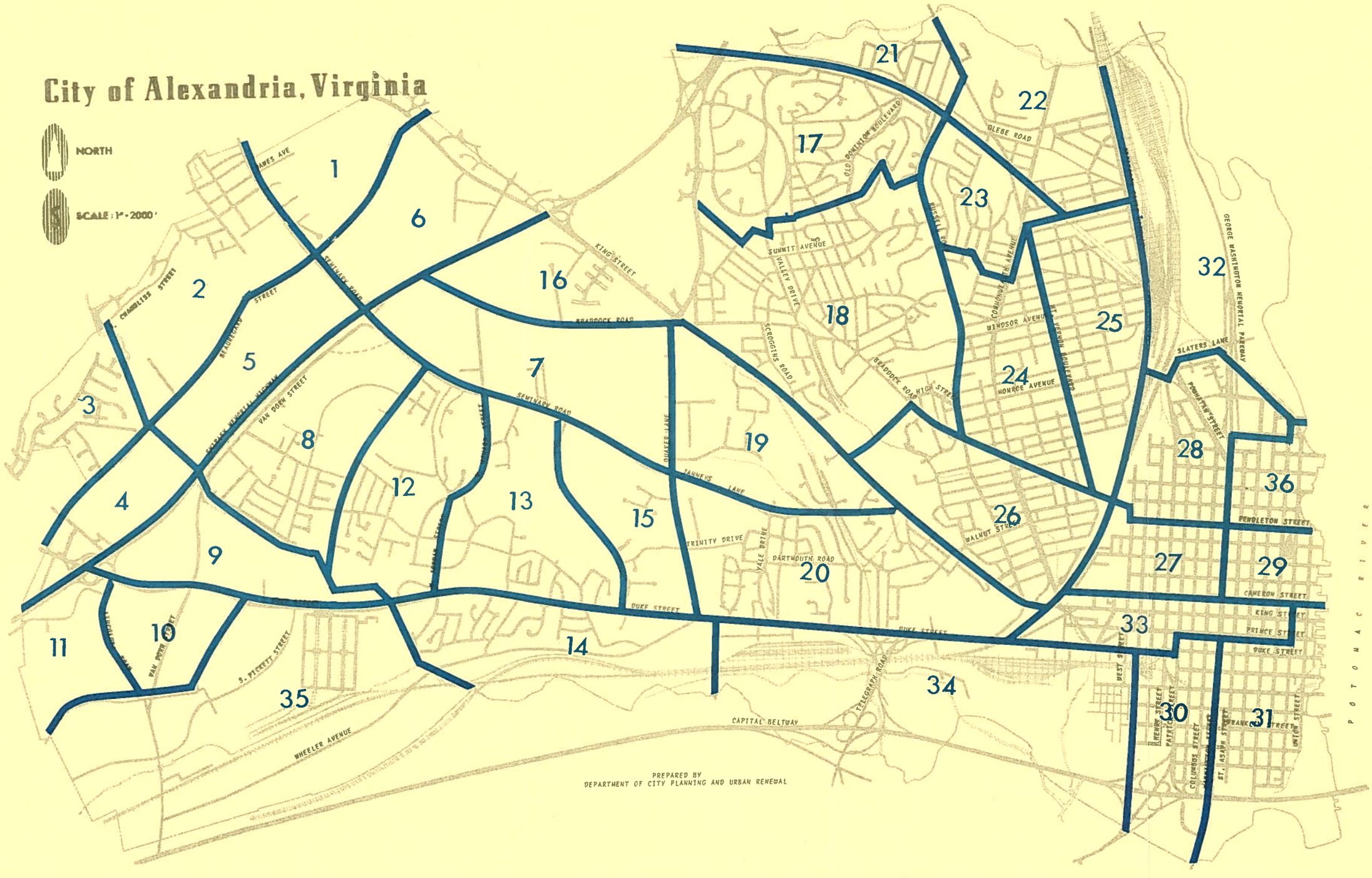
TABLE XII

POPULATION

NEIGHBOR-HOODS	EXISTING APRIL, 1960	PROJECTED THROUGH 1963	PROJECTED 1980 - 2000		
			TOTAL POPULATION	SINGLE-FAMILY OCCUPANTS	MULTI-FAMILY OCCUPANTS
1	108	725	3,700	1,008	2,692
2	588	1,095	3,824	2,217	1,607
3	816	816	1,000	1,000	
4	122	1,800	9,000		9,000
5	125	2,500	8,750		8,750
6	960	3,190	14,000		14,000
7	225	225	1,197	1,197	
8	2,224	4,547	6,764	1,260	5,504
9	113	350	3,500		3,500
10	114	500	12,000		12,000
11	133	133	2,875	586	2,289
12	4,036	4,276	4,639	1,773	2,866
13	4,572	5,310	6,327	5,127	1,200
14	2,548	2,548	3,000	2,548	452
15	170	488	1,600	1,600	
16	2,002	3,002	3,700	650	3,050
17	6,990	7,035	7,225	3,025	4,200
18	5,972	6,160	6,300	6,050	250
19	2,417	2,500	2,590	2,340	250
20	4,022	4,400	4,915	3,200	1,715
21	3,116	3,116	3,450		3,450
22	5,016	5,030	5,500	2,800	2,700
23	3,488	3,870	3,870	3,488	382
24	5,072	5,160	5,160	4,160	1,000
25	4,945	5,150	5,150	4,550	600
26	4,498	4,510	4,700	4,700	
27	4,557	4,557	5,800	4,350	1,450
28	5,139	5,210	5,210	1,210	4,000
29	2,210	2,210	2,310	1,000	1,310
30	4,205	4,205	5,800	800	5,000
31	5,180	5,260	6,760	3,360	3,400
TOTAL	85,683	99,978	160,616	63,999	96,617
	5,340	5,340			
	91,023	105,318			

NEIGHBORHOODS

City of Alexandria, Virginia



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PLAYFIELDS

Playfields serve in a different capacity than do neighborhood parks and playgrounds; they are orientated to communities rather than neighborhoods and are intended to serve children ages 15 and over as well as active adults. Playfields often include playground and tot-lot equipment in addition to relaxation areas within their boundaries. The rule of thumb generally accepted by park specialists is that a city provide 1½ acres of playfield space per 1,000 persons. Alexandria at the present time provides 11 playfields within its corporate limits, 8 of these are on school properties, 2 on city property, and one on a combined city-school property. Playfield space includes 16.2 acres of city owned property and 121.8 acres of School Board property. In total, City and School Board provide 138 acres of playfield space or 1.5 acres per 1,000 persons. When the City reaches its maximum population, it will be providing 0.9 acres per 1,000 persons based on existing park space.

This Plan recommends 3 playfields, one located west of Shirley Highway, another in the vicinity of Duke Street and Shirley Highway, and the third on property near Chinquapin Village at the corner of King Street and Quaker Lane. These three sites comprise 71.0 acres. In total the City will be providing 218.2 acres of playfield space to supply its maximum population based on this Plan. Measuring this to standards this Plan recommends 1.3 acres of playfield space existing and recommended per 1,000 persons.

Two of the recommended playfields are recommended for high school sites including the site west of Shirley Highway and the site at the corner of King Street and Quaker Lane. The site recommended in the vicinity of Shirley Highway and Duke Street is recommended as a Municipal Stadium site. The existing Municipal Stadium on the corner of Monroe Street and Jefferson Davis Highway is being studied for future use as a parking lot to serve the commuter facility recommended along the R. F. & P. Railroad proposed by the National Capital Transportation Agency. This site recommended on Duke Street could serve as an alternative location of the Municipal Stadium offering supervised play in competitive team sports on a site considerably larger than the existing stadium. Abandonment of the Municipal Stadium should not be considered, however, until the sites usefulness as a parking facility is proven.

It is recommended in this report that this site be used for multiple purposes in an effort to always attract crowds. Such multiple use will provide a market for the proposed regional shopping center nearby. The site's strategic location demands maximum usage.

INDOOR RECREATION FACILITIES

The City of Alexandria is presently served by three indoor recreation buildings located as follows: (1) Cameron and Wythe Streets, (2) 2704 Mt. Vernon Avenue, and (3) 1007 Pendleton Street. The Cameron Street Center includes a gymnasium, meeting rooms and facilities for arts

and crafts classes. The Mt. Vernon Avenue building (Del Ray) includes only arts and crafts facilities and meeting rooms. The Pendleton Street Recreation Center includes the same facilities as the Cameron Street Center.

Indoor recreation facilities offer an opportunity for children and adults to participate in active recreation in the winter months when outdoor recreation is at a low-ebb.

Most recreation experts agree that adequate public indoor recreation facilities should be provided at the community level and on playfield sites. Although there is a need for such facilities in the western part of the City, it may well be advisable to postpone construction in favor of concentrating on land acquisition since the lack of public land will require such extensive immediate acquisition.

CITY WIDE PARKS

Parks of this type are orientated to the City as a whole and the region when significant. The location of the parks need not be central but instead determined by scenery and areas of historical significance. Such parks are intended to offer a break in the daily routine for the enjoyment of the entire family. Picnicking, relaxation, and family sports are key uses of such parks.

The City of Alexandria at the present time has no improved city-wide parks. The nationally accepted standards of ten acres of park land to 1,000 persons is used in determining the adequacy of Alexandria's park land and is the basis of recommendations contained in this report. When the recommendations for tot-lots, neighborhood parks, playgrounds, and playfields are effectuated, the City of Alexandria will provide a total of 610.0 acres of park land or 3.8 acres per 1,000 persons. Ordinarily this would indicate that Alexandria will need 6.2 acres of city-wide park per 1,000 population, but since Alexandria is within a region now providing 32 acres per 1,000 persons and since little space is available beyond what is recommended herein, it is quite conceivable that the 306.6 acres recommended for city-wide parks, 260.0 acres of which are governmentally owned, will suffice considering the fact that Alexandria has acreage of regional park near its limits. It is urged that Alexandria consider joining the Northern Virginia Park Authority and make every effort to see that existing parks of the region are not spoiled by construction, and also participate in the acquisition of regional parks as they become needed as a result of future regional growth. This approach is a reasonable alternative to acquiring proper acreage of city-wide parks within the City's limits and allow the City to grow to a relatively high density as encouraged in the "Plan for the Year 2,000, The Nation's Capital".

The 5 sites recommended as city-wide parks include the development of the 25 acre Fort Ward Tract, in addition to the expansion and development of 17.6 acres. The development of Jones Point, the improvement of the 44 acre tract owned by the City just north of the Cora Kelly School, also the acquisition and development of

properties west of the Alexandria Water Company Reservoir along Duke Street, and the development of the 99 acre tract along the Potomac River, north of Slater's Lane, owned by the Federal Government. In total 306.6 acres are recommended for city-wide park development.

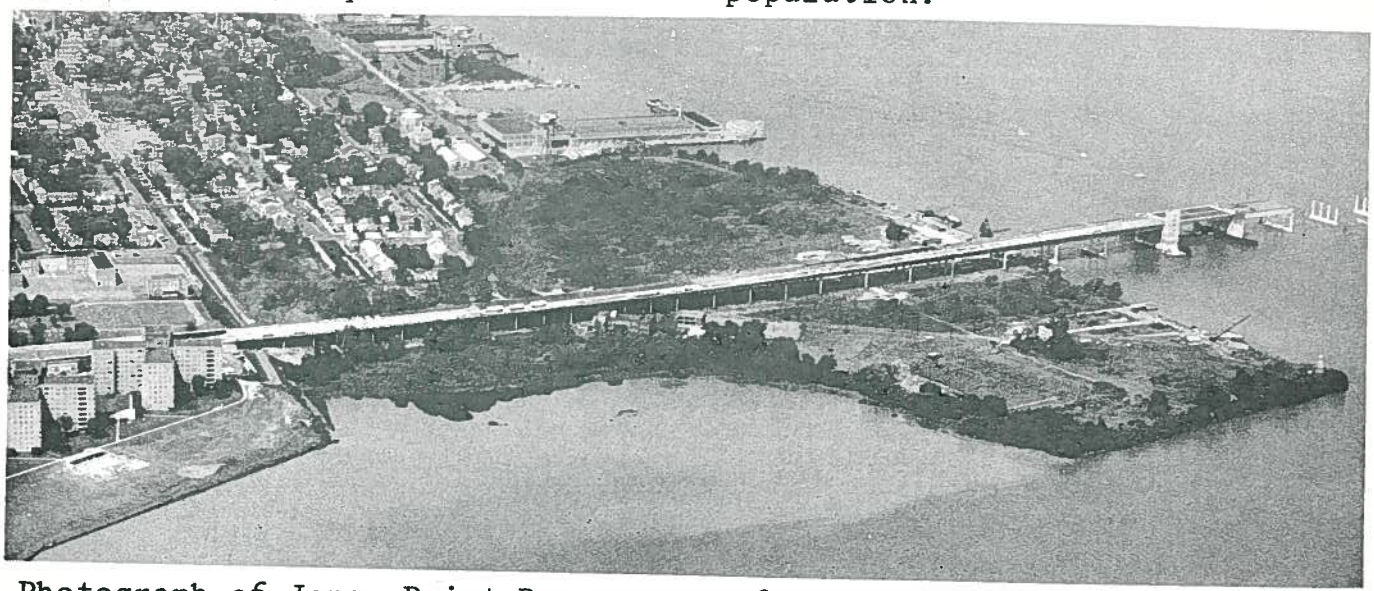
THE PLAN COMPARED TO STANDARDS

Most authorities agree that a City which provides 10 acres of park land per 1,000 persons has ample space with which to provide active and passive recreation facilities. Generally most of this acreage is alloted for the large city-wide and regional parks.

The City of Alexandria and the Alexandria School Board provides more than enough playfield space to adequately serve the existing population. The City, however, is deficient in every other phase of park planning. Only about 1/3 as much playground and neighborhood park space is provided as what would be required based on today's population.

While it is not reasonable for Alexandria to provide proper acreage in the City-Wide Park Category, it is strongly recommended that it participate in the acquisition of regional parks. Additional acreage is recommended as neighborhood parks and playgrounds to more than fulfill the City's needs in this category. Tot-lots are recommended in areas of potential high density, but it is not reasonable for the City to fulfill this obligation on separate sites because of the maintenance problem.

In total 686.3 acres of open space are recommended beyond the 234.9 acres presently existing. 317.6 acres of the recommended park land is presently in governmental ownership, either locally or federally. The existing and recommended 921.2 acres of park space represents 9.9 acres per 1,000 persons, July 1, 1962, or 5.9 acres per maximum population.



Photograph of Jones Point Recommended for City Wide Park Development

TABLE XIII

INVENTORY OF PARKS AND SCHOOLS BY NEIGHBORHOODS

EXISTING AND RECOMMENDED

NEIGHBOR-HOOD	PARK TYPE	ACRES EXISTING	ACRES RECOMMENDED
1	Recommended on Private Property:		
	Combination playground-neighborhood park, also tot-lot and grade school		9.3
2	Existing:		
	William Ramsey Grade School with playground	*15.0	
	Neighborhood Park & Tot-lot: Hamlet West	1.0	
	Recommended on Public Vacant Property:		**9.2
	Recommended on Private Property:		3.8
	Neighborhood Park		
3	Same as Neighborhood "2"		
4	Recommended on Public Vacant Property:		**1.6
	Recommended on Private Property:		10.3
	Neighborhood Park		
	Combination playground-neighborhood park		13.5
	Also tot-lot and grade school		
5	Recommended on Private Property:		27.0
	Playfield also high school		
	Combination playground-neighborhood park		13.1
	Also tot-lot and grade school		

* Existing School Property
** Recommended on Public Property

NEIGHBOR-HOOD	PARK TYPE	ACRES EXISTING	ACRES RECOMMENDED
6	Recommended on Public Vacant Property:		
	Neighborhood Park		**12.0
	Recommended on Private Property:		
	Combination playground-neighborhood park, also tot-lot and grade school		20.0
7	Served by facilities in Neighborhoods "8" and "16".		
8	Existing:		
	Francis Hammond High School with playfield	*25.0	
	Holmes Run Park, combination playground-neighborhood park	3.67	
	Recommended on Public Vacant Property:		**12.4
	Recommended on Private Property:		31.9
	Neighborhood Park		
	Combination playground-neighborhood park		9.3
	Also tot-lot and grade school		
9	Recommended on Private Property:		
	Combination playground-neighborhood park		8.7
	Also tot-lot and grade school		
	Playfield		20.0
10	Recommended on Private Property:		
	Combination playground-neighborhood park, also tot-lot		15.0
	Combination playground-neighborhood park, also tot-lot and grade school		15.0
11	Recommended on Public Vacant Property:		
	Combination playground-neighborhood park, also tot-lot and grade school		**7.2

* Existing School Property
** Recommended on Public Property

NEIGHBOR-HOOD	PARK TYPE	ACRES EXISTING	ACRES RECOMMENDED
12	Existing: Patrick Henry School with playground and tot-lot (neighborhood park recommended as part of site)	*15.0	
13	Recommended on Public Vacant Property: Neighborhood Park		**8.0
	Recommended on Private Property: Combination playground-neighborhood park, also tot-lot and grade school		12.0
14	Existing: Stonewall Jackson-Duke Street School with playfield, playground, and tot-lot	*15.0	
	Holmes Run Park with playground and tot-lot	1.13	
	Recommended on Private Property: Combination playground-neighborhood park, also tot-lot and grade school		8.0
15	Recommended on Private Property: Combination playground-neighborhood park, also tot-lot		4.0
16	Existing: Minnie Howard School with playfield, playground and tot-lot. (Recommended to provide neighborhood park facilities on site)	*12.0	
	Recommended on Public Vacant Property:		**25.00
	Recommended on Private Property: City-Wide Park (Fort Ward and Expansion)		17.6

* Existing School Property
** Recommended on Public Property

NEIGHBOR-HOOD	PARK TYPE	ACRES EXISTING	ACRES RECOMMENDED
17	Existing:		
	Barrett School, also playground and tot-lot	*5.0	
	Overlook Drive playground	1.0	
18	Existing:		
	George Mason School with playfield, playground and tot-lot. (Neighborhood park facilities are recommended on this site)	*9.8	
	Woodbine tot-lot	0.12	
	Recommended on Public Property:		
	Combined playground-neighborhood park, also tot-lot		**2.2
	Recommended on Private Property:		
	Combined playground park, also tot-lot		3.6
19	Existing:		
	MacArthur School with playground and tot-lot	*6.0	
	Playground with tot-lot	1.5	
	Recommended on Public Vacant Property:		
	Neighborhood park (Forrest Park)		**17.0
	Recommended on Private Property:		
	Playfield with high school		25.0
20	Existing:		
	West Taylor Run Parkway	2.5	
	Recommended on Private Property:		
	City-wide park also playground, neighborhood park, tot-lot, and grade school		29.0
21	Recommended on Private Property:		
	Combination playground-neighborhood park, also tot-lot and grade school		8.5

* Existing School Property
** Recommended on Public Property

NEIGHBOR-HOOD	PARK TYPE	ACRES EXISTING	ACRES RECOMMENDED
22	Existing: Cora Kelly School also playfield, playground and tot-lot. (Neighborhood park facilities recommended on site)	*12.0	
	Recommended on Public Vacant Property: City-wide park		**44.0
23	Recommended on Private Property: Combination playground-neighborhood park, also tot-lot and grade school		9.5
24	Existing: Mt. Vernon Grade School with playground and tot-lot	*5.0	
	Mason Avenue tot-lot	0.15	
	Recommended on Private Property: Combination playground-neighborhood park, also tot-lot and grade school		10.0
25	Existing: George Washington High School with playfield	*23.0	
	Municipal Stadium playfield	13.0	
	Recommended on Private Property: Combination playground-neighborhood park, also tot-lot and grade school		12.8
26	Existing: Maury Grade School with playground and tot-lot (Neighborhood park facilities recommended on site)	*7.0	
	Sunset Drive tot-lot	0.1	
	Recommended on Private Property: Combination playground-neighborhood park, also tot-lot		5.5

* Existing School Property
** Recommended on Public Property

NEIGHBOR-HOOD	PARK TYPE	ACRES EXISTING	ACRES RECOMMENDED
27	Existing:		
	Jefferson Grade School with playfield and playground. (Neighborhood park and tot-lot facilities recommended on site)	*8.0	Expansion 5.2
	Playground (Fayette & Queen)	.15	
	Cameron Street Center Recreation Building	2.0	
28	Existing:		
	1005 Pendleton Street tot-lot	0.5	
	Parker Gray High School with playfield. (Neighborhood park and tot-lot facilities recommended on site)	*15.0	
	Charles Houston Grade School with playground and tot-lot	*3.0	Expansion 5.3
	Henry Street playground with tot-lot	2.0	
	Ficklin School and city playfield with playground and tot-lot. (These properties are just outside neighborhood)	*5.0 2.0	
	Recommended on Public Vacant Property:		
	City-wide park		**99.0
29	Existing:		
	Pendleton Recreation Center with playground and tot-lot (located adjacent to neighborhood)	2.0	
	Recommended on Private Property:		
	Combination playground-neighborhood park, also tot-lot and grade school		3.8
30	Existing:		
	Robert E. Lee Grade School with playground and tot-lot. (Recommended neighborhood park facilities on site)	*15.0	
	Prince Street School with playground and tot-lot	*0.5	
	Recommended on Public Vacant Property:		
	City-wide park		**30.0

* Existing School Property
** Recommended on Public Property

NEIGHBOR-HOOD	PARK TYPE	ACRES EXISTING	ACRES RECOMMENDED
31	Existing:		
	Potomac View Park with playground, neighborhood park, and tot-lot	2.0	
	Tot-lot located 200 S. Royal Street	0.2	
	Lyles Crouch Grade School with playground and tot-lot. (Neighborhood park equipment recommended on site)	*3.0	
	Recommended on Public Vacant Property:		
	City-wide park		**62.0
	TOTAL ACRES	234.9	686.3
	TOTAL ACRES EXISTING AND RECOMMENDED	921.2	

STAGING SCHOOL CONSTRUCTION

In an effort to better define the recommended plan for school facilities, the plan is divided into three parts. Phase I indicates recommended school construction during the following three years. Phase II indicates recommended construction during the 16 years following Phase I, and Phase III (long range) indicates construction 1980 - 2000.

Phase I

It is strongly recommended that the following three grade schools and one high school be constructed during the approaching three year period:

(1) Grade school centrally located within neighborhood "6". This neighborhood is growing in population at an extremely rapid rate. It contained 960 persons in April, 1960. It will contain 3,190 persons by the end of 1963, and contain a maximum population of 14,000 persons during the 1980-2000 period.

(2) Grade school centrally located within neighborhood "8". This neighborhood contained 2,224 persons in April, 1960. It will contain 4,547 persons by the end of 1963, and 6,764 persons prior to the year 2000.

(3) Grade school located in the eastern portion of neighborhood "13". This neighborhood contained 4,572 persons in April, 1960. It will contain 4,276 persons by the end of 1963 and 4,636 persons prior to the year 2000.

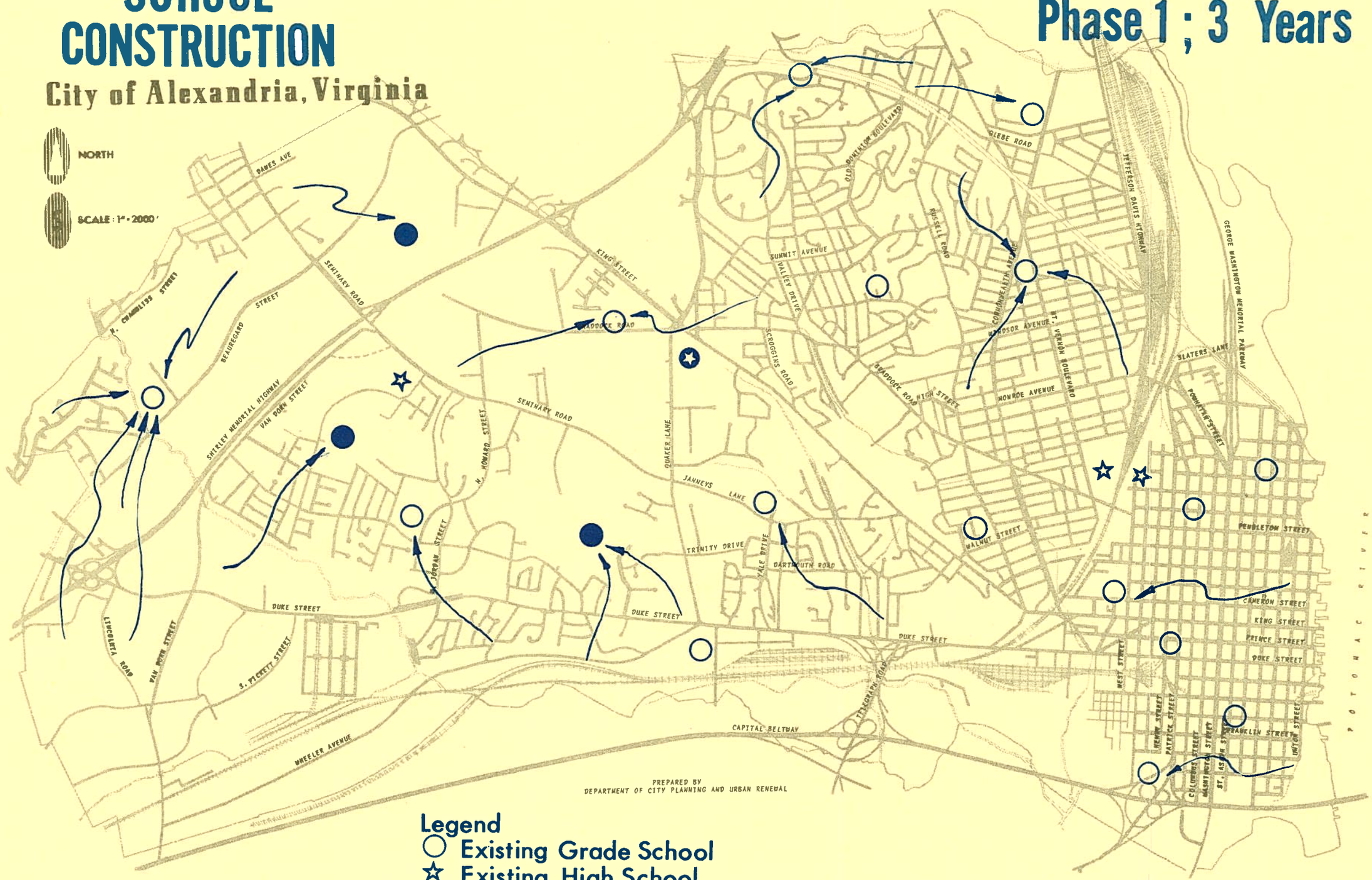
(4) High school located in the Mud Town Urban Renewal Project Area in the vicinity of Quaker Lane and King Street.

RECOMMENDED SCHOOL CONSTRUCTION

City of Alexandria, Virginia

8

Phase 1 ; 3 Years



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Legend

- ○ Existing Grade School
- ☆ Existing High School
- ● Proposed Grade School
- ✪ Proposed High School

62

Arrows indicated on the Phase I plan describe temporary service for neighborhoods without existing school facilities.

Phase II

It is recommended that the following four grade schools and one high school be constructed during the 16 years following Phase I.

(1) Grade school located centrally with respect to Neighborhood "1".
(2) Grade school located centrally with respect to Neighborhood "5".
(3) High school located centrally with respect to Neighborhood "5".
(4) Grade school located centrally with respect to Neighborhood "10".
(5) Grade school located centrally with respect to Neighborhood "11".

It is also recommended that alternative uses be explored for the Stonewall Jackson-Duke Street School and Prince Street School during this time period.

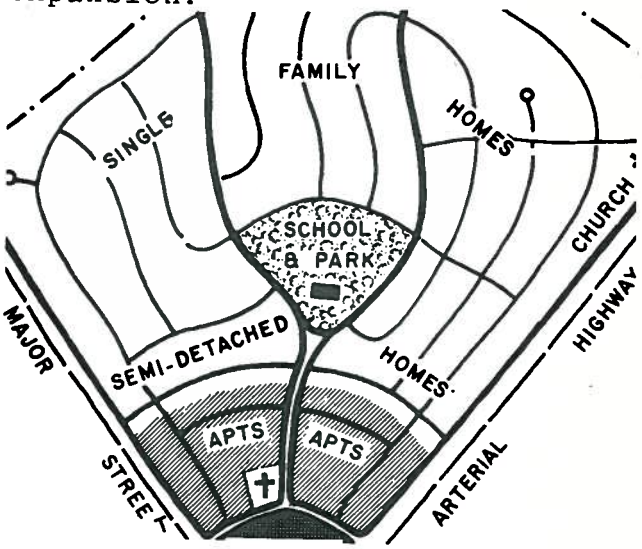
Arrows on the Phase II plan describe temporary service for neighborhoods without grade school facilities.

Phase III

It is recommended that the following eight grade schools be constructed during the years 1980 to 2000.

(1) Grade school located centrally with respect to Neighborhood "4".
(2) Grade school located centrally with respect to Neighborhood "9".
(3) Grade school located centrally with respect to Neighborhood "14".
(4) Grade school located centrally with respect to Neighborhood "20".
(5) Grade school located centrally with respect to Neighborhood "21".
(6) Grade school located centrally with respect to Neighborhood "23".
(7) Grade school located centrally with respect to Neighborhood "24".
(8) Grade school located centrally with respect to Neighborhood "25".

During this period it is recommended that alternative use be considered for the Mt. Vernon Grade School building. These new grade schools are suggested to replace this school to better serve the community. Lyles Crouch and Charles Houston and Jefferson Schools are recommended for site expansion.



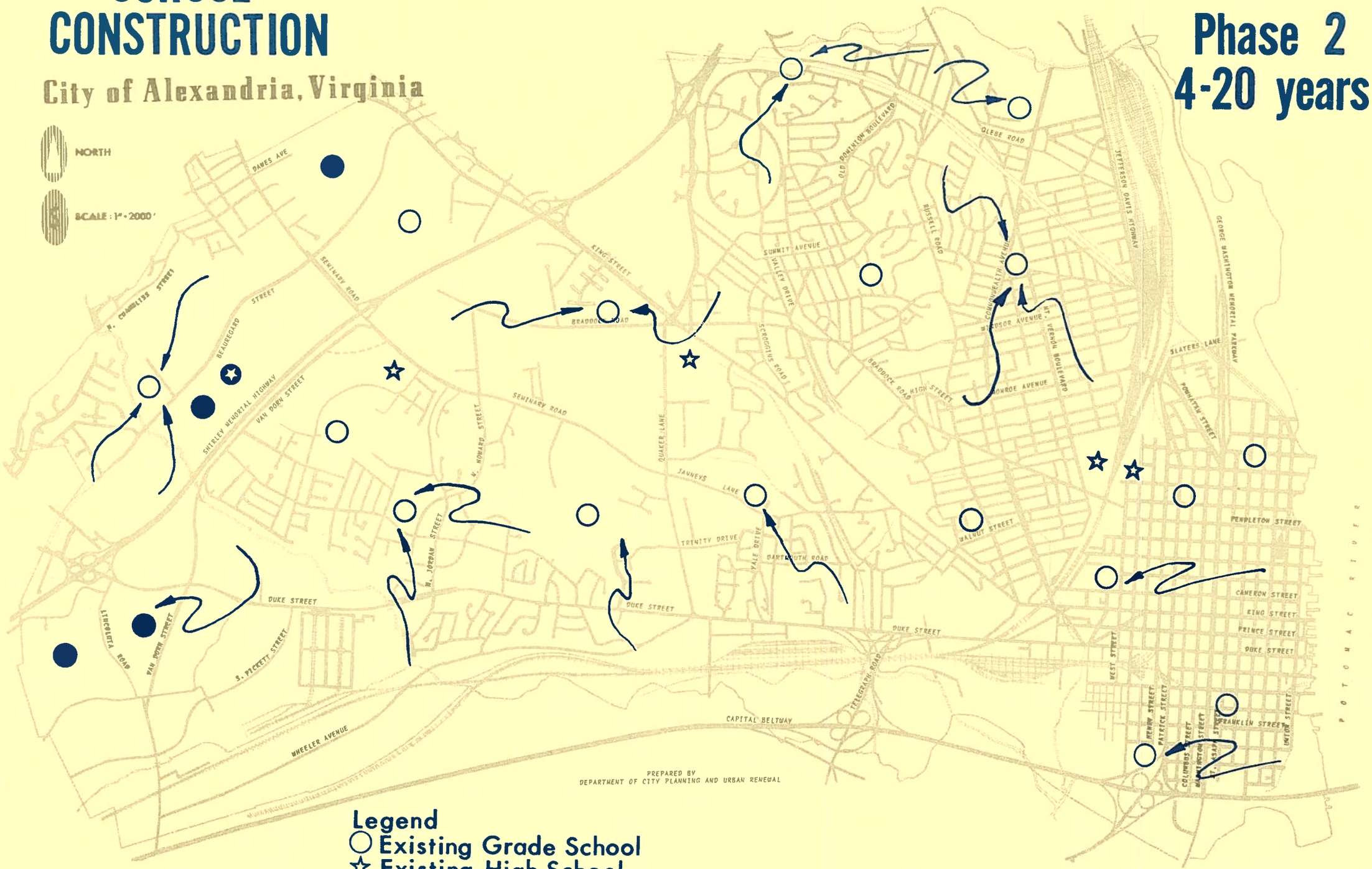
The above plan illustrates good school location with relation to neighborhood.

RECOMMENDED SCHOOL CONSTRUCTION

City of Alexandria, Virginia

9

Phase 2
4-20 years



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Legend
- ○ Existing Grade School
- ☆ Existing High School
- ● Proposed Grade School
- ✪ Proposed High School

64

RECOMMENDED SCHOOL CONSTRUCTION

City of Alexandria, Virginia

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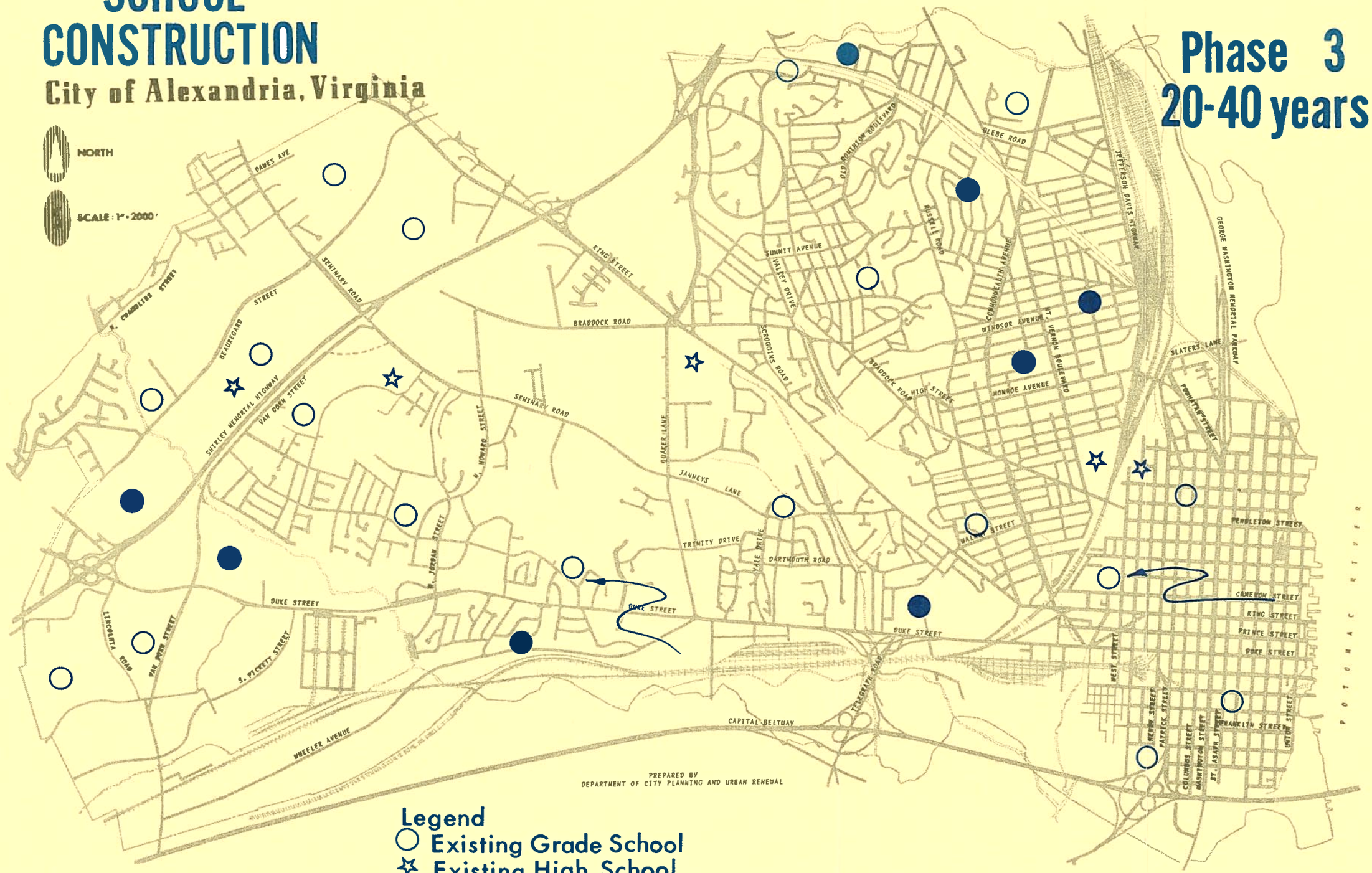
Phase 3
20-40 years



PREPARED BY
DEPARTMENT OF CITY PLANNING AND URBAN RENEWAL

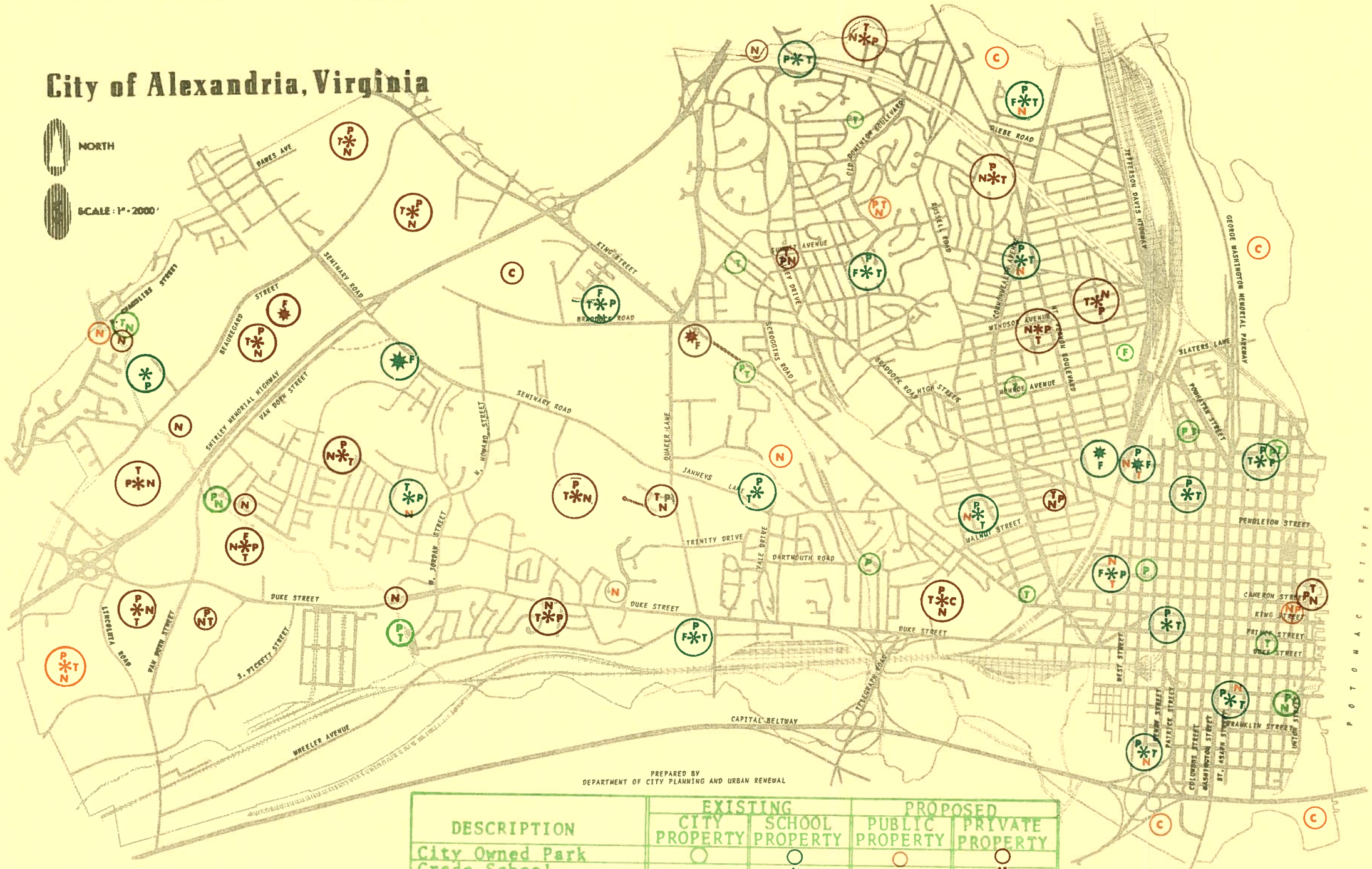
Legend
- ○ Existing Grade School
- ☆ Existing High School
- ● Proposed Grade School
- ★ Proposed High School

GENERALIZED PARK AND SCHOOL PLAN

City of Alexandria, Virginia

NORTH

SCALE: 1" = 2000'



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DESCRIPTION	EXISTING		PROPOSED	
	CITY PROPERTY	SCHOOL PROPERTY	PUBLIC PROPERTY	PRIVATE PROPERTY
City Owned Park	○	○	○	○
Grade School		*	*	*
High School		✸	✸	✸
Tot Lot	T	T	T	T
Neighborhood Park	N	N	N	N
Playground	P	P	P	P
Playfield	F	F	F	F
City Wide Park	C	C	C	C

LIBRARY FACILITIES

INTRODUCTION

Libraries are becoming increasingly important cultural facilities in this country with the advent of the shorter work week allowing more leisure time, increasing interest in self-education, increasing awareness of new fields of interest through the medium of television which can be more thoroughly examined mainly through contact with libraries. Also in the Washington Metropolitan Area, especially, where contact with the federal government is closest, many residents having a keen awareness of this country's status as it assumes a precarious position of tremendous importance in world affairs. This intellectual curiosity can be satisfied through the library. These points are made in the report, "Public Libraries Analysis", prepared by the staff of the Northern Virginia Regional Planning and Economic Development Commission, July, 1962.

As a means for examining existing library facilities in Alexandria and making recomendations thereto, the Northern Virginia Regional Planning and Economic Development Commission's report is used extensively as well as Alexandria Library annual reports.

BACKGROUND

Although the City of Alexandria has been served by a library since the 1790's, it was not until 1937 that such facilities became public. This year also marks the date that the present library building was erected at 717 Queen Street, by Robert S. Barrett in memory of Dr. Kate Waller Barrett on land leased to the City for 99 years by the Quakers for the nominal fee of one dollar. A bookstock of 5,535 volumes and 3,781 borrowers was reported in the public library's first annual reports. The United States Bureau of Census reported a total population for the City of Alexandria of 33,523 persons revealing a bookstock of 0.16 volumes per capita in 1940.

By 1946 as the population of the City grew to approximately 50,000 persons and additional books were added to the library's collection, plans were made for an expansion to the existing building, but it was not until 1953 that $155,000 was advanced for its construction and completion in 1954.

The 1955 population as reported in a United States special census was 83,000 persons. That same year the library reported 21,875 borrowers and a bookstock of 52,708 volumes or 0.64 books per capita. By 1960 the bookstock increased to 0.75 books per capita. During the past, even though the population increased at a rapid rate, the number of books contained in the Alexandria Public Library increased at an even more accelerated

rate although remaining far below any standards recommended by the American Library Association.

Beyond providing the Alexandria residents with reading material and study rooms, the library serves as a regular meeting place for numerous civic and social associations and boasts of public educational film entertainment, exhibits and story hours for children.

The library is truely an educational facility for all ages and should receive treatment in at least the same manner as does the city's public school system.

In 1961 the library gained the services of a bookmobile to extend the existing buildings reach to portions of the City far removed from the center of town. The bookmobile is available on Mondays at a location on Glebe Road just west of Mt. Vernon Avenue, on Tuesday afternoons at 628 N. Alfred Street, on Wednesdays in the Fairlington Shopping Center and on Fridays and Friday evenings in the Shirley-Duke Shopping Center. With a circulation of 5,330 volumes for the month of March, 1963, and 52,327 for the first year (February, 1962 - February 1963) the bookmobile system proves to be highly successful.

STANDARDS

Possibly the best standards established for evaluating library facilities are published by the following three sources: (1) The American Library Association, (2) The State of Virginia and, (3) The Northern Virginia Regional Planning and Economic Develop- Commission.

Publications

The American Library Association points out that a library system should be established to serve a minimum population of 100,000 persons. This recommendation is based upon research which revealed that a 100,000 capita minimum population would be required to support a reasonable system. If Alexandria had less than 100,000 persons, it might be recommended that Alexandria strongly consider joining a neighboring jurisdiction in a library program. However, since the population of Alexandria is in excess of 100,000 and is anticipated to arise beyond 160,000 by 1980, it will be possible for the City to continue its library program and provide a system which will be both convenient to the population and offer the variety of material necessary to satisfy the populace. The Alexandria Library Association recommends that a city first inventory its existing library stock collection and afterwards establish a program for adding tothis collection in the future on an annual basis. It suggests that a city of 100,000 should have a minimum of 100,000 volumes of currently useful printed material in its library collection and upon achieving this, it should add 4,000 to 5,000 separate titles annually, in addition to sufficient duplicated copies. It is further recommended that a reasonable system to serve this population should contain 300 to 400 periodical copies. The library system should contain a basic collection of 250 films with 25 separate titles added annually and a collection of 1,500 records with 300 new titles added each year.

TABLE XIV

DEFICIENCIES IN THE NUMBER OF LIBRARY VOLUMES
ALEXANDRIA, VIRGINIA

Measured by State of Virginia Standards

	STATE RECOMMENDATION		ACTUAL VOLUMES ON HAND		DEFICIENCY	
	Volumes	Vol. Per Capita*	Volumes	Vol. Per Capita*	Volumes	Vol. Per Capita*
March, 1963	175,000	1.75	70,000	0.70	105,000	1.05
1980	280,000	1.75	70,000	0.70	210,00	1.05

*State of Virginia Standards:

Population Served	Volumes Per Capita	(Applicability)
10,000 - 35,000	2.50 up to 70,000	(Falls Church; Loudoun Co.)
35,000 - 100,000	2.00 up to 175,000	(Prince Wm. Co.)
100,000 - 200,000	1.75 up to 300,000	(Arlington County, Alexandria)
200,000 - 1,000,000	1.50 up to 1,000,000	(Fairfax County)

The State of Virginia establishes a standard for communities which varies with community population. See Table above.

Based on the population as reported by the Planning Department for March, 1963, the Alexandria Library system is presently deficient approximately 105,000 volumes when measured to standards established by the State of Virginia. Also as a matter of importance, when considering the maximum population as projected to the year 1980, the City of Alexandria would ultimately require 280,000 volumes to adequately serve the City as determined by the State.

If free exchange continues within the Washington Metropolitan Area, it might be well to consider a ratio of 1.5 volumes per capita as a minimum standard as depicted in Table . If the population served by a system increases, the ratio of volumes per capita can decrease. The reason behind the sliding scale principle is based on the fact that regardless of the size of a jurisdiction, the demand for certain books may be similar requiring extensive duplications of these volumes.

The Northern Virginia Regional Planning and Economic Development Commission made an extensive survey of the various jurisdictions with which it is concerned indicating that the Northern Virginia area requires a larger number of volumes per capita than what might be considered normal throughout the country. This might well be attributed to the fact that the Northern Virginia area is so influenced by activities within Washington, D.C. and the keen awareness of its residents in world affairs especially those who become allied with decisions.

The Northern Virginia Regional Planning and Economic Development Commission recommends that the various jurisdictions in the Northern Virginia Area strongly consider establishing 3.5 volumes per capita as an objective.

Buildings--Their Location and Size

Having a proper number and variety of publications cannot benefit the communities under the library system's service unless they are readily accessible. It is less expensive to house many volumes in one building because of the lesser number of personnel required but the cost of maintaining a large collection is used unwisely if the residents of the community cannot easily obtain these volumes. On the other hand maintaining libraries within walking distances of the population would be too costly to imagine since Alexandria might then require one library for each neighborhood or 31 library buildings. Such close relationship to the population is required for school children and should be supplied by the local grade schools. Almost without exceptions library experts maintain that library buildings should be located within or adjacent to commercial centers which are visited at least weekly by its primary market. Each library should contain approximately 40,000 to 50,000 volumes with adequate space for research and offices. Libraries containing fewer volumes are not as attractive to the intellectual public. It should be pointed out that a central library facility should be maintained to cater to those requiring special reference. Such a facility

should be located within or adjacent to the jurisdiction's central business district.

EVALUATION OF EXISTING FACILITIES

When comparing the Alexandria library system to the three sets of standards previously discussed, the City of Alexandria remains below although it provides a central (but only) facility in a desirable location. It will be necessary in the near future for the library to expand in the following manner: (1) Increase its publication collection, (2) Construct additional library buildings in close proximity to high population densities and, 3) expand the existing library staff to satisfactorily maintain and administer the new facilities.

RECOMMENDATIONS

As is the case of most rapidly growing jurisdictions such as Alexandria, it is necessary to recommend a land acquisition and building program to provide a satisfactory library system. Unfortunately, when a municipality is becoming saturated with development as rapidly as Alexandria, it becomes necessary to acquire land in a shorter period of time than what might be considered desirable. This is true for other community facilities requiring land acquisition as well as libraries. If acquisition does not take place within the very near future, the City might very well be in the position of either selecting sites at far less than desirable locations or purchasing land and improvements in an effort to satisfy library needs of the community. In reviewing the standards discussed in this report, it would indicate that the City of Alexandria should provide 155,000 volumes for its residents by 1980 based on standards recommended by the American Library Association including building a base collection of 100,000 volumes of currently useful printed material and expanding 5,000 volumes annually, however, by 1980 the population of the City of Alexandria is anticipated to exceed 160,000 persons. Standards established by the State of Virginia would indicate that the City of Alexandria should have 280,000 volumes based on the anticipated 1980 population and standards recommended by the Northern Virginia Regional Planning and Economic Development Commission of 3.5 volumes per capita indicate a need of 560,000 volumes by the year 1980. Considering each standard the City of Alexandria has a long way to go to provide an adequate library system based on the 1980 population. It would be unreasonable to recommend at this time that the City provide 3.5 volumes per capita by the year 1980 when it has so much ground to cover to provide an adequate service in the other categories of community facilities as well. It is, therefore, recommended that the City acquire additional currently useful printed material which will bring the total bookstock to the 100,000 level as early as possible to provide a base system as recommended by the American Library Association. It is further recommended that the City use Virginia minimum standards of 1.75 volumes per

capita as an objective to shoot for by the year 1980 adding enough volumes per year which will meet the objective by that date never losing sight of obtaining 3.5 volumes per capita as the desirable objective.

In an effort to store these volumes at locations convenient to the public, it is recommended that the City acquire four additional sites at locations within or adjacent to major shopping centers. It is recommended that the four sites be purchased and one building constructed in the near future and that a building program be established which will spread the costs of constructing the three additional buildings over the 20 year period.

Construction of the first building should take place on a site in the vicinity of Seminary Road and North Beauregard Street as recommended by the Alexandria Head Librarian since it is anticipated that a regional shopping center will be constructed near this location. Such a site will also bring the printed material to the city's largest population densities both existing and anticipated.

Alexandria City Library

LIBRARY FACILITIES

City of Alexandria, Virginia

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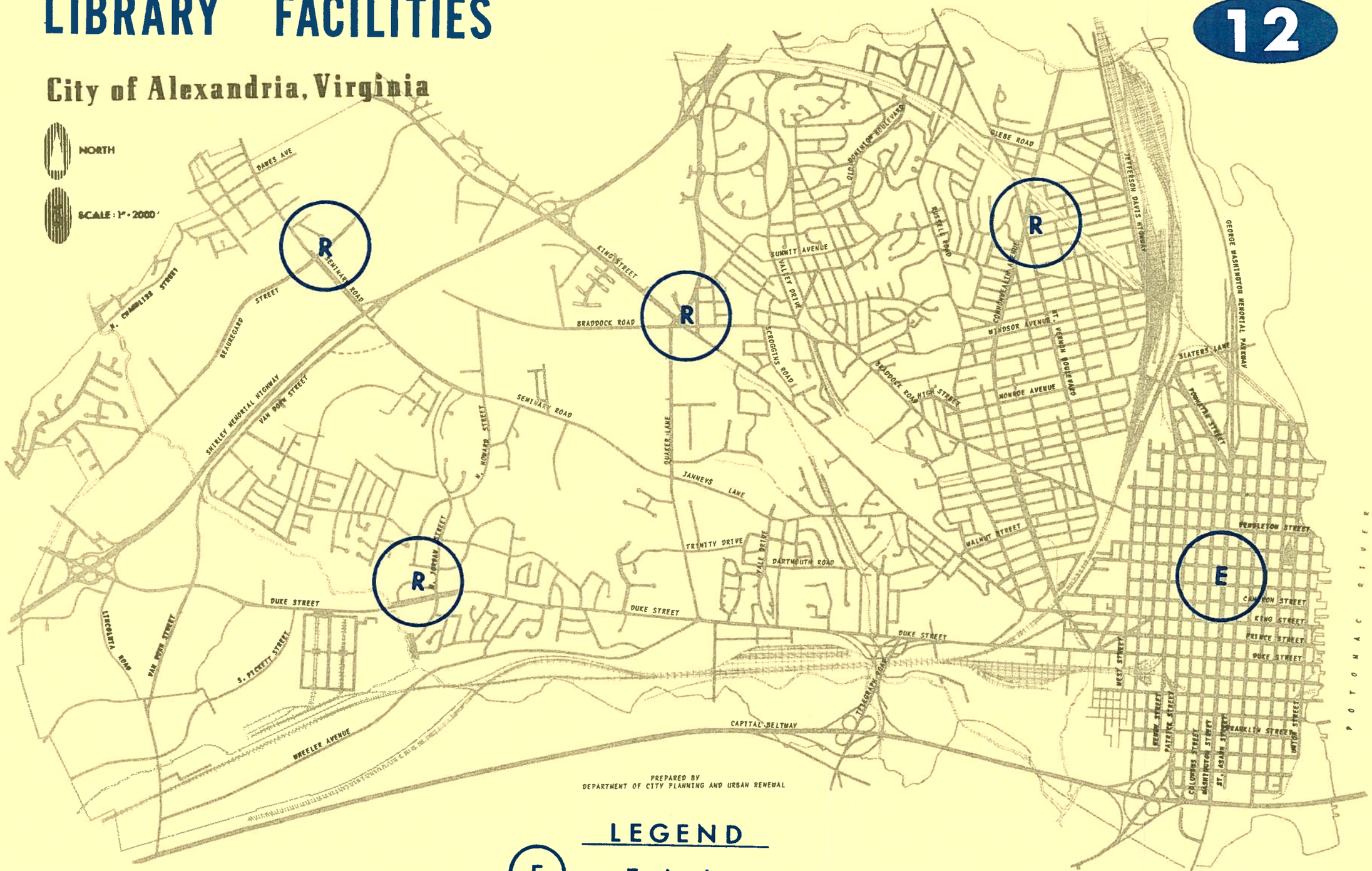

PREPARED BY
DEPARTMENT OF CITY PLANNING AND URBAN RENEWAL

LEGEND

E — Existing

R — Recommended

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HEALTH FACILITIES

INTRODUCTION

The following analysis of hospital facilities is based on a Medical Facilities Survey and Construction Plan conducted by the Bureau of Medical and Nursing Facilities Services, State Department of Health, Commonwealth of Virginia, 1963.

The State of Virginia established the medical facilities survey and construction program under the authority of legislation during the special session of the General Assembly in 1947. This legislation has enabled the State of Virginia to participate in federal funds made available through the Hill-Burton Act, 1946, and subsequent amendments.

The survey indicates areas within the State of Virginia urgently in need of hospital and related hospital facilities. The State was divided into 45 districts for this purpose, Alexandria and Arlington comprising one district. See general hospital areas, map 14, page 80.

Recommendations regarding hospital and related facilities are based, for the most, on standards contained in the Virginia Medical Facilities and Construction Plan designed by the highly competent Bureau of Medical and Nursing Facilities Services, State Department of Health in addition to material compiled from the following sources:

1. Metropolitan Washington Health Facilities Planning Council, Inc.

2. Research Report #4 - Residents of patients admitted to hospitals in the Washington Metropolitan Area for the week of February 25, 1962, to March 3, 1962, inclusive.

3. Alexandria Department of Public Health.

4. Alexandria Department of Public Welfare.

5. Local hospitals and nursing homes.

STANDARDS

The following standards are employed by the Bureau of Medical and Nursing Facilities Services to determine the adequacy of such facilities within the various areas of Virginia.

General Hospitals

Establishing an estimate of area bed needs required in an analysis of hospital usage, the following factors were used:

1) Bed requirements based on a comparison of reported occupancy with assumed normal occupancy for each type of area.

2) Bed requirements based on comparison of reported admissions with assumed normal admission per bed.

3) Population of area.

Chronic Disease Facilities

One bed per thousand persons.

Nursing Homes

Two beds per thousand persons.

Diagnostic and Treatment Centers

Population of Area	Ratio
Less than 20,000	1:20,000
20,000 - 99,999	1:30,000
100,000 - 249,999	1:40,000
250,000 and over	1:50,000

Rehabilitation Centers

Standards are established in accordance with state policy.

EXISTING FACILITIES & REQUIREMENTS

It is extremely difficult to estimate requirements for all facilities with any certainty as a result of the many variables present. Fluctuation in hospitalization insurance participation affects hospital utilization dramatically as do residential population trends, trends regarding military personnel, medical specialists office location, actions by the U. S. Congress in this field, and hospital construction in neighboring jurisdictions.

General Hospitals

The City of Alexandria is served by three hospitals. The New Alexandria Hospital contains approximately 167 beds, the Old Alexandria Hospital contains approximately 130 beds, and Circle Terrace Hospital contains approximately 70 beds. The County of Arlington is served by three hospitals: 1) Arlington Hospital, 2) National Orthopedic Hospital, and 3) Northern Virginia Doctor's Hospital which together contain approximately 453 beds.

The Medical Facilities Survey and Construction Plan points out that the Alexandria-Arlington area has 738 acceptable hospital beds and the estimated total bed needs based on a population of 251,500 persons is 1,193. The area is, therefore, meeting 70% of its hospital needs although it has a normal percent bed occupancy of 75%. The analysis by the Bureau places the Alexandria-Arlington area fifth on the priority list for Hill-Burton hospital funds.

The 1960 U.S. Census revealed Alexandria to contain 91,023 persons and Arlington County 163,401 persons or a total of 254,424. Arlington estimates her population to have reached 175,000 persons during December 1962, and during that same month, the City of Alexandria contained approximately 99,000 persons. Totaled together, Alexandria and Arlington contained 274,000 persons as of December 1962. In projecting the required number of beds recommended by the Bureau, it would reveal that the Alexandria-Arlington area as of December 1962, required 1,300 beds based on standards contained in the State survey.

Arlington County estimates that her population will be approximately 205,000 persons by 1980. The projected population for the City of Alexandria for that same year is 160,600 persons. Again using the same projection of number of beds per person recommended by the State Survey, the Alexandria-Arlington area as of 1980 will require approximately 1,734 beds. Simply projecting the existing facilities to the year 1980 indicates that the Alexandria-Arlington area will require 1,073 beds or an additional 335 beds if the Alexandria-Arlington area is to maintain the same standards as it did during the time of the State Survey.

It is interesting to note that during a survey conducted during the week of February 25, 1962, to March 3, 1962, inclusive, a total of 608 Alexandria-Arlington area residents were hospitalized, and although 44% were hospitalized outside of the area, the Alexandria-Arlington area hospitals contained 605 patients indicating that during that week there was a fair exchange of patients between the Alexandria-Arlington area and the remaining Metropolitan area. Additional surveys will be required to establish if this is the norm. It is also interesting to note that during this particular week the Alexandria-Arlington hospital beds were 82% occupied. See following Tables XV and XVI.

TABLE XV

Total Alexandria-Arlington Residents Hospitalized

Jurisdiction Hospitalized	Number of Patients	Percent of Total
Alexandria-Arlington Area	338	56
District of Columbis	230	38
Other Jurisdictions in Metropolitan Area	40	6
Total Hospitalized	608	100

Source: Research Report #4 - Residences of patients admitted to hospitals in the Washington Metropolitan Area for the week of February 25, 1962, to March 3, 1962, inclusive.

Supplied by: Metropolitan Washington Health Facilities Planning Council, Inc.

TABLE XVI

Total Patients Hospitalized in Alexandria-Arlington Area

Jurisdiction of Residence	Number of Patients	Percent of Total
Alexandria-Arlington Area	338	56
District of Columbia	6	1
State of Maryland	2	-
Fairfax County	212	35
Falls Church	20	3
Other Jurisdictions	27	5
Total Hospitalized	605	100

Source: Same as Table XV

Nursing Homes

The City of Alexandria is served by The Hermitage containing 124 beds, more regionally orientated than City, the Fort Ward Home containing 58 beds, and the Anne Lee Memorial Home containing 20 beds. A site plan was approved in May, 1963, for a nursing and convalescent home to be located at 2729 King Street and proposed to contain 114 beds. (Not shown on map) Based on standards contained in the Bureau's report of two beds per 1,000 inhabitants, the City of Alexandria should provide and is providing approximately 200 nursing home beds based on the December, 1962 projected population, and the City will ultimately require approximately 320 nursing home beds or approximately 120 additional beds to adequately serve its population based on the 1980 projected population.

Diagnostic and Treatment Centers

The City of Alexandria contains two diagnostic and treatment centers, each of which provides a limited service in one form or another. The Alexandria Community Health Center located on Columbus Street between Duke and Prince Streets is sponsored by the United Givers Fund and provides a wide range of service to the medically indigent. The Health Department is open to all who require its services and is qualified to diagnose and provide limited treatment in the fields of chest and venereal diseases. In addition, the Health Department provides an immunization service to the public.

According to standards contained in the Virginia Medical

Facilities Survey and Construction Plan, the City of Alexandria, as part of the Alexandria-Arlington area, is providing the proper number of diagnostic and treatment centers. The increase in population estimated for the year 1980 will require future construction of at least one additional center, however.

Rehabilitation Centers

As explained in the Virginia Medical Facilities Survey and Construction Plan, a rehabilitation center is a facility providing service which is operated for the purpose of assisting in the rehabilitation of disabled persons through an integrated program of medical, psychological, social and vocational services.

The Medical Facilities Survey and Construction Plan does not expound any simple standard for evaluating quantity of rehabilitation centers. Because of the highly specialized service provided by such facilities and the expense of maintaining such facilities, it is not always possible to orientate such centers to communities or even cities. The State of Virginia regulates to a high degree locations for these centers. Recognizing the lack of these facilities in the Alexandria-Arlington area, the State recommends construction of a rehabilitation center to serve this area.

Chronic Disease Facilities

While diagnosis of chronic Diseases are conducted by private practitioners as well as the Health Department and Alexandria Community Health Center, short term bed patient care is provided by the general hospitals in Alexandria. Requirements established by the Virginia Medical Facilities Survey and Construction Plan indicate that Alexandria should be providing approximately 100 beds for this purpose and based on the projected population for the year 1980, the City will ultimately require 160 beds.

RECOMMENDATIONS

A rehabilitation center is a regional facility and the State recommends construction of such a facility in the Alexandria-Arlington area. The State also has established that Alexandria and Arlington are lacking in general hospital facilities placing the Alexandria-Arlington area fifth on the priority list for Hill-Burton funds. It is, therefore, recommended that a site be secured somewhere in the Alexandria-Arlington area centrally located to both communities.

The site should be acquired in the near future in order to avoid the possibility of second choice, less than adequate site selection. Prior to construction, it is recommended that Arlington and Alexandria request Hill-Burton funds and arrange community financing on a basis acceptable to both the residents of Arlington and Alexandria. It is also recommended that the general hospital contain chronic disease facilities which will bring the Alexandria-Arlington area up to standards recommended by the Virginia Medical Facilities Survey and Construction Plan.

Although the City of Alex-

andria is providing an adequate number of nursing home beds based on Virginia standards and the existing population, an additional 120 beds will be required by 1980 to keep the same standard as today. It should also be pointed out that many of the nursing home beds supplied are open to persons outside the City of Alexandria. Both the Alexandria Health Department and the Welfare Department recognize the fact that nursing home service is expensive to those under its care. Persons of modest means are seldom in a position to afford nursing home care as now provided in the Alexandria-Arlington area. It is, therefore, recommended that property be acquired in the near future for the construction of a nursing home facility to be available to those persons who can prove a necessity for such service and who could not otherwise afford such care. The facility should be designed to accommodate 120 beds thus bringing Alexandria up to State recommended standards in 1980. The Alexandria Director of Health agrees that the extensive demand and limited supply of nursing home facilities for the indigent and persons of moderate income (often forgotten), requires construction of such facility much before 1980, however.

It is further recommended that an additional diagnostic and treatment center be constructed somewhere in the western portion of the City to contain equipment to furnish a wide range of such service.

The Planning Department is awaiting a report undertaken by the Metropolitan Washington Health Facilities Planning Council, Inc. which investigates health facility problems in the Washington Metropolitan Area. The Metropolitan Washington Health Facilities Planning Council estimates that the Board of Directors will release this report shortly after April 17, 1963. It is the intention of the Metropolitan Washington Health Facilities Planning Council to be available as an advisor on all matters pertaining to health facilities. It should be noted that they are in contact with the Virginia State Department of Health and it is hoped that an agreement can be made where the Northern Virginia area will be under the advisement of the Metropolitan Washington Health Facilities Planning Council or that the state laws can be amended to bring about a uniformity of policy throughout the Washington Metropolitan area.

The New Alexandria Hospital

GENERAL HOSPITAL AREAS

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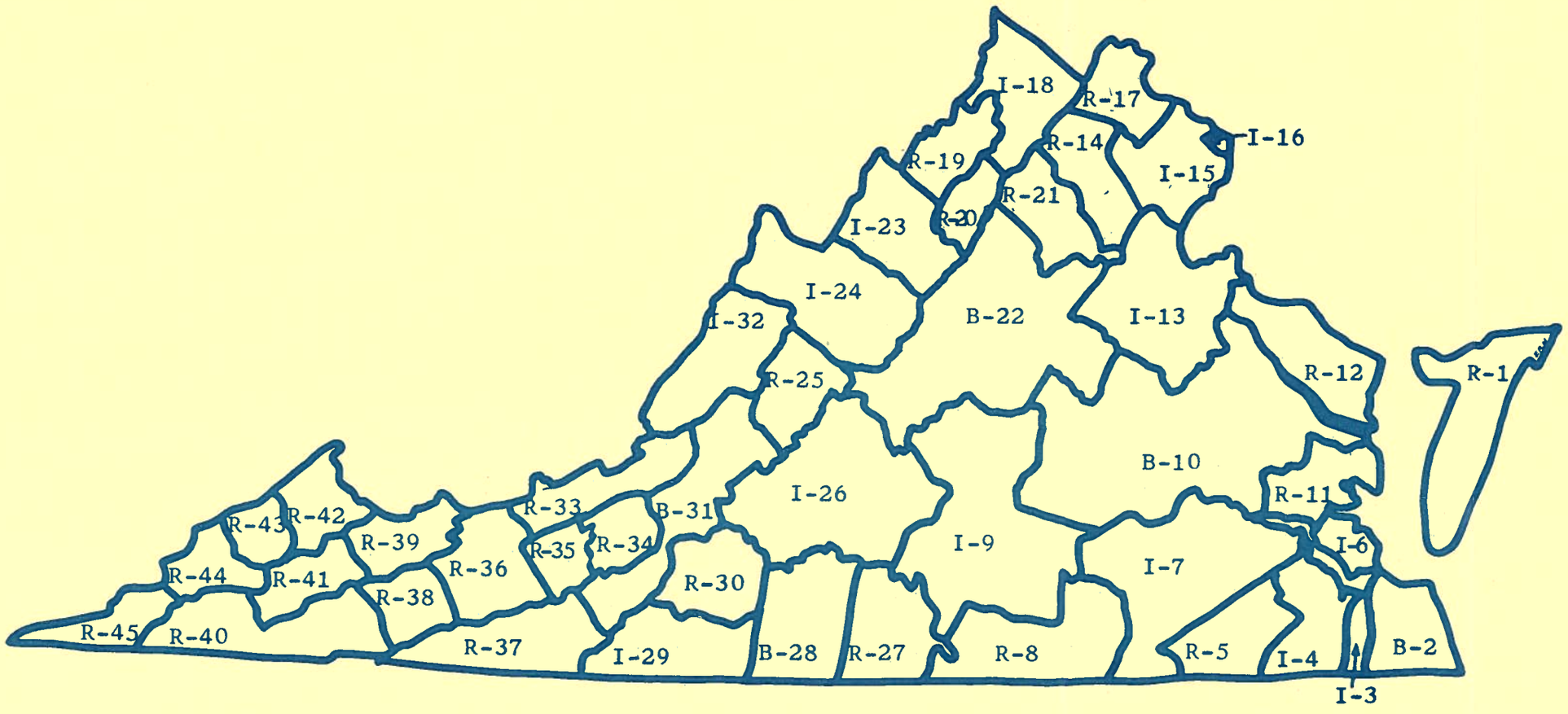

Medical and Nursing Facilities Services, 1961

HEALTH FACILITIES

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City of Alexandria, Virginia

PREPARED BY
DEPARTMENT OF CITY PLANNING AND URBAN RENEWAL

LEGEND

- ● Existing Nursing Home
- □ " Diagnostic - Treatment
- ▲ " General Hospital

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P O L I C E

Present Police Protection

Alexandria, in 1960, had a police force of 131 men or 1.44 men per thousand population. The number of police per square mile of jurisdiction amounts to 8.3. In 1962 the City had a police force of 136 men or 1.40 per thousand population. The number of police per square mile of jurisdiction amounts to 8.7.

This points to the fact that while manpower per square mile has a tendency to increase, manpower per thousand population is on the decrease. In other words the City is not providing police protection at a pace parallel to its growth. It is almost out of the question, cost-wide, to compete in this fashion.

The Alexandria Police Department has tripled its strength since 1940, as Table indicates, while its population has experienced a similar increase or about 30,000 in each decade, however, the number of charges (or the combined number of arrests and summonses), has multiplied by three since 1950 and by five since 1940. These are just two very simple criteria with which to try to judge a very complicated subject.

The department operates with improved methods and equipment every year. At present a new headquarters building has centralized the divisions of highway patrol, foot patrol, and crime prevention and provided new laboratories for detective work and an improved communication center. Changing methods include the addition of deputized school-crossing patrolmen, improvements in fingerprinting and photography and the polygraph (or lie detector), and the addition of police dogs.

ALEXANDRIA'S MANPOWER AND NUMBER OF CHARGES PER THOUSAND POPULATION
1940 - 1962

TABLE XVII

YEAR	POPULATION	POLICE PER 1,000 POP.	POLICEMEN	NO. OF *CHARGES	CHARGES PER 1,000 POP.
1940	33,500	1.16	39	7,362	219.7
1950	62,000	1.37	85	12,407	200.0
1960	91,000	1.44	131	37,689	414.2
1962	100,000	1.40	136	---	---

*Charges include the number arrested and the number summoned.

In spite of these valuable improvements, the number and seriousness of cases is increasing.

Although salaries are far ahead of state averages, recruitment lags because of rigid physical and mental examinations, competition with the armed forces and industry, and because police work, especially at night, is increasingly unpopular with their families.

Four forms of training are used in Alexandria: recruit training, the roll call briefing of new laws and policies for the entire police force at the outset of the day, the cadet program training on the job in duties of crime photography, radio intercom, record taking, etc., and weapon training for each man each year. The Central Police Training Program at Richmond, the University of Maryland Traffic Institute, the F.B.I. National Academy, the American University, and several other institutions outside the region are further sources of advanced education and training for the Alexandria police.

PRESENT AND FUTURE NEEDS

No actual "standard" is possible in the consideration of police strength. Alexandria is subject to different influences through the characteristics of its population, and through its susceptibility to invasion from outside influences. However, for the purposes of this report, the 1960 Average Number of Police Employees Per Thousand Inhabitants, taken from the Uniform Crime Report of 1960, isused as a standard in Table XVIII.

The Uniform Crime Report for 1960, published by the Federal Bureau of Investigation tabulates the number of police employees per thousand population for cities of different size groups throughout the nation. The national average of 1.9 employees per thousand is broken down in population groups as shown.

Two important facts are evident from this tabulation. First, the average number of employees per thousand population increases consistently as the population segment becomes larger. Second, the range in the figures for any population segment is very wide, suggesting that the needs for protection and the effectiveness of the protection provided may both vary considerably.

The City of Alexandria's staff is within 12 percent of the national average, and would appear to require the addition of eighteen more men to serve immediate needs. Providing an adequate police force to serve the projected 1980 population will require adding 144 men to meet recommendations established in the Uniform Crime Report of the F.B.I.

The Police Headquarters constructed early in 1959 and located at 400 North Pitt Street and City Jail behind the Police Headquarters will likely be adequate to serve the projected needs within the existing city limits. Additional stations are not forseen to serve future population unless annexation takes place. The Police Department reports that there is a critical need for additional space for storage of officers' equipment, stationery forms and records, evidence and motorcycles. In addition the department requires an indoor pistol range and a two acre tract for outdoor training.

TABLE XVIII

POLICE EMPLOYEES PER THOUSAND POPULATION*
DECEMBER, 1960
(National Average and Range by Population Groups)
Table reflects all full time employees including civilian clerks, cadets, etc.

POPULATION GROUP	POLICE EMPLOYEES PER 1,000 POP.
Over 250,000	Average: 2.5 Range: 1.1 to 4.3
100,000 to 250,000	Average: 1.7 Range: 1.0 to 2.8
50,000 to 100,000	Average: 1.6 Range: 0.6 to 4.3
25,000 to 50,000	Average: 1.4 Range: 0.4 to 3.4
10,000 to 25,000	Average: 1.4 Range: 0.3 to 5.0
Less than 10,000	Average: 1.4 Range: 0.2 to 6.0
NATIONAL	Average: 1.9 Range: 0.2 to 6.0

*Source: United States Department of Justice, Uniform Crime Report for the United States, 1960, (Washington: Government Printing Office, 1960).

Note: A new figure for counties is being prepared on the basis of criteria from twenty selected counties:
Probable Average: 1.2 per thousand population
Probable Range: 0.2 to 2.9 per thousand population

TABLE XIX

ESTIMATED NEED OF POLICE DEPARTMENT EMPLOYEES
1960, 1962, 1980-2000
CITY OF ALEXANDRIA, VIRGINIA

Date	Population	Present Staff	Standard Staff	To Be Added
1960	91,023	131	145	14
1962	96,362	136	154	18
1980-2000	165,000	*136	280	144

*1962 Staff

The projections on the preceding page are based on national averages of a police force of 1.6 per 1,000 population for cities 50,000 to 100,000 and 1.7 per 1,000 for cities 100,000 to 250,000.

In order to prepare for this increase, and as one of the most effective means of improving the quality of the police force, training facilities are of primary importance to the city and region. At present several types of in-service training are given in each jurisdiction.

A Regional Police Academy would have many advantages. Lower costs would enable more jurisdictions to participate to a greater extent. Higher standards of teaching would be possible with courses available to hundreds of men who would not otherwise be able to take them. Screening of police personnel, physically, mentally and psychologically, would become more equitable.

Finally, if the academic level is raised, it could be a factor in reducing the need for police personnel per capita, as a climate of confidence is achieved and a saturation point of police protection and assistance is approached.

Clearly a great deal of work is necessary before this stage is reached. We suggest that the regional aspects of police protection are of primary importance to each individual jurisdiction. We recommend that preparations be begun as soon as possible to take up the two major recommendations of this report concerning the Regional Police Academy and the Professional Police Administration Report.

In the future, where and if annexation by the City takes place, no doubt the need for a sub-station will be required to serve the new area. Of course, this will depend on the area involved.

Future changes in Alexandria and the Northern Virginia Area will be great and extensive preparation must be made to meet these needs. Although the strength of the police department is measured in terms of manpower, their effectiveness also depends on items that are less susceptible to measurement.

CONCLUSIONS

Legislative and Judiciary Uniformity

"In some phases of police operation, it would be highly advantageous to have regional uniform practices and enforcement ranging from Highway Control to the inconsistent licensing of guns, bicycles, and pets throughout the metropolitan area."

Central Police Records

The centralization of police records on a region basis would eliminate duplication of effort and make one source of information accessible to other departments outside the Metropolitan Area as well as within it.

Efficiency and Training

A greater efficiency could be obtained through a Regional Police Academy staffed with well trained men.

Communications

"At present the police depart-

ments of the region, the Park Police, and the State Police monitor each others broadcasts and use their trunk lines. A closed teletype system has been prepared for the District of Columbia, Montgomery and Prince Georges Counties in Maryland. and Alexandria, Arlington and Fairfax Counties in Virginia. This forms an instantaneous contact of permanently recorded tape for the entire metropolitan area. It has been waiting for Congressional approval of funds for the District of Columbia."

The newest proposal for the police departments of this area, presently in the discussion stages, is a common radio frequency for the region. The new proposal is for each community to have a transmitter and receiver on a common frequency with which instant communication may be obtained, without the necessity of using their normal radio facilities.

A L E X A N D R I A F I R E D E P A R T M E N T

HISTORY

In 1774 George Washington organized the Friendship Veteran Fire Engine Company, one of America's oldest and most historical associations.

This small company has grown into a fire department with six companies, each being staffed by paid personnel with some volunteer assistance. The inter-jurisdictional cooperation that is enjoyed by Alexandria, Arlington, Fairfax County and the District of Columbia is facilitated by the use of standard interchangeable equipment.

TRAINING

In 1962 a Training Division was organized within the department, which is charged with the primary responsibility of planning, organizing and supervising programs of training for all personnel. The division is concerned with physical training, officer schools, special courses, basic training, recruiting field exercises and the preparation of manuals of instruction.

COMMUNICATIONS

The fire department requires uninterrupted communication, therefore, the present facility was designed to include the following features: emergency generator operated by either bottled or natural gas to protect power failures, semi-bomb proof construction, metal fire doors and a self-contained ventilating system.

The interior equipment was designed to provide an "arms reach" operation and features a "Type "A" municipal fire alarm system installed in the high value areas of the City serving, at present, 230 fire boxes and 6 fire stations. This system is capable of serving a potential 430 fire boxes and 16 fire stations. A commercial telephone system with PBX Control provides direct lines to all fire stations, City Hall, department offices, Police Department and certain federal government installations. The radio network includes monitoring equipment for communicating with neighboring Fairfax and Arlington County Fire Departments, Prince Georges County Fire Department, Alexandria Police,

Woodrow Wilson Bridge Control and the Eastern Civil Defense Control Point. The radio system includes three way communication for all stations and mobile units and a selective calling system for alerting fire stations by radio signals.

There are facilities which provide for receiving alarms from systems protecting private buildings and industries throughout the City. These systems report to the commercially operated central stations and are then relayed over wire circuits to Fire Alarm Headquarters.

MAINTENANCE

Maintenance is recognized by the fire service authorities as an important factor in the overall strategy of fire protection. The Alexandria Fire Department shop is equipped with modern machinery and tools for efficient operation. The personnel of this division are charged with the strict preventive maintenance schedule checkup.

The operations of the maintenance division are designed to provide the Alexandria Fire Department with proper maintenance of all apparatus. In addition, emergency repair service is maintained twenty-four hours per day as well as on the fire scene.

All plans and specifications for automotive equipment are written by the Superintendent of the Maintenance Division and forwarded to the Chief of the Department for review and presentation to the City Manager.

Preventive maintenance is preformed continuously on hydrants, to insure against any unnecessary delay during emergency operations.

To meet the recommendations of the National Board of Fire Underwriters, fire alarm boxes are tested every sixty days.

FIRE PREVENTION

The Alexandria Fire Department extends its fire prevention activities to a year round program of inspections. Special emphasis is made on the inspection of homes as a proven method of decreasing the number of dwelling-house fires. It should be pointed out that this is not required by law and the inspection is made on the basis of courtesy. A full company is assigned to inspection duty with radio equipped apparatus that can readily summon members performing the inspection by the driver assigned.

RESCUE SQUAD

The Alexandria Fire Department Rescue Squad was organized some 33 years ago. It operates throughout the City rendering aid to firemen and to the people of the City needing oxygen theropy and physical rescue.

The Rescue Squad is equipped with three Cadillac ambulances and one rescue squad wagon fully equipped. One ambulance is maintained in reserve and rotated on a monthly basis. Each piece of apparatus is equipped with modern and up-to-day equipment.

The Rescue Squad and fire fighting teams work about 63

hours a week. The average distribution of men to the six companies is seven at all times. This appears to be adequate for each company though it does not allow for sick and vacation leave and school and conference attendance. The National Board of Fire Underwriters' designation of "moderately undermanned" applies to the Fire Department in Alexandria and applies therefore, not to the size of the companies, but to the area because there are not enough companies per thousand population.

PRESENT NEEDS

In the Fire Department itself, the essential measure of adequacy in Alexandria at present is manpower. Other measures except for equipment are secondary. The International Association of Firefighters has provided a standard of approximately 2.4 men per thousand population.

As can be noted in Table XX, Alexandria is below the standard provided by the I.A.F. but over a period of years is showing an effort to meet such a standard.

With the expected growth coming within the next two to ten years, it will be hard to obtain the standard as set forth or even maintain the existing ratio found in 1962.

In 1962 the manpower for Alexandria is seen to be 88 men below standard and the City will need a total of 400 men by the period 1980-2000 to adequately serve the projected population in the manner prescribed by the I.A.F.

TABLE XX

Fire Department Data
1940-1950-1960-1962
Alexandria, Virginia

Year	Companies	Company (coverage acres)	Men*	Man/1000 Population	Equipment (Pieces)
1940	4	2,496	18 + V	.54	8
1950	5	1,997	42 + V	.68	15
1960	6	1,664	140 + V	1.54	18
1962	6	1,664	143 + V	1.48	27 (Includes 3 Ambulances)

* V beside the number indicates volunteer assistance.

TABLE XXI

1962 Population	1962 Manpower	Manpower Per IAF Standard	Deficiency Per IAF Standard
96,320	143	231	88

RECOMMENDATIONS

1. At present, negotiations are being conducted to provide for a new site for Station #7 as recommended by the National Board of Fire Underwriters and it is anticipated that the station will be in operation sometime this year.

2. To adequately serve the future population, it is recommended that land be obtained in the vicinity of Quaker Land and Duke Street for construction of Station #8 as suggested by the National Board of Fire Underwriters.

3. In recent years, the Fire Department has been following a policy of constructing more than adequate size fire stations to accommodate future expansion at reasonable cost. It is recommended that this policy be continued in the construction of Station #7 and #8. It should be pointed out that the Northern Virginia Regional Planning and Economic Development Commission recommended that Alexandria contain 17 fire companies to serve the projected population. At least 14 fire companies can be housed in the eight fire stations and at the same time comply with time-distance tables of the National Board of Fire Underwriters.

4. The National Board of Fire Underwriters also recommend that Engine Company No. 6 be complimented with a Ladder Company which should be given some consideration since high-rise development is taking place near their facility.

5. That the City Fire Department participate in establishing a Regional Training Academy in order to maximize in-service training efforts with advanced techniques and to minimize expense and inconvenience of attending schools beyond the region.

6. That a Regional Fire Protection Board, consisting of at least the Fire Chiefs in the Region should be established immediately to begin working out the details of the above recommendation.

7. That sufficient men be alloted to the department to provide at least five men on duty at all times with each engine and ladder company.

8. That the building code be amended to include those structural features necessary to restrict the spread of fire. It is recommended that the National Board of Fire Underwriters, National Building Code be used as a guide in framing these amendments.

9. That an additional ladder company be established with Engine Company No. 6.

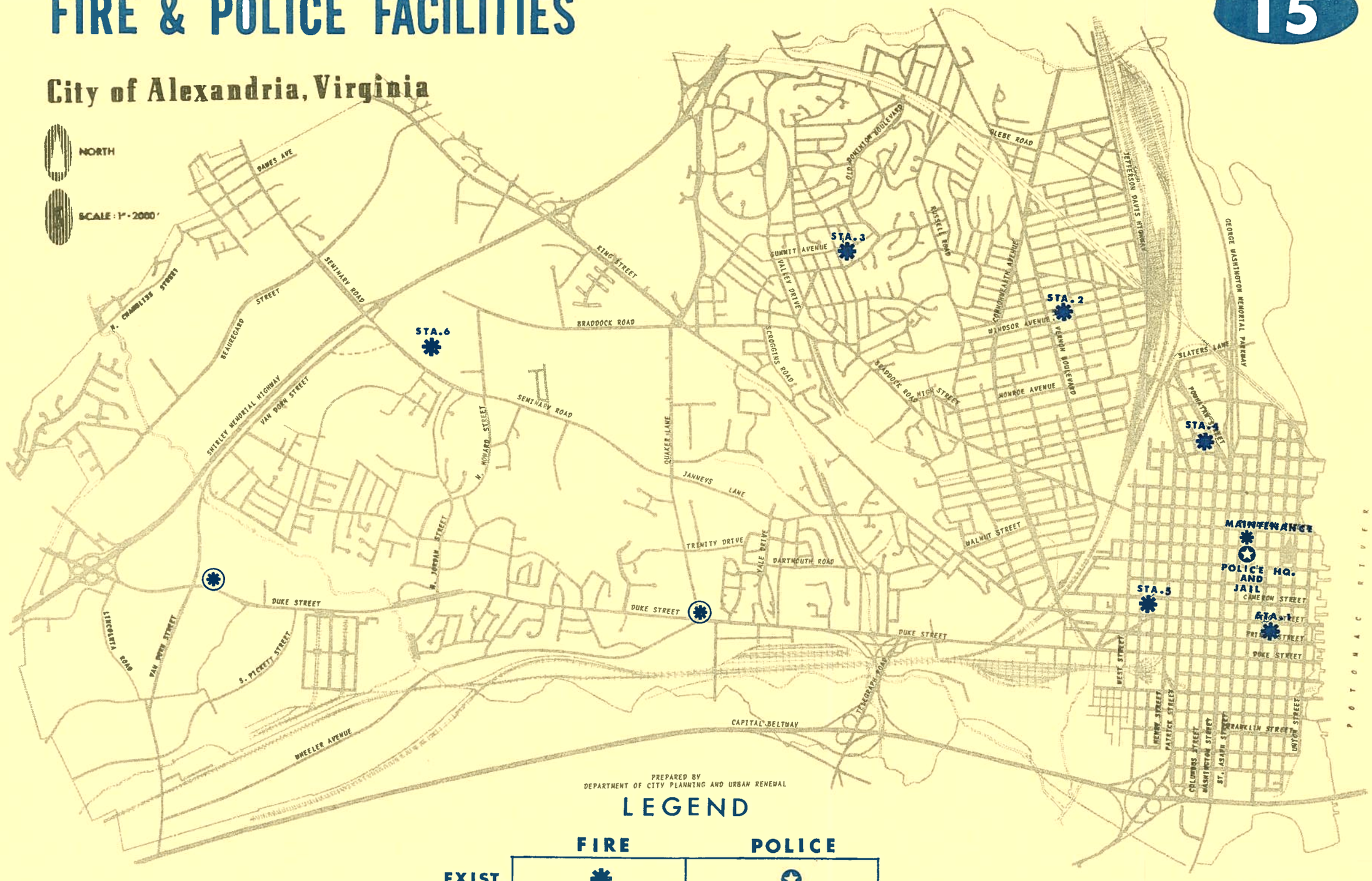
10. That owners of defectively-constructed buildings which involve serious life hazards or are so located as to form conflagration breeders be required to protect floor, fire wall and exposed window openings.

11. That approved automatic sprinkler equipment be required in all basements exceeding 2,500 square feet in areas used for storage or for mercantile purposed and in all buildings which by reason of their size, construction or occupancy involve serious life hazard or might act as conflagration breeders.

FIRE & POLICE FACILITIES

15

City of Alexandria, Virginia



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LEGEND

	FIRE	POLICE
EXIST.	✱	✪
PROP.	✱	

90

TRANSPORTATION

The Northern Virginia Region is a part of the greater complys of Metropolitan Washington. Its future development cannot be separated from the development of the Greater Metropolitan Washington, yet it is a separate and distinct entity as one of the largest urbanized areas of the Commonwealth of Virginia. Its future orderly development will depend to a great degree upon the willingness of state, city, and county officials to cooperate in the solution of problems, which by their very nature cross jurisdictional lines. The motor vehicle, by its very mobility, does not recognize the existence of jurisdictional boundaries. The problems created by the necessity for movement of people and the affects on the development of land by the creation of arteries for such people movement, must be recognized in their true sense as being regional, state and interstate problems.

Circulation and Its Function

Circulation provides access not only for residents but for all those who serve the development area. Physically the pattern of circulation, linking residential structures to each other, residences to neighborhood community facilities and the neighborhood to centers of business and employment, results in the definition of land use areas of limited shapes and sizes because streets act as boundaries and barriers.

Any design of a circulation system must begin with certain considerations, which are:

a) Where is access required?

b) Who are the users?

c) What are the methods of circulation?

d) What is the effect of the location of streets and walks on the desired land use pattern and the arrangements of structures?

The circulation system elements may be classified as:

a) Type of Use

1. For residents in all daily activities.
2. For deliveries and collections; including fuel, furniture moving, mail and garbage.
3. For protection services.
4. For maintenance and repair. (utilities, etc.)

b) Means of Circulation

1. Pedestrian
2. Automobile, truck and motorcycle.
3. Public Transit
4. Other (bicycle, etc.)

c) Routes of Circulation

1. Access from the outside to the neighborhood.

2. Access to dwellings.

3. Access to neighborhood community facilities.

d) Mode of Circulation

1. Streets

2. Walks

3. Driveways (to garages, parking areas, etc.)

4. Parking Areas.

Convenience of access for service vehicle may determine the availability of the service. For example, if access requirements for garbage collection and fire protection are not met, inadequacy of the circulation system contributes to potential spread of contagious disease and fire hazard.

Convenient access, especially to stores and public transportation, is necessary to avoid fatigue and safe access is particularly important for schools and playgrounds.

Allocation of needless area to streets may cause crowding of residences with inadequate interior daylight and ventilation. It may cause scanty or badly located play areas which not only inhibit recreation but create an additional accident hazard, as children are forced to play in streets for lack of other suitable play spaces.

Specific standards for circulation correctly emphasize safe and convenient access and maximum land utilization. Well designed walks and streets are perhaps the most economical and effective method of increasing amenity of the neighborhood.

Relationship to Traffic Outside the Neighborhood

The traffic circulation system of a single neighborhood cannot be considered as an isolated phenomenon. The volume of traffic, the usability of land, the convenience of access are all affected by the city and metropolitan highway system.

Subdivision regulations and the site plan ordinance permit control of the street layouts by the Planning Commission.

The most important element of a good neighborhood is a livable environment. Protection from heavy traffic is a factor in obtaining a livable neighborhood.

When the proposed Transportation Plan for the Northern Virginia Region is completed, the information received should be channeled to obtain on a map and in text, the following basic principles of neighborhood protection which can be carried out by subdivision regulations and the Site Plan Ordinance:

1. Adequate intersection capacity on the boundary thoroughfare to prevent any diversion of through traffic onto local residential streets because of peak hour congestion and delay at intersection on boundary thoroughfare.

2. Adequate buffering against traffic noise of residences located along boundary thoroughfares.

3. No through traffic within the neighborhood.

4. All foreign traffic generators, that is, destinations for non-residential traffic originating outside the neighborhood, to be located on and served by boundary streets only, and to be buffered from adjoining residences.

5. Reservation of sufficient additional right-of-way along boundary streets to later permit widening to carry future increase in through traffic, to avoid any future cutting of a new road.

6. All local traffic generators with a greater use intensity than a group of row houses, and lying within the neighborhood, to be located on and serviced exclusively by a collector street rather than a local residential street.

Classification of Street Types

Directness of access, increased speed of through travel, reduction of accident hazards and elimination of unnecessary traffic from the neighborhood should be fostered by a clearly articulated street pattern. This should be composed of various types of streets, each designed for the character and volume of its traffic.

Articulation of the Street System

There should be no through traffic within a neighborhood and no major traffic street should cross the neighborhood.

To discourage through traffic within the neighborhood, streets should be so laid out that no streets within the neighborhood can be used as a short cut between two points outside it. Similarly, residences should be served by roads the layout of which does not invite neighborhood traffic other than that bound to adjacent dwellings. This may be accomplished by loop or dead-end streets. A new system for the existing grid pattern of streets has been applied in many cities. The system is designed to break up existing grid pattern movements, thereby accomplishing the protection to a neighborhood discussed above. Such a system is illustrated on Plate 17, Page

Access Requirements for Dwellings

Access to residential facilities should be exclusively from residential service and neighborhood feeder streets.

Paved streets and walks, maintained in good condition and open to travel at all times should give access to all dwellings. Definite consideration must be given to access for fire-fighting equipment, ambulance, furniture moving vans, fuel delivery trucks, refuse collection and snow plows or snow removal equipment.

Parking Requirements

Provision of suitably located parking spaces of adequate size is an important factor in planning the circulation system. Not only does indiscriminate

parking along streets slow down traffic, but it is a serious accident hazard at intersections and along curves. Noise and odors may be objectionable if parking is allowed directly below windows.

Decisions as to the location and type of the parking facility, whether off or on street, affect the width and layout of streets. Parking provisions are, therefore, an integral part of the circulation system and should be determined at the beginning.

Pedestrian Circulation

Walks from all dwellings should provide convenient and safe access to elementary schools, shops, playgrounds and other chief pedestrian objectives.

The circulation system should be so laid out as to minimize accidents to pedestrians, especially to children. This can be accomplished by substantial separation of vehicular and pedestrian traffic, especially of major walks and neighborhood collector streets. However, such separation is effective only if the walks are laid out to provide more direct access to normal pedestrian destinations than do the streets.

Another means of reducing pedestrian and vehicular conflict may be found on page

Public Transit

All residences of an area should have access to adequate public transportation to central areas and places of employment where they are not within easy walking distances. It is desirable that the farthest dwelling be no more than one-fourth to one-third mile walking distance from the nearest stop of one transit system over well maintained, lighted all weather walks.

THE FUTURE

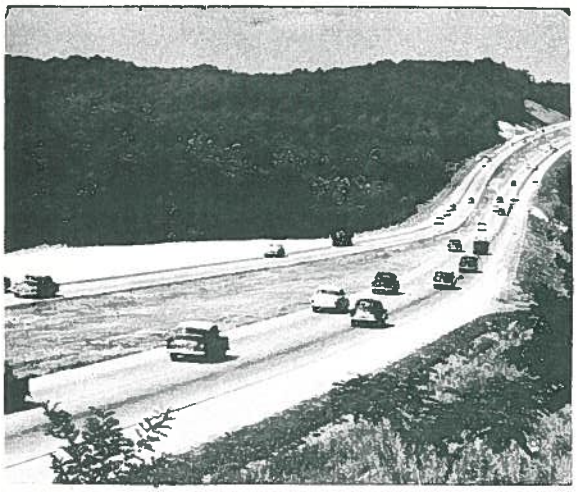
The Northern Virginia Region with a 1960 Bureau of the Census population of 601,811 and Alexandria with a 1963 population of 100,000 fits well within the definition of "urbanized areas of 50,000 or more population as contained in the "Federal Highway Act of 1962".

Alexandria has applied, along with the Northern Virginia Region for a Northern Virginia Regional Transportation Plan, which if acceptable to the state, will begin on or about June of this year.

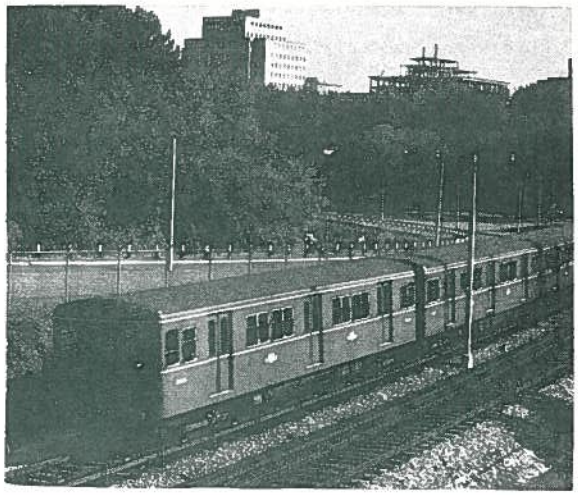
The areas proposed to be included in the study are all of those portions of the Northern Virginia Region which now contain, or in which projections of the local Planning Commissions indicate that they will contain, urbanized areas of 50,000 population by 1980.

A wealth of information can be obtained from such a study which in the long run will provide the answers to many questions presented on traffic volume and driver desires. Many of the city's traffic problems can be alleviated from the data obtained. In addition the existing Major Thoroughfare Plan can be tested and brought into line, if needed.

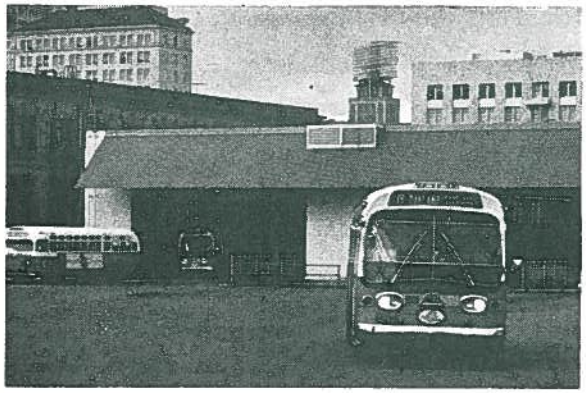
It is the desire of the City to have a balanced system of transportation to serve its populace. Only such a system can ease the growth problem which creates congestion.



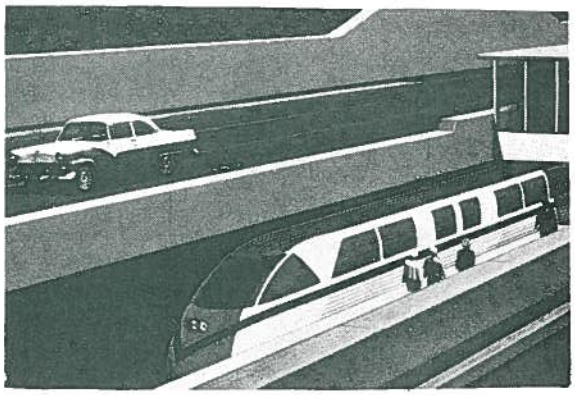
Expressways



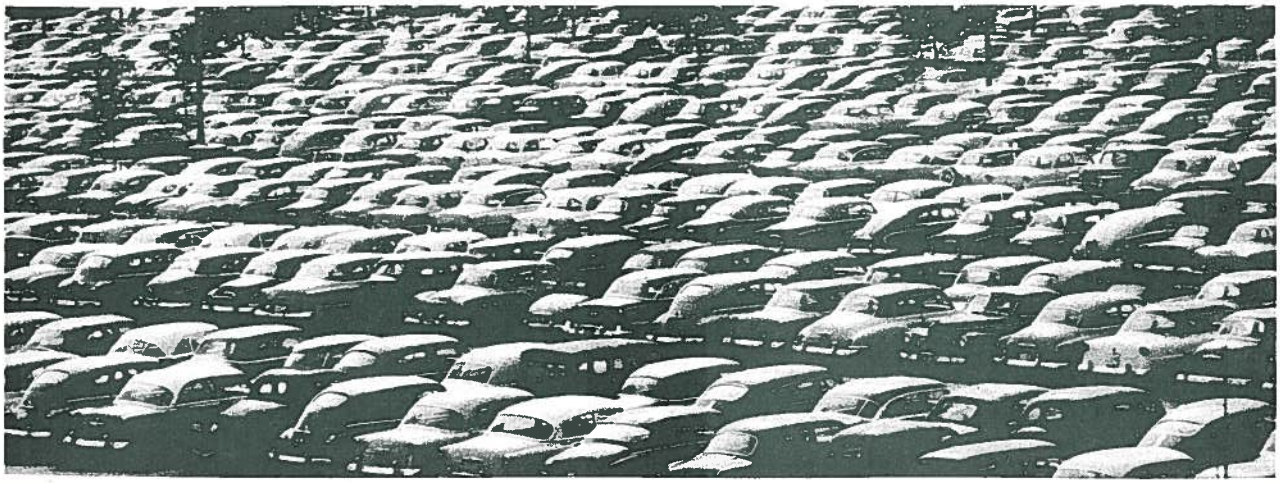
Commuter Trains



Feeder Buses



Rapid Rail

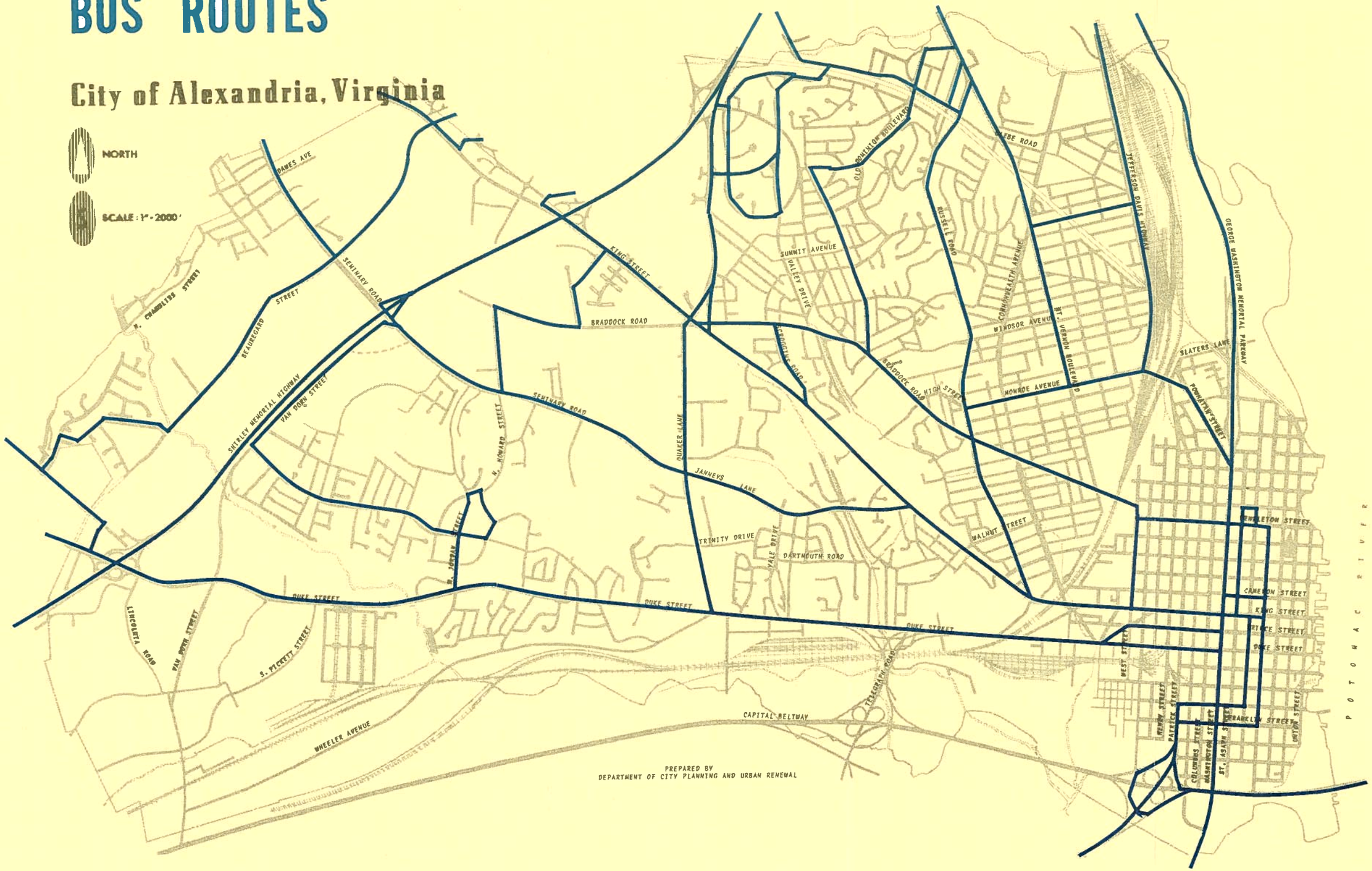


Parking Areas

EXISTING AB & W BUS ROUTES

16

City of Alexandria, Virginia



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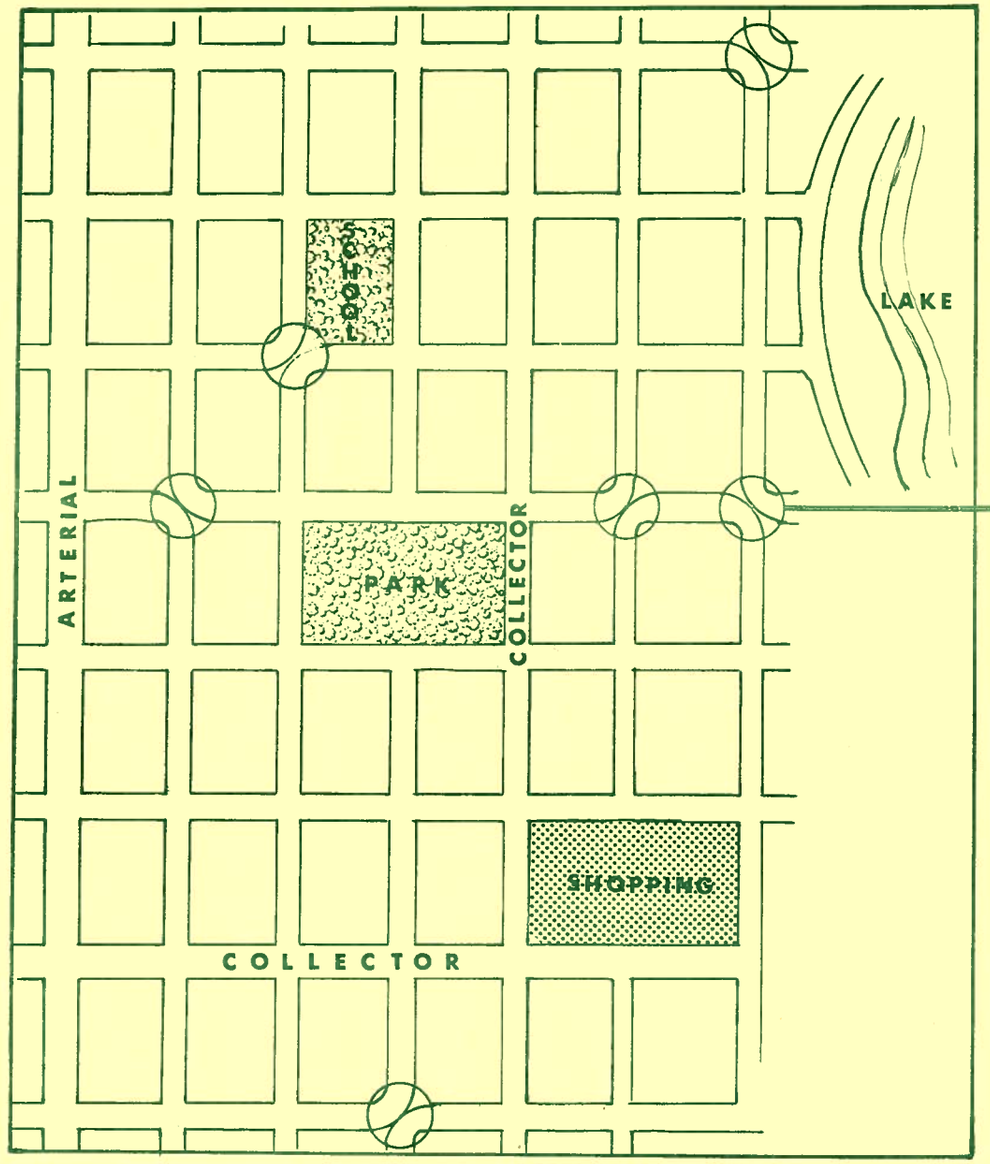
96

ONE METHOD OF SOLVING TRAFFIC SAFETY PROBLEMS

17



SAFETY WALK

By removing the pavement diagonally across the intersection and constructing raised curbs, all traffic approaching the intersection is forced to turn. The use of smooth curves and planting of trees and shrubbery gives the illusion of two curved streets rather than four approaches to an intersection. The sidewalks on the diverter between the two curves serve a dual purpose, both as walkways for everyday use and for the emergency passage of firetrucks.

CHURCHES

Churches play an important role not only in the religious, but also in the cultural and social life of a community, serving in part as recreational and educational centers. Naturally it is virtually impossible to have specific plans for churches in development areas before the community is occupied, but it is important that space be set aside for the later building of churches. Because of the variation in religious interests of various population groups, it may be impossible to predict the number and types of churches that may spring up in a new community.

In the Washington Metropolitan area the average membership is around 750. The average attendance is around 380 persons. Religious authorities consider it reasonable to plan for one church for every 700 families.

In the future churches will be hard put to find available land in Alexandria for building purposes, due to the rapid growth and high cost of land in the western portion of the City. This statement was verified by a representative from the National Council of Churches. Religious acquisition of land, along with the governmental acquisition of land for parks and schools, more or less, will find themselves in the same position, no land available or land available but at a high cost.

The developer in the planning phase of a tract of land should consider the effects of his development on the social and cultural wants of the individuals who will be served, and city populace as a whole and therefore, provide or reserve land for these important aspects of life.

Where neighborhoods composed of very diversified religious groups, churches may often be grouped with other community facilities at the community level, such as high schools and civic centers as they then serve a rather widely scattered population.

TABLE XXII

LOCATION OF EXISTING CHURCHES
BY CENSUS TRACT

Tract 1

St. James Methodist	5000 Echols Avenue

Tract 2

Fairlington Methodist	3900 King Street
Fairlington Presbyterian	3846 King Street
Immanuel on the Hill, Episcopal	3600 Seminary Road
Temple Beth El Jewish Cong.	3830 Seminary Road

Tract 3

Tract 4

Tract 5

Duke Street Baptist, Southern	4545 Duke Street
St. Andrew's Methodist	845 North Howard Street

Tract 6

Tract 7

Tract 8

Alexandria Ward of LDS	2810 King Street
Fairfax Ward of LDS (Meeting)	2810 King Street
First Baptist, Southern	2932 King Street
First Christian	2732 King Street
Oakland Baptist, National	3408 King Street

Tract 9

Agudas Achim Jewish Cong.	2896 Valley Drive
Alexandria Seventh Day Adventist	1400 Russell Road
Blessed Sacrament, Roman Catholic	1415 West Braddock Road
Emmanuel Episcopal	1608 Russell Road
St. Clement Episcopal	1701 Quaker Lane
Westminster Presbyterian, US	2701 Cameron Mills Road

Tract 10

Fair Park Baptist, Southern	1801 North Quaker Lane

Tract 11

Beverly Hills E.U.B.	3512 Old Dominion Blvd.
Trinity Methodist	2911 Cameron Mills Road

Tract 12

Grace Episcopal	3601 Russell Road
St. Rita's Roman Catholic	3815 Russell Road

Tract 13

Christian & Missionary Alliance	2707 Dewitt Avenue
Church of God	406 Mt. Ida, East
First Pilgrim	402 East Monroe

Tract 14

Commonwealth Avenue Brethren	1301 Commonwealth Avenue
Del Ray Baptist, Southern	2405 Russell Road
Del Ray Methodist	100 East Windsor Avenue
First Christian Fellowship	218 East Monroe Avenue
First Christian Science	1709 Russell Road
First Church of the Nazarene	Braddock Rd. & E. Spring St.
Immanuel Lutheran, Missouri Synod	1801 Russell Road

Tract 15

Alexandria Church of Christ	111 East Braddock Road
Baptist Temple, Southern	700 Commonwealth Avenue
Jehovah Witnesses Kingdom Hall	6 East Masonic View Avenue

Tract 16

Alexandria Seventh Day Adventist	1012 Pendleton Street
Bethel Presbyterian, US	634 North Patrict Street
Ebenezer Baptist, National	909 Queen Street
Meade Memorial Episcopal	322 North Alfred Street
Mt. Jezreel Baptist, National	317 North Payne
Old Presbyterian Meeting House, US	321 South Fairfax Street
Russell Temple, CME	507 North Alfred Street
St. John's Baptist, National	901 North Alfred Street
Third Baptist, National	917 Princess Street

Tract 17

Zion Baptist, National	714 South Lee Street

Tract 18

St. Joseph's Roman Catholic	711 North Columbus Street
United House of Prayer	437 North Columbus Street

Tract 19

Alexandria Free Methodist	201 Prince Street
Antioch Pentecostal	130 North Fayette Street
Christ Episcopal	125 North Columbus Street
Second Presbyterian, US	605 Prince Street
Shiloh Baptist, National	1401 Duke Street
Washington Street Methodist	115 South Washington Street
First Assembly of God	207 South Patrick Street

Tract 20

Alfred Street Baptist, National	313 South Alfred Street
Beulah Baptist, National	320 South Washington Street
Community	400 South Columbus Street
Dowtown Baptist, Southern	212 South Washington Street
Robert's Memorial Methodist	604½ South Washington Street
St. Paul's Episcopal	228 South Pitt Street
St. Mary's Roman Catholic	310 Duke Street

D A Y N U R S E R I E S

HISTORY

Full day care for children in this country reaches back into history 100 years when, as a result of the Civil War, many widows found it necessary to seek employment in an effort to provide for their families. It was not until the advent of the depression in 1930 that the government played a role in day care organization, however. This was accomplished under the Works Progress Administration in 1935. Later during World War II in an effort to encourage war effort participation by mothers to increase production of war goods, the program was expanded under the Lanham Act and in 1944, it was reported that 130,000 children were taken care of at an expense to the public of 50 million dollars. After the war, the funds were gradually decreased until the program was terminated in 1950.

As in the past, the primary use of day care centers is for the working mother and the demand for these centers will depend on employment opportunities for the mother and her need for employment.

EXISTING FACILITIES

The City of Alexandria at present has no public child day

care centers within its limits available to families of very modest means. The City does, however, contain four (4) private child day care centers, namely: (1) Church of God located at 2912 King Street, (2) Good Shepherd Luthern Church located at Braddock Road and Luray Avenue, (3) Dutchess Day Nursery located in the vicinity of Duke and Gordon Streets and, (4) Suburban Day Nursery located at 500 Windsor Avenue. The private day nursery centers in Alexandria are licensed by both the city and state and inspected annually for the childrens' protection.

RECOMMENDATIONS

Although the City contains four (4) private child day care centers, their facilities are not providing service to families of low income, the mother of which must secure outside employment to supplement the family income for one reason or another in an effort to achieve a better standard of living.

It is strongly recommended that at least one center be established centrally located within planning district one, north of King Street to conveniently serve the lower income population. It should be emphasized that the Alexandria Community Welfare Council conducted a study in April, 1959, which revealed that 312 mothers from a sample of 1,074 homes throughout the City would send their children to day care facilities if they were available.

The Alexandria City Council, recognizing the need, has included in the 1964-65 budget $25,000 for the provision of such a facility to accommodate 45 children. This might well serve as a pilot project.

Location of future day care facilities can be economically tied in with construction of community centers in areas where the demand is greatest.

EXISTING CHURCH & DAY NURSERIES

City of Alexandria, Virginia

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DEPARTMENT OF CITY PLANNING AND URBAN RENEWAL

LEGEND

- [C] CATHOLIC
- [J] JEWISH
- [P] PROTESTANT
- ▲ DAY NURSERY

ELECTRIC POWER

The City of Alexandria is served with electricity by the Virginia Electric Power Company. The power company supplies electricity for Alexandria at the following generator stations: Possum Point, south of Alexandria; Bremo, south of Charlottesville; Chesterfield, south of Richmond, Portsmouth; Yorktown; 12th Street in Richmond; Reeves in Norfolk; and Roanoke Rapids Hydro-Station. The Gaston Hydro-Station will be in operation by the end of the year. These VEPCO power sources are inter-connected, all or one of these stations supply the City of Alexandria with electricity dependent upon the City's demand at any given time. Power is transmitted to Alexandria from the major generator stations by 110,000 and 230,000 volt transmission lines.

The VEPCO Generator Stations are also inter-connected to the Appalacian Electric Power Company, Carolina Power and Light Company and by the end of 1963, will be also inter-connected with the Potomac Electric Power Company. In the event of a major power failure in the VEPCO supply, these other power companies can be available to supply power requirements. The power transmitted to Alexandria is received by the Jefferson Street step-down station located south of the Robert E. Lee School site and east of the City incinerator. The step-down station transmits this power supply on 22,000 and 34,500 volt trunk lines. Additional step-down stations are distributed throughout the City of Alexandria. These step-down stations distribute electricity to the users with 4,000 and 12,000 volt distribution lines. The size of the line depends upon a neighborhood's individual characteristics, such as type and density of use.

The Jefferson Street step-down station is inter-tied and inter-changed with Idlewood in Arlington located near the Shirlington Shopping Center, Glebe located in Arlington County, Braddock in Annandale and Occoquan step-down stations.

The VEPCO Generator Plant, presently in cold storage, fronting on the Potomac River between Wilkes and Wolfe Streets will not likely ever be used as a power generator. Disposal of this plant is quite possible.

RECOMMENDATIONS

The City of Alexandria will require two (2) additional step-down stations to distribute power on 4,000 to 12,000 volt distribution lines west of Shirley Memorial Highway. One step-down station should be located somewhere near the intersection of Lincolnia and Edsall Roads on land zoned industrial. The other step-down station has been subject to criticism as a result of site considerations on the part of VEPCO in single family zoned areas. VEPCO is in agreement that a step-down station could be located centrally along the Holmes Run between North Beauregard Street and Shirley Memo-

rial Highway. It is recommended that a 35 acre site be acquired in this area to be developed as a neighborhood park. The location of a step-down station which according to VEPCO will require approximately 100 x 130' tract could be concealed within this neighborhood park detracting from neither the remaining portion of the relaxation area, nor nearby residential development. VEPCO explains that this step-down station has been needed for some time and strongly urges that a site be recommended by the Planning Commission and City Council which will allow construction to begin as soon as possible so that service may be provided in 1963. These two step-down stations will quite possibly do the job of providing adequate power service to this portion of the community which will consist of approximately 90,000 persons as anticipated in the Generalized Land Use Plan. VEPCO considers the remainder of Alexandria adequately served today and most likely the remainder of the community will require little or not major additions in the future.

The location of power lines above-ground is generally less expensive than underground locations. This is true in residential areas of low density and in almost every case true of single family development. Because of the undesirable features of above-ground locations, it is recommended that underground installations be encouraged wherever economically feasible to locate power lines beneath grade when serving high-rise development, dense garden-type development, dense row house development, such as the Gadsby area and regional shopping centers. Of course in areas of high water and rocky soil, this objective cannot be met. Location of underground transmission lines is on the average, three to four times more expensive than above-ground location in single family areas.

THE FUTURE

VEPCO plans to construct a plant with a capability in excess of 1,000,000 kilowatts of power which will be constructed in the coal fields of Grant County, West Virginia. Two generating units will be constructed. The first is expected to be in operation in 1965 and the second in 1966. This system will tie in to supplement the existing system including Alexandria, Virginia.

T E L E P H O N E

Major transmission lines should, so far as possible, seek rural locations or locations on the edge of the urban pattern. Where they must cross urban areas and branch out into local dis-

tribution lines, both they and the local lines should be built underground to contribute to a most aesthetic urban environment.

In Alexandria telephone lines are being located underground whenever possible in new developments and it is hoped that the existing aboveground lines will replaced with underground lines.

The Chesapeake and Potomac Telephone Company of Virginia has stated that when telephone service is required, it will be provided. There is no great obstruction in the extension of telephone service.

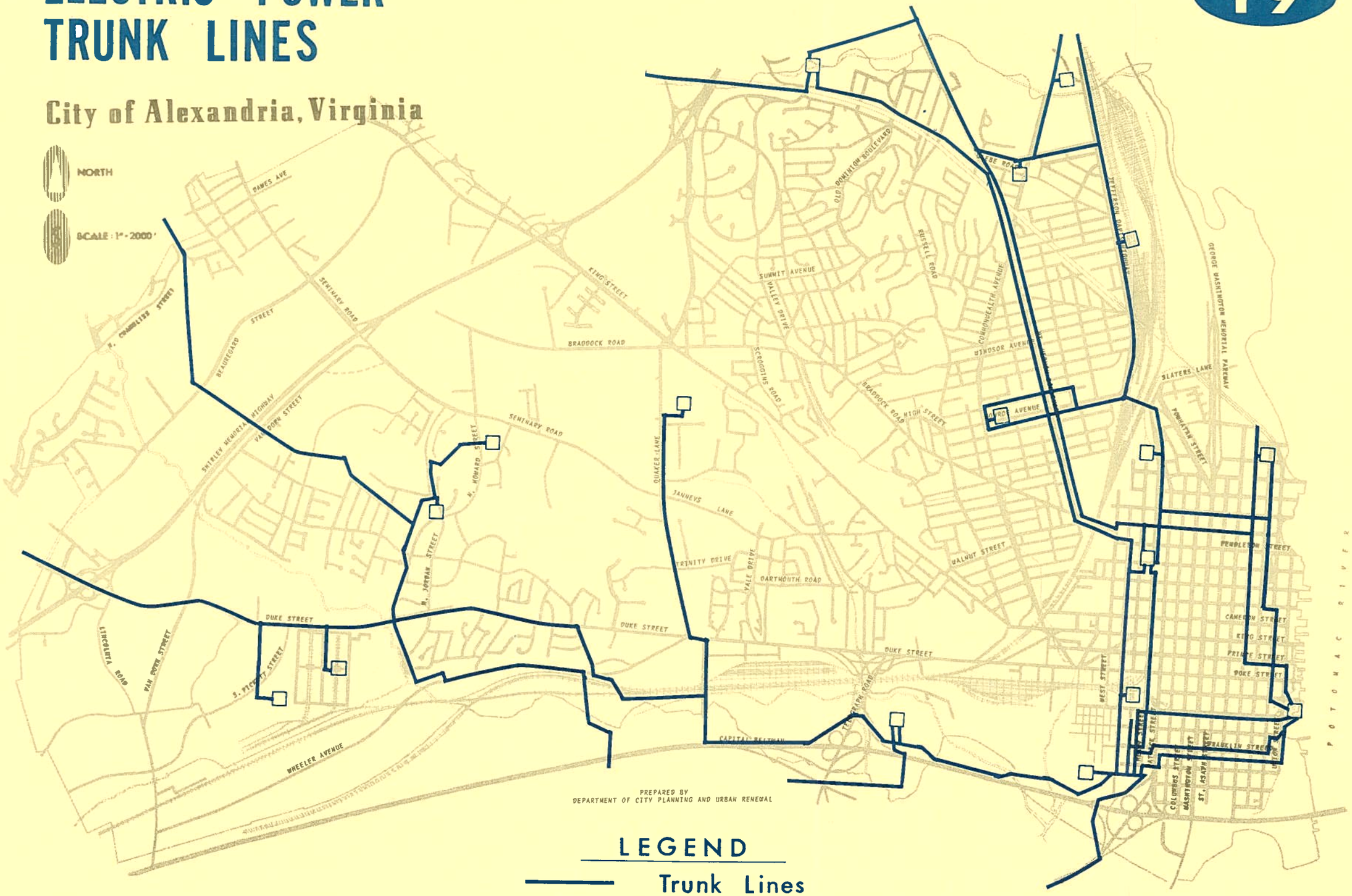
ELECTRIC POWER TRUNK LINES

City of Alexandria, Virginia

19

NORTH

SCALE : 1" - 2000'



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LEGEND

Trunk Lines

Sub-Stations

107

TELEPHONE SERVICE

20

City of Alexandria, Virginia

LEGEND

——— Aerial Cable Feeds

– – – Underground Cable Feeds

W A T E R

INTRODUCTION

In a report entitled "Water Resources" prepared in September, 1961, by the Staff of the Northern Virginia Regional Planning and Economic Development Commission, an examination was presented regarding future water service for the Northern Virginia Area which indicated that the Potomac River must continue to be the dominant water source to serve expected population increased in the Washington Metropolitan Area by the year 2000. It is emphasized that the anticipated population of five million persons within the Washington Metropolitan Area will require intensive impoundment development within the basin in order to receive adequate service based on an average per capita water consumption of 125 gallons per day and an existing facility yields a minimum daily flow of 506 million gallons.

To insure a supply of water to meet all needs and also to avoid placing reliance on only one source, the two remaining Northern Virginia surface water supplies (Occoquan Creek and Goose Creek) can be developed to relieve the tremendous burden on the Potomac River. As a matter for long range planning, the Army Corps of Engineers is investigating the possibility of securing a water source from the ocean. The problem of economics must, of course, be overcome prior to any serious consideration of such a source, however.

ALEXANDRIA WATER COMPANY

Much of the following information was obtained from testimony given in 1962 by Mr. E. H. Aldrich, Vice President and Engineer Consultant, American Water Works Service Co., Inc., on behalf of the Alexandria Water Company when the Fairfax County Water Authority took steps to take over the public services.

History and Growth

The charter of the Alexandria Water Company was granted by the Virginia Legislature on March 22, 1850, and amended on April 28, 1927. The company was financed by local capital and continued to operate under local ownership and management until April 18, 1929, when the capital stock was acquired by the American Water Works and Electric Company, a predecessor company of the American Water Works Company---its present owner.

Upon the completion of the Occoquan supply, the Virginia Water Company was formed on July 1, 1948, to furnish service to the rapidly growing area of Fairfax County, outside of Alexandria. It was merged with the Alexandria Water Company on June 24, 1957.

The construction of the water system was commenced in 1851 and water was first delivered into the mains serving Alexandria in June, 1852. The company has provided continuous water service to the city and its environs since that

time, 110 years ago.

The original water works consisted of a pumping station on Cameron Run near Telegraph Road, which secured its supply by the diversion of the stream below the junction of its main tributaries, Holmes and Back Lick Runs, through an existing mill race extending some 9,000 feet to the station. The race delivered water in sufficient quantity and head not only for water supply, but to provide power to drive an overshot water wheel. A 1 MGD reciprocating pump, actuated by the water wheel, elevated the water without treatment to a 2.5 MG storage basin on the heights adjacent to the station, having flow line elevation of 96.5 feet, from which it flowed by gravity through seven miles of cast iron pipe to its customers.

In 1855 a steam engine and boiler were installed, affording an alternate source of power for pumping. The water wheel remained in service until the early 40's and the steam equipment somewhat later.

In 1874-75 a second storage basin, with a capacity of 13.5 MG, was constructed adjacent to the original basin. Both of these basins continue in active service today.

The supply, as it existed in 1875, was sufficient until it became evident in the early 1900's that additional storage would soon be required to supplement the run-of-the-stream supply. The acquisition of land on the headwaters of Holmes Run began in 1903 and, in 1913-15, Barcroft Dam was constructed. The reservoir formed by this dam contained originally 617 MG. Additional storage was developed in 1942 by the installation of wickets on the dam, raising its water level and making its capacity 780 MG.

The drainage area above the dam was 14 square miles, and the combined area tributary to the point of diversion on Cameron Run totaled 33 square miles.

In 1918-19 a filtration plant was constructed adjacent to the distribution reservoirs. These became reservoirs for storage of water after filtration. The original filter plant had a capacity of 2.5 MGD. This was increased by additions from time to time until replaced by the Occoquan supply in 1950.

In 1933, due to the growth of the system, additional demands and higher service elevations, it became necessary to discontinue gravity feed from the reservoirs and to pump all water. Two services were supplied: one to the Main Service and the other to the higher elevated areas, known as the Jefferson Park High Service.

The Cameron Run supply continued in service until 1950. Several years before this, however, it became apparent that additional supply must be provided to serve the increasing needs within the city, as well as the rapidly expanding growth in Fairfax County surrounding Alexandria. Prospecting for the development of well supplies in the area held little hope for increasing the supply in any substantial amount. The well supplies at St. Elmo Reservoir, Slater's Lane and Belle Haven were

installed and helped to span the period before a new supply could be developed. They still remain in service and are useful during peak load periods.

The dry-weather yield of the Cameron Run supply system, based upon the dry-weather period in 1930-31, was estimated to be not more than 5.7 MGD. In 1942 trunk sewers were constructed along Cameron and Holmes Runs and along both shores of Barcroft Reservoir. Because of the location of these sewers below reservoir water levels and inadequate construction standards, it was determined that considerable infiltration into the sewers from the stream and reservoir was occurring so that the safe yield might be of the order of 2.5 to 3.5 MGD, less than half the demand in 1948. It immediately became apparent that a substantial additional supply must be secured elsewhere. Attempts were made to develop well supplies with little success. Several streams, notably Accotink and Pohick Creeks, were investigated as possible sources. The first of these was already serving as a water supply for Fort Belvoir. Both creeks have small drainage areas, and the amount of storage which would be required to secure an adequate and dependable supply for the future made the development of these streams uneconomical.

At about this time the Occoquan Hydro-Electric Power Company, which had built a dam and reservoir on Occoquan Creek, the southern boundary of Fairfax County, about eight miles above tidewater and briefly furnished power to several hundred farms in the vicinity, sold its distribution system and was no longer in operation. It had an impounding dam, called Ryons Dam, estimated to hold about 1.5 billion gallons, on Occoquan Creek which, at tidewater, had a drainage area of about 600 square miles. Previously, the Occoquan Hydro-Electric Power Company had purchased the Occoquan Company. This company was formed about 1900 to develop hydro-electric power at or near tidewater, although it had never operated. It owned land, water and flowage rights at tidewater and for a considerable distance upstream. Through the purchase of these two companies, with their land, water and flowage rights, the development of the Occoquan supply to supplant the Cameron-Barcroft supply works in 1950 was made possible.

The Occoquan supply works were conceived and developed largely in the period 1948-50. Between that time and the present, many improvements and additions have been made to the Alexandria system. The treatment plant at Occoquan has been expanded three times its original size. Storage provided by the new dam, approximating 10 billion gallons, has substantially increased the available supply.

Area served and to be served by the Alexandria Water Company

The Alexandria Water Company furnishes water service to the City of Alexandria and a substantial portion of the southern half of Fairfax County lying south of Alexandria, Arlington County, Annandale and Falls Church. The supply available to the Alexandria Water Company is adequate

to serve its present customers and certificated service area. With minor additions to production and transmission works as they become necessary it has sufficient capacity logically and economically to serve the area generally south of Little River Turnpike and the City of Fairfax, lying west of its existing service area, as well as a considerable area of Prince William County.

The company also sells water wholesale to the Fairfax County Water Authority, Fort Belvoir and the Woodbridge-Occoquan Sanitary District serving Prince William County. Steps have recently been taken to serve water to the Dumfries-Triangle Sanitary District under a contract with Prince William County. It also furnishes the raw water supply to the Department of Corrections of the District of Columbia near Lorton.

The Alexandria Water Company secures its major supply from a developed source on Occoquan Creek some 20 miles south of Alexandria. A small dam, impounding 55 MG was constructed in 1948 about 3,000 feet above tidewater, with a spillway elevation of 52.0'. From a screened intake in the dam, the water flows by gravity through a three compartment concrete conduit to the Low Service Pumping Station located at tidewater.

The upper Occoquan dam was started in 1955 and completed to its present spillway elevation of 120 in 1958. It is located about a mile above tidewater and impounds, in Fairfax and Prince William Counties, about 10 billion gallons from a drainage area of nearly 600 square miles, largely located in Prince William County. The reservoir formed by the upper dam covers over 1,700 acres and stretches, in its main branch, some 16 miles upstream.

The safe, dependable yield of the Occoquan supply, as presently developed, is sufficient for the estimated needs of the system beyond the year 2000. Recent studies using up-to-date maps have indicated it to be approximately 63.5 MGD. In addition, the dam was so designed as to raise the water five feet at some future date. This will increase the storage 3 BG and the safe yield to approximately 77 MGD.

The raw water supply is conveyed from the Upper Dam through a 36-inch transmission main about one mile long to the Low Service Station. At this station the raw water is pumped through two 30-inch pipe lines about 2,500 feet to the purification plant located on the hill at approximate elevation of 235'.

Power production equipment at both dams can provide, with full head available, some 2,000 HP to drive high and low service pumps. Low Service pumping capacity totals approximately 36.5 MGD.

The purification plant consists of twelve 2.2 MGD purification units with a total rated capacity of 26.4 MGD and a maximum capacity of about 33 MGD. Two 1 MG standpipes are provided for wash water, as well as to serve a function in pumping to the system. In addition, filtered water storage

is provided in amount of 1.4 MG.

There are essentially three different sets of pumps provided to pump the plant output to the distribution system. There are four high service pumping units with a present total capacity of about 14 MGD pumping from the wash water storage standpipes. There are two transfer pumps which pump from the clear well to the wash water standpipes, to the suction side of the high service pumps, or to both. They have a total capacity of slightly under 30 MGD.

Water to the main service of Alexandria and intervening territory, including service to Fort Belvoir, normally flows by gravity from the wash water standpipes. However, there are two main service booster pumps provided which can take suction either from the clear well or the wash water standpipes and boost to the main service area. Approximately 19 MGD can be served to the main service area in this way. Service to Prince William County is by gravity.

Plans are presently in progress to increase the capacity of the production works at the Occoquan plant by from 4 to 8 MGD.

There are two major transmission mains conveying water to the distribution system: one supplying the so-called Main Service and the other the High Service Systems.

The Main Service transmission main is 30 inches in diameter and runs from the plant northward along Telegraph Road, reducing near Alexandria to 24-inch in size and continuing to the Cameron Run Pumping Station. A 20-inch connection takes off at Gravel Road and continues to Sherwood Hall Lane and Snowden Road where two 16-inch mains divide and serve the area along Fort Hunt Road. Fort Belvoir receives its supply from this main approximately 1/3 of the way to Alexandria. A small booster station pumps, when needed, the supply to the Fort Belvoir system.

From the wash water standpipes a 12-inch main goes to the Village of Occoquan to furnish a supply to the Woodbridge-Occoquan Sanitary District. An additional 24-inch transmission main is now being installed to reinforce the service to this district and to serve the new Dumfries-Triangle Sanitary District in lower Prince William County.

The High Service transmission main, also 30 inches in size, extends from the plant some $8\frac{1}{2}$ miles along Route 123, Shirley Highway and Back Lick Road to Franconia Road at Springfield. Here it divides and one branch extends along Franconia Road as a 24-inch and reducing to 16-inch continues, some $7\frac{1}{2}$ miles in all, to the Cameron Run Pumping Station. The other branch continues from Franconia Road along Back Lick Road as 24-inch to three storage reservoirs near Annandale.

Other major lines in the high service consist of a 20, 24 and 30-inch main on Braddock Road, west of Back Lick Road, and a 20-inch east to Little River Turnpike, with a 20-inch continuing to Lincolnia and thence 16-inch in size along Shirley High-

way to Seminary Road. Another 16-inch branch continues via Columbia Turnpike to Bailey's Crossroads.

Just beyond Franconia Road on Back Lick Road in Springfield there is a 10 MGD booster station called the Springfield booster which during peak days can be used to increase the output of the high service by about 5 MGD. The total pumping capacity at Occoquan thus becomes approximately 38 MGD about evenly divided between main and high service systems.

Cameron Run Station

Cameron Run Station is located east of Telegraph Road adjacent to Duke Street. Located nearby are the two main service distribution reservoirs $2\frac{1}{2}$ and $13\frac{1}{2}$ MG capacity, respectively. In the station two sets of pumps are provided to pump, during peak load periods, this storage into the system serving the Main Service and the Jefferson Park High Service largely within the City of Alexandria. This storage is replenished during off-peak periods.

Storage

In the main service area, there is a 1 MG elevated steel tank on Payne Street. In addition, at St. Elmo there is a 700,000 gallon reservoir and at Belle Haven a 100,000 gallon elevated steel tank.

Jefferson Park high service has a storage of 700,000 gallons in a 75-foot high standpipe.

In the High Service System, there are three steel reservoirs near Annandale off of Back Lick Road approximately 40 feet high: two holding 2 MG each and the third 5 MG, a total storage of 9 MG.

In addition to these storage facilities, most of the systems purchasing water wholesale from the company -- Woodbridge-Occoquan and Dumfries-Triangle Sanitary Districts, the Department of Corrections, Fort Belvoir, maintain substantial storage in their own systems.

Well Supply

There are three well supplies, useful under peak load conditions to introduce water into the main service at three locations. St. Elmo Well is located adjacent to its storage reservoir which holds 700,000 gallons. It will produce about 0.25 MGD. Slater's Lane Well can pump about 0.425 MGD and the Belle Haven Well approximately 0.86 MGD. The first two are located near the northerly end of the Alexandria distribution system, while Belle Haven is located to the south.

Center of Operations

The company recently constructed a new office building on Duke Street, near its two distribution reservoirs adjacent to Masonic Memorial, where all business and commercial activities are centered. Distribution materials storage, meter testing and repairing and the distribution work force are centered at the Cameron Run Station previously mentioned.

The customers served at the end of 1961 were 35,512 connections; water sales were in excess of 6 BG through 485.0 miles of main. In addition, 367 MG of raw water were sold to the District Workhouse.

Growth in the System

The growth in the territory served by the Alexandria Water Company has been almost phenomenal. In the past 20 years customers have increased from 9,000 to 35,500; water sales from 900 MG to 6 BG and miles of main from 93 to 485 -- all having more than quadrupled.

Plans for meeting the continuing growth

Studies have been made and planning continues for the development of the system throughout the next 40 years. For the more distant future, considerable leeway must be allowed for variable factors. Forecasts state that the average and maximum day's rates required for the future will be approximately as follows:

	Average MGD	Max. Day MGD
1970	30.0	44.0
1980	40.0	56.0
1990	47.0	64.0
2000	50.0	68.0

For the immediate future, in the next three years, the company has projected the following major additions to the production and transmission facilities.

1. Additional transmission main, 70,000 feet of 36-inch, 30-inch and 24-inch $2,000,000

2. New purification and pumping plant $1,345,000

3. Additional High Service station $ 155,000

4. Additional High Service storage $ 90,000

In addition to these major items, approximately $750,000 annaully has been recently needed for distribution piping, services, meters and general equipment. If the growth continues as projected in a slightly decreasing trend at least $750,000 to $1,000,000 per year must be provided, or a total of nearly $30,000,000 in the next 40 years. These costs are based upon present day price levels. Any increase in such levels would increase the cost, substantially in the same percentage.

The Alexandria Water Company is an independent, complete, integrated water system. It impounds, treats, pumps, transmits, stores and distributes its supply of water to its customers throughout its service area.

An Integrated System

There is no separation of its customers by geographical or political boundaries. The transmission and distribution elements cross the City boundaries many times in the Main Service, the Jefferson Park Service and the Annandale High Service. There are at least 20 points where mains 6" to 20" in diameter transmit water into or out of the City and at 12 of these points the water can go either way dependent upon pressure and flow conditions which may exist.

Other facilities, such as booster stations and storage facilities, serve city and county customers without distinction.

For instance, the storage facilities at Annandale regulate pressures and flows to most of the high area of Fairfax County as well as to much of the City of Alexandria. The Main Storage facilities at Cameron Run with its booster pumping plants serve indiscriminately customers within and without the City.

The supply and production works are located in Fairfax and Prince William Counties. The major part of the production works, the pumping stations and treatment plant are located in Fairfax County. Most of the transmission system which carries the water to the distribution pipes within and without the City are located in Fairfax County.

Rates, rules and service regulations of the company are subject to local and state agencies

There are a number of local and state agencies or commissions which supervise, regulate or control its operations.

The quality of the water supplied to its customers is under continuous supervision and control of the Virginia State Board of Health, assisted by local city and county health organizations. Frequent periodic reports of the bacteriological, chemical and aesthetic quality of the water are rendered thereto.

Rules and conditions of service, areas to be served, rates to be charged for service and the accounting procedures and financing of private water utilities are under the supervision and control of the State Corporation Commission. Annual reports of operations are rendered thereto.

Plans for the future development as planned by the Alexandria Water Company

It is the aim of the company to continue to develop its facilities and render such service as will fulfill all reasonable needs of its existing and prospective customers throughout the future as they develop. It looks upon that area of Fairfax County generally lying south of Little River Turnpike and the City of Fairfax, westerly to the county limits and the southerly part of Prince William County as the area it can efficiently and economically serve from its Occoquan supply works.

AVERAGE DAILY PER CAPITA WATER CONSUMPTION

In the report prepared by the Northern Virginia Regional Planning and Economic Development Commission, dated September, 1961, six basic conclusions were pertinent.

1. "Residential water consumption should increase in all jurisdictions with the new residential developments all exhibiting equal water consumption capabilities due to nearly universal use of automatic washers, food disposal units and increased automobile washing and lawn watering, etc."

2. "Per capita water demands will continue to increase in all

Northern Virginia Area, but it will be at a less rapid rate in Prince William and Loudoun Counties until governmental, industrial and commercial activities begin a growth period following or coincident with residential development."

3. "With anticipated population growth in Prince William County, it will be necessary to put almost complete reliance upon the Occoquan Creek system to meet increased demands."

4. "Goose Creek is being utilized to meet Fairfax City demands, and much of the growth area in Loudoun County around Dulles International Airport will be developed relying upon this water source."

5. "Even with two surface water sources at optimum development, Occoquan and Goose Creek, reliance upon Potomac River water will increase."

6. "The Potomac River will remain, by geographic circumstances, the major source for the Washington Area."

FUTURE SUPPLY

Estimates of average daily per capita water consumption for the City of Alexandria are quoted as follows:

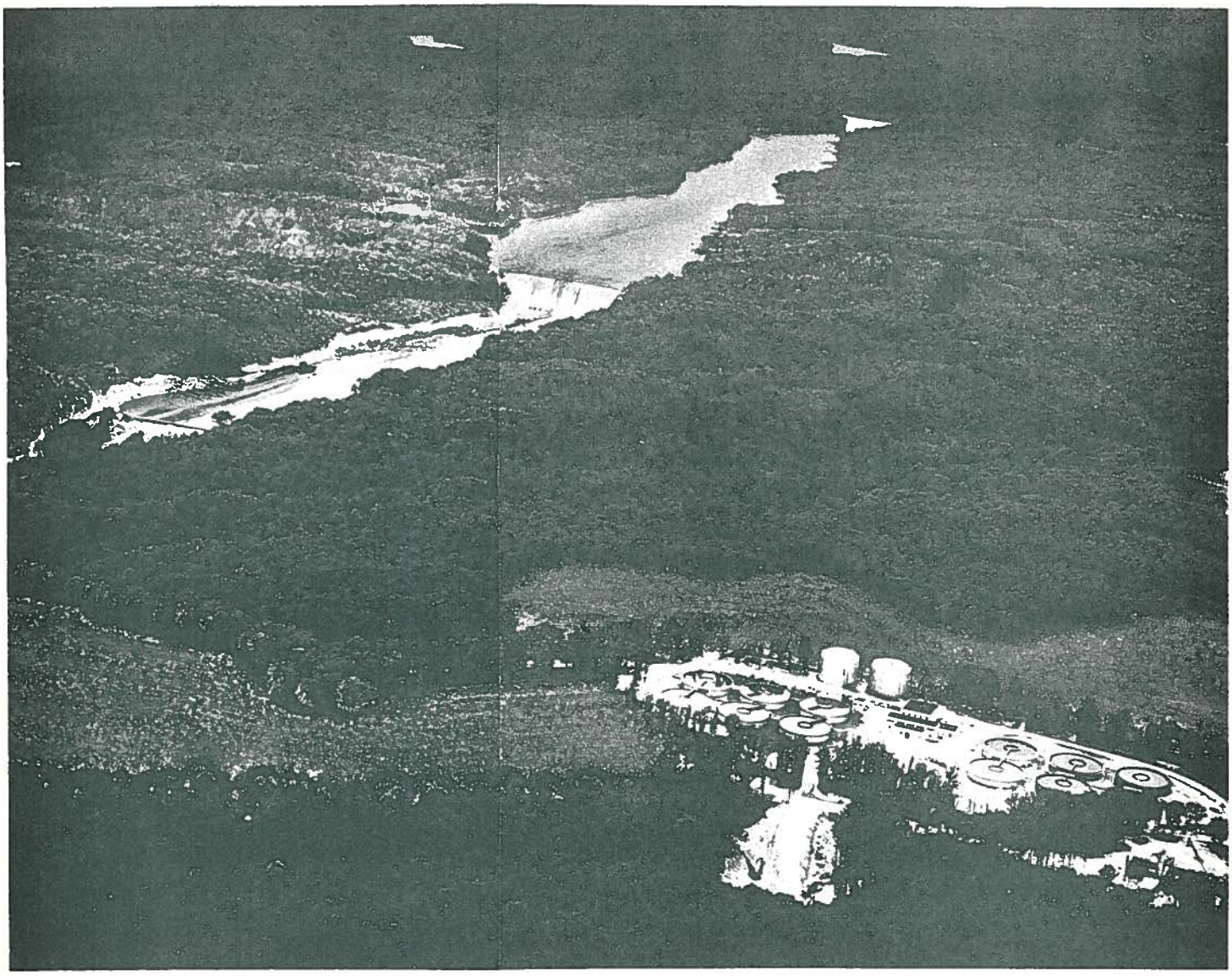
1965 - 123 Gallons
1980 - 132 Gallons
2000 - 132 Gallons

It appears doubtful that many new technological changes will occur to increase domestic water consumption within the City. It is also apparent that there will not be any significant increase in the number of industries demanding a large amount of water.

Thus, Occoquan Creek is fortunately available for the sole use of this area. The presently estimated dependable yield of this stream is 50,000,000 gallons per day. At an average per capita water consumption rate of 125 gallons per day, this reservoir is capable of supplying the average demands of 400,000 people in Alexandria City, Fairfax and Prince William Counties.

There are presently about 200,000 persons being served with Occoquan Creek water; thus a potential population of 200,000 additional persons will be servable from this existing reservoir.

An informal, but knowledgeable estimate by a water company official of the ultimate potential of the Occoquan Creek water system to supply future water needs has indicated that by increasing the capacity of the Occoquan Reservoir, by increasing the dam height, and by the strategic location of additional dams, the ultimate capacity of this water source could be increased to nearly three times its present capacity. Under these conditions it is feasible that potentially another 800,000 persons (total approximately 1,200,000 persons) could be served at 125 gallons per capita per day upon complete development of the Occoquan Creek water system. This again assumes that sufficient reserve would be available to meet maximum day demands.



This is The Alexandria Water Company's Occoquan Dam. It is situated 20 miles south of Alexandria. It stores 10 billion gallons of water and stretches upstream on Occoquan Creek some 16 miles. Another branch along Bull Run is six miles long. It covers a surface area of 1700 acres. It insures enough water to meet the growing needs of the community.

WATER TRUNK LINES

City of Alexandria, Virginia

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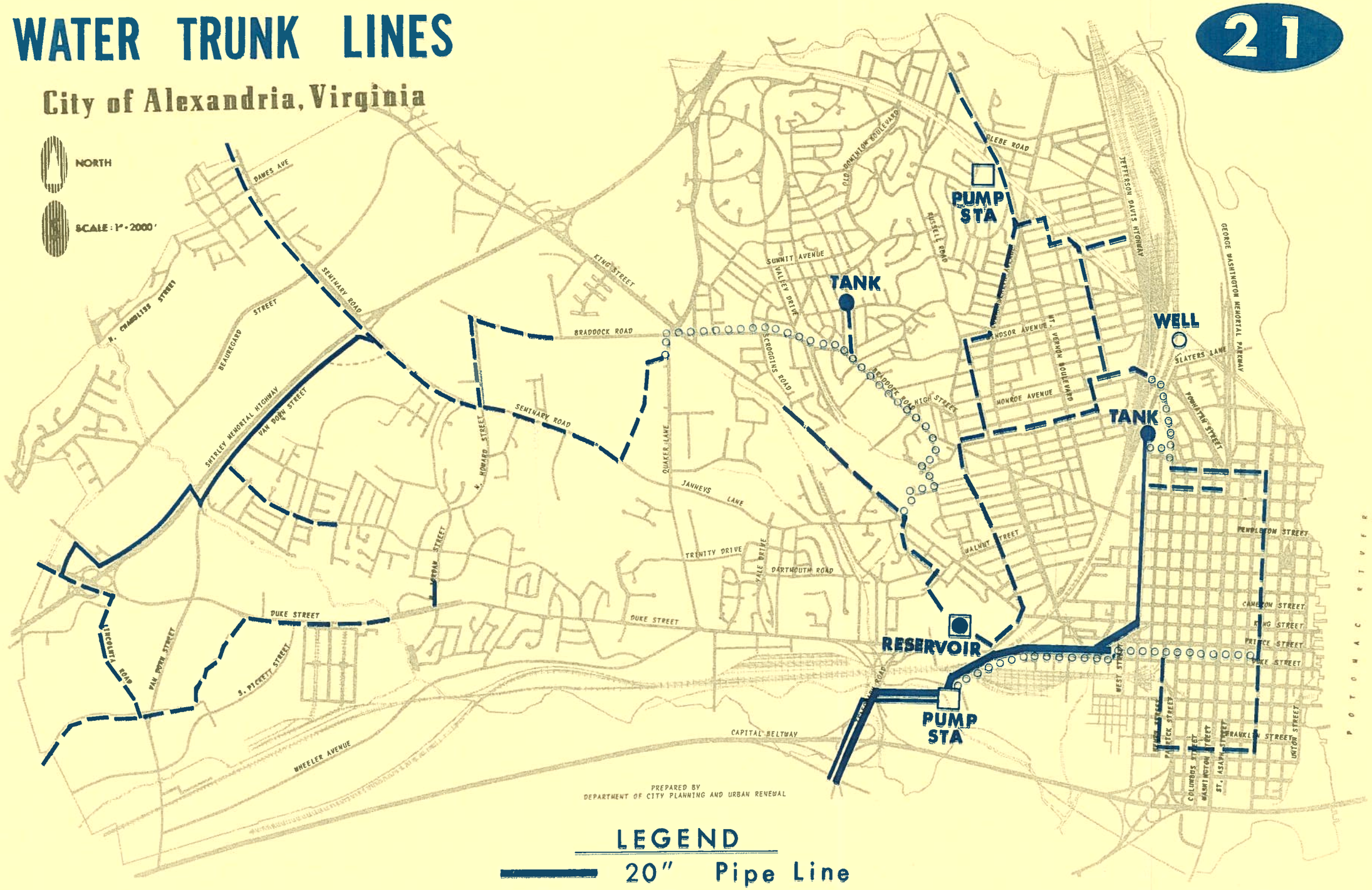
NORTH

SCALE : 1" = 2000'



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LEGEND

———	20"	Pipe	Line
———	16"	"	"
– – –	12"	"	"
ooooooo	10"	"	"

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GAS SERVICE

The City of Alexandria receives gas from the Washington Gas Light Company. Washington Gas receives its supply from two Atlantic Seaboard Metering Corporation stations located near Rockville, Maryland, and Dranesville, Virginia. To serve the Washington Metropolitan Area, a 16" high-pressure major feeder line extends from the Dranesville metering station to Alexandria via Route 7. This line continues down Quaker Lane. Five to thirty-five pounds per square inch gauge transmission gas lines extend from this major feeder line providing service to individual residences requiring gas.

The Washington Gas Company indicated that it is impossible to determine future service requirements unless information is available concerning exact amount of usage required. Population alone cannot be used to determine requirements for gas lines, while one residence might heat and cook with gas, another residence might heat with oil and cook with electricity. The company planners are positive that Alexandria has available or will have available a source and system to adequately serve the population requiring gas based on the Generalized Land Use Plan and resultant population distribution.

Unlike power companies, gas companies can reduce pressure by the use of regulator stations placed within small vaults underground, therefore, land use considerations regarding the transmission of gas are much less in importance than the location of power regulator stations. Gas regulator stations can be located almost anywhere in a community without adverse affects on property values nearby.

Transmitting gas from a source of supply to the user is accomplished by either of two systems in Alexandria. The old and historic section of Alexandria is composed of an extensive low pressure network of pipes leading to the users. The system found in the remaining sections of Alexandria is the transmission of gas through a network of high-pressure lines (5 to 35 pounds per square inch gauge) which are tapped by the individual users and the pressure regulators to 0.2 pounds per square inch, the same low pressure distribution system in old town.

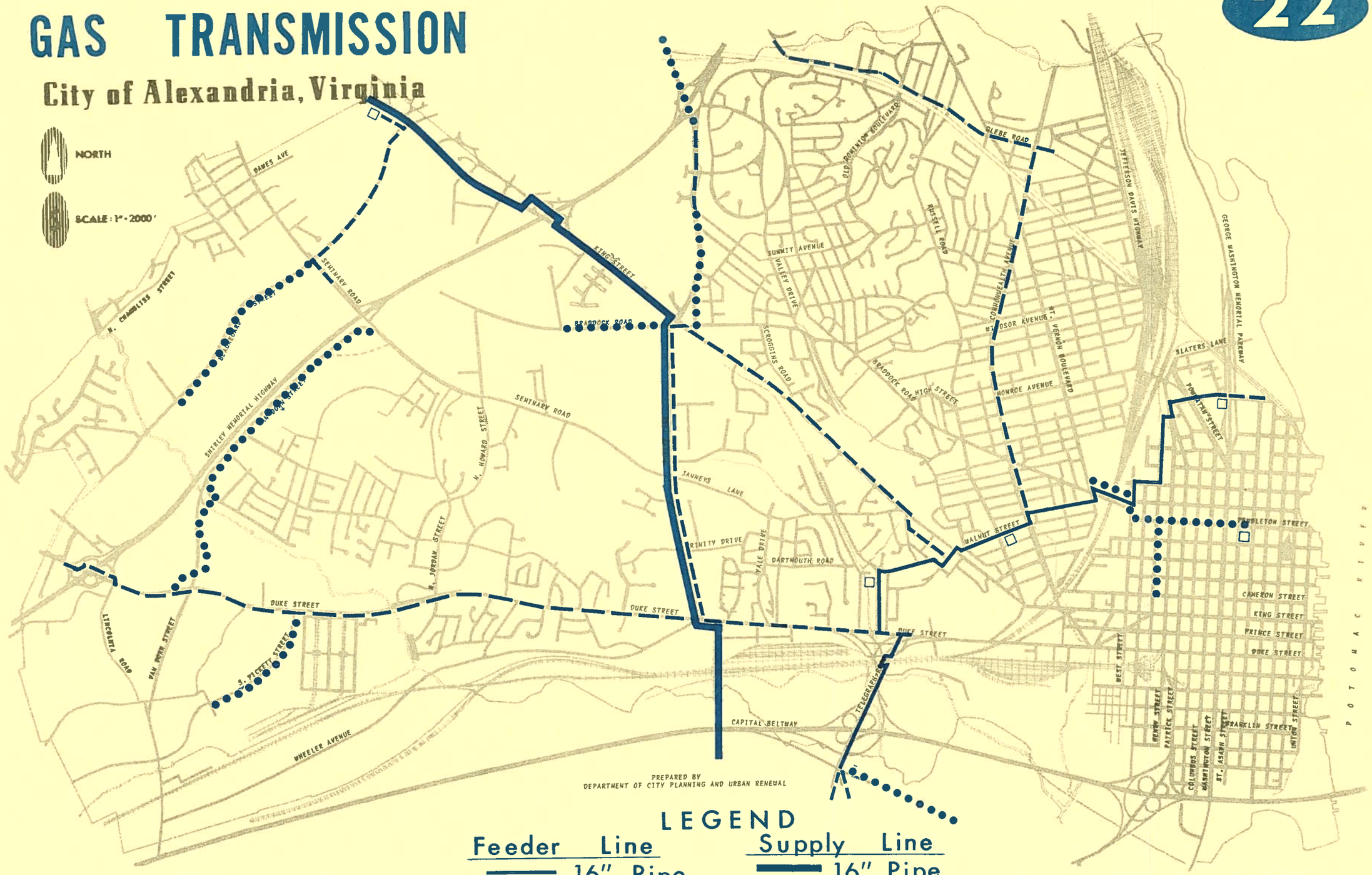
GAS TRANSMISSION

City of Alexandria, Virginia

22

NORTH

SCALE : 1" - 2000'



PREPARED BY
DEPARTMENT OF CITY PLANNING AND URBAN RENEWAL

LEGEND

Feeder Line		Supply Line	
———	16" Pipe	▬▬	16" Pipe
– – –	12" "	□	Regulator
•••••	8" "		

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GENERAL PRINCIPLES

Service Area

Service areas should be based on population density and topography. A multiplicity of small sewage treatment plants indicate a lack of coordinated area planning. The practice of constructing many small plants, each designed to serve only its immediate area, is less desirable and often more expensive than a few large plants designed to serve entire drainage areas. A comparison of the service area map with the map previously prepared for drainage and soil conditions will be helpful in determining (a) most logical locations of treatment facilities and service areas, and (b) areas where public sewerage is most needed due to soil conditions which preclude the proper operations of private septic tank systems.

Jurisdictional Area

Jurisdictional areas should be related to drainage areas and should reflect anticipated growth patterns.

Sewerage Master Plan

A sewerage master plan showing future needs and facilities is necessary in attacking the problem of urban growth. In areas currently without serious problems, such a plan will assist greatly in preventing future problems. Along with the master plan, a capital budget (long-range financial plan) is needed, in which expenditures are allocated for periods of several years. Both the master plan and the capital budget should be related to other community needs.

Expansion Needs

A sewerage system which allows flexibility to meet changing conditions is desirable. This can be accomplished by designing sewer sizes to handle both present and future needs, and by a treatment plant which will allow expansion at minimum expense. Where economics do not justify large sewer main construction in all areas, temporary storage chambers have been used until population densities warrent permanent trunk line installations.

Sewer Connection Requirements

When public facilities are available, connection to such a system should be required, since this allows better system planning. A determination is needed for availability, and a definite distance should be set.

Sewer Line Extensions

The community should have a definite policy for determining the method by which service extensions are made. Whatever method is used, it should allow extensions to be made where economic and health factors make this desirable.

The policy should include provision for extension of lines across vacant lots. This requires a decision as to the method

of payment or cost sharing. For over-sized lines designed to serve a large drainage area, a common method is for the government agency to pay the difference in cost between a sewer sized only for the immediate development area and the larger size which will be needed ultimately for the total drainage area.

Adequacy of Treatment

The community should provide treatment for all sewerage. In urban areas, the discharge of untreated sewage into the environment constitutes a definite health hazard. If such conditions exist, or if the present facilities do not provice treatment of all sewage, steps should be taken toward corrective measures for the community.

Sanitary and Storm Sewers

Disposal and collection of surface water run off are in the list of the important city services since they are the primary means of protection against flood damage. The area served by a storm sewer is equivalent to the drainage area, which is determined by topography. Storm water uses gravity to propel it to the intercepting sewer and to outlets.

The amount of water that must be taken into account when designing a storm sewer system depends on several variables, such as shape and area of watershed, ground shape, character of ground cover and rainfall intensity.

The relationship between character of land development and storm water run off determines the planning for a storm sewer system.

To establish the flow to be handled by storm sewers, careful study is made of past rainfall experience as measured by intensity, duration, and the resulting run off. Designing a storm sewer for the maximum flood is ruled out when economic costs are considered. The maximum flood means the biggest that would conceivable occur.

Therefore, it becomes necessary to establish what is called the "design frequency", that is, the recurrence interval during which a certain facility will be called upon to carry a storm flow equal to or in excess of its capacity. In other words, the design of storm sewers is based on the assumption that on relatively infrequent occasions a storm will occue that will result in a flooding.

Under certain circumstances, storm water could be controlled at least in part by recharge basins. The recharge basins are, in fact, temporary storage reservoirs that collect the surface water run off and replenish the ground water by absorbtion. As the City of Alexandria becomes more and more urbanized, with the accompanying spread of impervious surface materials, the amount of water that is returned to the soil will be reduced. Properly placed charge basins can to some extent offset depletion of ground water supplies.

SANITATION AUTHORITY

The City of Alexandria,

Virginia, Sanitation Authority, the first authority to have been created under the Virginia Water and Sewer Authorities Act of 1950, and created by the City Council of Alexandria on December 20, 1952, for the purpose of constructing, operating and maintaining a Sewage Disposal System to serve the City of Alexandria and such neighboring areas as proved to be economically feasible. The Authority is an independent, corporate, governmental agency administered by five members, who are appointed by the Council for staggered terms of four years each. Officers are elected by the members for one year terms.

The following report is taken in part from a previous report, prepared for the Department of Planning and Urban Renewal by the City of Alexandria, Virginia, Sanitation Authority.

General

The Sewage Disposal System was designed by Greeley and Hansen, Engineers, on the basis of population and flow estimates prepared by them and revised from time to time during the period 1945-52. The population figures used in the basic design are indicated in the table below. These do not include the population of the Upper Four Mile Run Area lying northwest of the Seminary between Seminary Road and King Street, which is, and will in all likelihood continue to be, served by the Arlington County sewage disposal system.

The Sewage Disposal System includes the Treatment Plant, three interceptor sewers, and two pumping stations. The interceptors and pumping stations are designed for the year 2000, and the Plant for 1973 at which time the connected populations from Alexandria and Fairfax County are expected to be 105,000 and 45,000, respectively. The Plant is arranged in such fashion that it can be expanded to serve the year 2000 population with relative ease.

The Treatment Plant and the Holmes Run Trunk Sewer are designed to serve a portion of Fairfax County as well as the City. Under a service agreement between the Authority and the County, approximately one-third of the present capacity of the Treatment Plant and two-thirds of the Holmes Run Trunk Sewer are reserved for county flows. For this the county is paying a proportionate share of the capital costs of joint facilities based on the capacities reserved for it, and shares in the operating expenses according to its actual use of the System. The capa-

Estimated Connected Population

Area	1955	1970	1985	2000
City of Alexandria	81,400	104,000	121,600	137,000
Fairfax County	--	34,500	69,500	95,000
Total	81,400	138,500	191,100	232,000

cities reserved for the County are in effect owned by the County and are not considered to be available for use by the City.

The Capacity of the Sewage Disposal System is determined by the maximum sustained quantity of sewage that can be collected, transported, and treated to predetermined standards. The time at which the ultimate capacity is reached depends not only upon the size of population connected to the system, but also upon the volume of sewage being generated per capita, including storm water infiltration, and industrial wastes. The present design of the System is based upon estimates of both population and per capita flows. If the per capita flows do not reach the expected amounts, the System will accommodate a larger connected population. The converse is also true.

The three intercepting sewers and two pumping stations were designed to accommodate the expected populations and flows in their respective drainage areas. Since the rate and characteristics of future development may vary rather widely from drainage area to drainage area, each is evaluated separately in this study. The Treatment Plant is also discussed apart from the rest of the System since its present capacity will be reached at an earlier date than the rest of the System.

Potomac Interceptor

The Potomac Interceptor begins at Second and Fairfax Streets and follows the Potomac shoreline to Jones Point where it turns and follows the Capital Beltway to the Treatment Plant. It serves the "Old Town" portion of the City bounded by the River on the east and a ridge line on the west running along Powhatan Street to Columbus, Columbus to Princess, and then diagonally to Hunting Creek. This area is served by a combined storm-sanitary sewer system and the Interceptor is designed to handle a substantial volume of storm water in addition to normal sanitary sewage.

The Potomac Interceptor was designed to serve a connected population of 25,000. The Planning Department projection for 1980-2000 is 17,000 persons. The existing facility should, therefore, be adequate through the year 2000 with a comfortable margin of safety.

Commonwealth System

The Commonwealth Station includes the Four Mile Run Pumping Station and force main, the Commonwealth Interceptor, and the River Road Pumping Station, force main, and connecting sewer. It serves the central section of the City bounded on the east by the Potomac watershed and Potomac Yards, on the westerly side by a ridge line starting at Shirlington and extending down Quaker Lane and King Street, and on the north by Four Mile Run.

The Commonwealth System as a whole was designed to serve a year 2000 population of 60,000. The Planning Department projection for the area is 52,300 persons and, again, the present system appears to be adequate.

Upper Four Mile Run

As previously mentioned, the Upper Four Mile Run Area, lying between King Street and Seminary Road above the Virginia Theological Seminary comples, is not physically connected to the Sewage Disposal System of the Authority. It is, however, served by the Arlington County system under a service agreement between the Authority and the County.

As a result of the current trend toward high-rise apartment development in the area, the population is expected to increase nearly ten-fold in the next 20 to 40 years. This is considerably in excess of the forecasts upon which the design of the Arlington County facilities were based, but at this time it is not known when or to what extent expansion will be required. Studies are currently in progress on this matter.

Holmes Run Trunk Sewer

The Holmes Run Trunk Sewer begins at the western city limit, and follows Holmes Run and Cameron Run to the Plant. It serves all of the city west of King Street with the exception of the Upper Four Mile Run Area discussed above. As previously mentioned, the Holmes Run Trunk Sewer also receives flows from Fairfax County through three metered connection points with a parallel county trunk sewer.

The growth in this area, particularly to the north of Shirley Highway and to the west of Duke Street in the vicinity of Lincolnia Road, is expected to exceed substantially the predictions upon which the design of the sewer was based. Although the Trunk Sewer is designed for a total population of 190,500, capacity for only 50,500 is available to the city. The new Planning Department figure for the area is 71,200 persons.

However, as stated earlier, evaluating sewer design on the basis of numbers of people only can be misleading if per capita flow contribution is not also taken into account.

The design of the Trunk Sewer as a whole contemplates that the average daily flow will be 151 gallons per capita, or a total of 7.6 million gallons from the city. Due to the nature of the expected development and experience to date with actual flows, it appears possible at this time that 151 gallons per capita per day may not be reached. The new population projection contemplates a much higher percentage of multi-family units than did the design projection and this will tend to reduce the overall per capita flow contribution. Also, actual flows received at the Treatment Plant in the past six years have averaged about 85 gped as compared with the predicted figure of 135 to 140 for the period 1955-1970. If the future rate does not exceed 107 gped, it is possible that the lower sections of the sewer will accommodate the expected population of 71,200.

If growth in the upper portions of the Holmes Run watershed proceeds as presently anti-

cipated, the upper sections of the Trunk Sewer will reach capacity considerably in advance of the lower sections even at a reduced per capita flow contribution. The following table below illustrates this.

The Back Lick Run sub-shed lying west of Cameron Station between Duke Street and the R.F.&P. tracks, although tributary to the Holmes Run Trunk Sewer, should be mentioned separately here. The area is presently served by a Fairfax County sewer which connects to the county's Holmes Run trunk line paralleling the Authority's Trunk Sewer. Substantially all of the sewage from this drainage area is considered to enter the Authority System at the Quaker Lane metering station inasmuch as the total volume received from the county trunk at this point exceeds the volume of city flow entering the county sewer. The county has given assurances that sufficient capacity in their Back Lick Run sewer will be made available to the Authority to handle the ultimate flows expected from this portion of the city.

Treatment Plant

The Treatment Plant is located on South Payne Street at Hunting Creek. It present dry-weather capacity is 18 million gallons per day of which 12.6 MGD is available for city sewage. This will serve 105,000 persons at the design rate of 120 gallons per capita per day. Again, the design rate may not be reached and more than 105,000 people may be connected before the Plant becomes overloaded. At 100 gped, which is 15 gped greater than the current average rate, 126,000 persons could be served. If the present conservative use of water in the area continues, there is reason to believe that expansion of the Treatment Plant will not be necessary before the scheduled date of 1973.

Summary

An ultimate population of 180,000 will be reached in Alexandria in the period 1980-2000. The Sewage Disposal System of the Alexandria Sanitation Authority was designed to serve a year 2000 population of 150,000. The

Section	Cumulative Capacity MGD* Avg.	Peak	Population @151 gped**	@107 gped**	1980-2000 Cumulative Estimate
City Limit to Shirley Highway	1.0	4.0	6,600	9,400	22,988
Shirley Hwy. to BackLick Run	3.1	12.2	20,500	29,000	40,718
BackLick Run to Quaker Lane	6.3	21.0	41,700	58,900	63,693
Quaker Lane to Trt. Plant	7.6	22.8	50,500	71,200	71,198

* Million gallons per day ** Gallons per capita per day

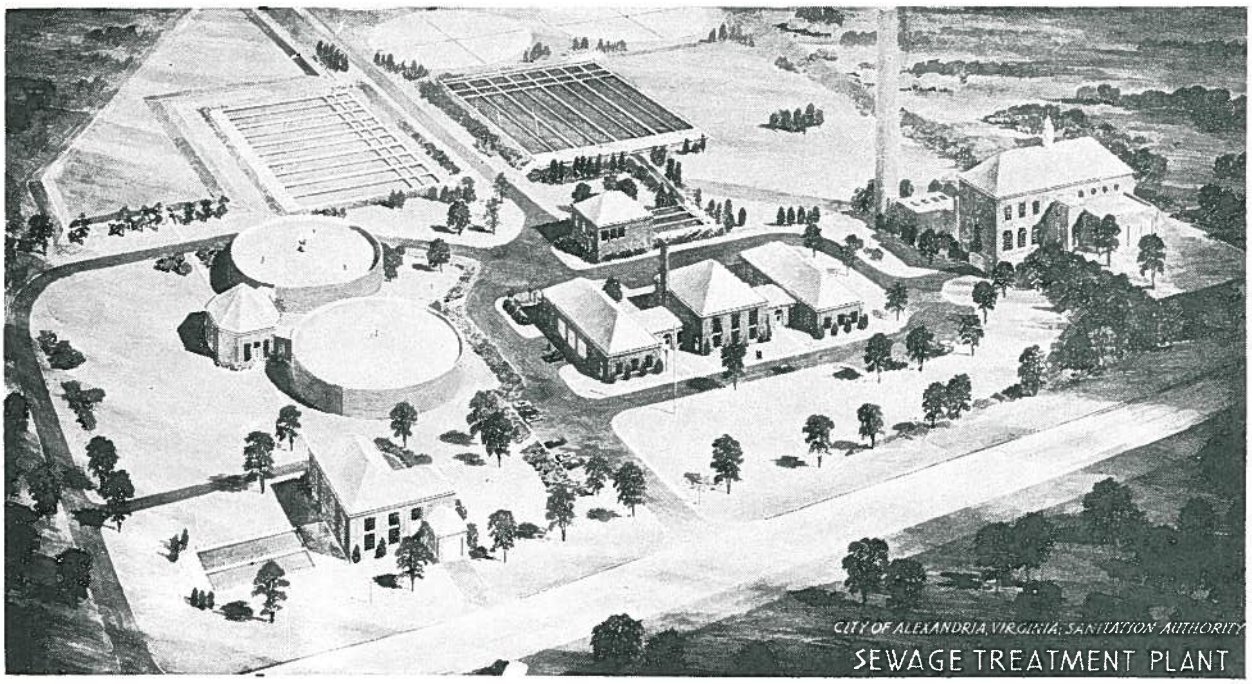
heaviest growth is expected to take place in the western half of the city, whereas growth in the eastern portion will in general be less than the predictions upon which the design of the Sewage Disposal System was based.

The Potomac Interceptor and the Commonwealth System, including the Commonwealth Interceptor and the Four Mile Run and River Road Pumping Stations, have adequate capacity to handle the ultimate population in their respective service areas.

It is presently planned that the Upper Four Mile Run watershed will continue to be served by Arlington County and that the Authority will participate financially in any future expansion of county facilities required to handle the additional load. It is likely that expansion will be required in the near future.

The Holmes Run Trunk Sewer serves the area of heaviest anticipated growth. Present trends indicate that the design rate of flow contribution per capita may not be reached which may permit the lower portion of the sewer to absorb the additional load. However, the upper sections, particularly north of Shirley Highway, will reach capacity well ahead of the design date and will require major expansion.

Present long range plans call for expansion of the Treatment Plant in approximately 10 years. If present water usage trends continue, it is possible that the Plant will be able to handle the predicted population increase without earlier expansion.



CITY SANITARY SEWER SYSTEM

As far as can be determined the first sanitary sewers constructed in the city were in the late 1800's or early 1900's and since that time an estimated 200 miles of sanitary sewer construchas taken place. It is estimated, at the present time, over 10,000 connections have been made to the sanitary sewer system and it is obvious that more than this number of connections have actually been made since some of the connection permits are single permits for a large number of dwelling units in multi-family developments. At the present time about 95% of the dwelling units in the City are served by sanitary sewer with the remaining 5%, which lie mostly in the western part of the City, either served by septic tanks or outside privies. The sewer system is constantly being extended as new development occurs but it will be sometime before the entire city is served by sanitary sewer.

The first sewers constructed in the city were of combined type carrying both sanitary sewage and storm flow and this construction was continued for that area of the city which lies east of the R. F. & P. tracks. However, with very minor exceptions all of the construction to the west of the tracks has been separate sanitary and storm sewer systems and the present agreement between the city and the Sanitation Authority provides that no further combined sewers be constructed west of the R. F. & P. tracks. The combined system east of the R. F. & P. offers a considerable problem to the city since in time of heavy storm flow a considerable amount of sanitary sewage is bypassed directly into the river through two main overflow structures, one at Pendleton Street and one at Royal Street. The elimination of these combined sewers in this area would have two advantages; fire, it would eliminate the discharge of raw sewage into the Potomac River in time of heavy storms thus reducing the pollution load on the river; and second, it would eliminate basement flooding which occurs in these areas during times of heavy storms when the combined sewers fill up due to storm flow, causing backup into existing basements through the sanitary sewer connections. However, it is conservatively estimated that it would cost at least ten million dollars to separate the present combined sewer system in the old part of the city. It is obvious that this will be a very long term project since it involves construction of new storm or sanitary sewers, reconnection of existing houses to the new sewer where a sanitary sewer is constructed to replace the present combined sewer and the rebuilding of a great many streets where the streets would have to be torn up to do the necessary construction on the new sewers.

Generally speaking the following major drainage areas are served by major trunk line sanitary sewers: (a) the Canal Valley area lying in the northeasterly portion of the old town north of Pendleton Street and east of the R. F. & P. Railroad. (b) The

Tan Yard ditch area lying generally south of Prince Street and east of Henry Street. (c) The downtown business section running from Prince Street to Queen Street and bounded on the west by Pitt Street. (d) The Hooffs Run Area portion of the old city west of Washington Street to the R. F. & P. Railroad. (e) The Timberbranch drainage area whose backbone is a major trunk line up Timberbranch from Hooffs Run and extending from Hooffs Run at Commonwealth Avenue to the southerly portion of Parkfairfax. (f) The Clyde Avenue trunk line which generally serves the old town of Potomac and the Del Ray area and feeds into the Four Mile Run trunk which in turn feeds into the pumping station at the north end of the Commonwealth interceptor of the Sanitation Authority. (g) The Four Mile Run trunk line which parallels Four Mile Run and serves Parkfairfax, Beverley Hills and the adjoining area and feeds into the Commonwealth interceptor through the pumping station at the north end of that interceptor. (h) The King Street Hill-George Washington Park line serving the George Washington Park area and a portion of Rosemont by a trunk line on King Street connecting to the Hooffs Run trunk at King and Commonwealth. (i) The Taylor Run trunk line serving generally the area immediately to the south and west of the King Street and Timberbranch areas and bounded on the west generally by Quaker Lane and on the north generally by King Street. (j) The Ft. Williams Park area served by a trunk line from the Holmes Run interceptor to Quaker Lane and generally including the area from Quaker Lane westward to the easterly side of the Shirley Duke Apartments. (k) The Shirley Duke system which serves Shirley Duke and the area immediately to its north and bounded on the north by Quaker Lane. (l) The Pegram Street line which runs from Holmes Run to Quaker Lane along the general line of Pegram Street serving Brookville, Seminary Valley and the Hammond High School. (m) The east branch of Lucky Run which serves the area from Quaker Lane to Shirley Highway and empties into the Arlington County Four Mile Run trunk sewer. (n) The Lucky Run main trunk line serving the area north of Seminary Road and west of Quaker Lane to the city limits and discharging into the Arlington County system. (O) The Dowden Terrace line which generally follows a ravine through the Terrett property and serves the entire Dowden Terrace subdivision or that portion of the City north of Holmes Run, south of Quaker Lane, and west of Ramsey School. (p) The proposed Beauregard Street line which will serve the remainder of the tract owned by Winkler and by Alward and lying between Ramsey School and the Shirley Highway from Holmes Run to Quaker Lane. (q) The south Beauregard Street line proposed to be constructed to serve the area generally west of the Shirley Highway, south of Holmes Run and bounded on the south and west by the city line and including connections for Lincolnia Hills into the Holmes Run interceptor. (r) The so-called Detention Home trunk sewer which serves the area west of the Quartermaster Depot to Lincolnia Road or south

Van Dorn Street bounded on the south by Backlick Run and on the north by Duke Street. (s) The proposed trunk line from Backlick Run through the Alexandria Industrial Park to Stevenson Avenue to serve the area west of Lincolnia Road from Backlick Run to Shirley Highway. These major trunk line areas, of course, have many tributary subtrunks and a portion of the various areas are served directly by the interceptor lines. The attached map will indicate the extent in general of the trunk line system.

STORM SEWER SYSTEM

The city has constructed, over a period of years, an extensive storm sewer system which is, of course, combined with sanitary sewage in the portion of the city east of the R. F. & P. Railroad but is a separate system in that portion of the city west of the Railroad. Generally the main trunk line storm sewers follow the trunk line sanitary sewers mentioned previously and serve generally the same drainage areas. The storm sewer system varies in size from a minimum of 15 inch pipe to a maximum of 5' x 20' culverts in the Hooffs Run area. There are a number of areas, notably in the area west of Quaker Lane, in which storm sewer systems have not been constructed and which will have to be sewered in the near future. It is estimated that approximately 200 miles of storm sewers including the combined sewers in the downtown area are now in existence and under maintenance by city forces.

Storm sewer design in the city has generally been based on a ten to thirteen year frequency of flood occurrence based on the assumption that floods occurring at greater intervals, which would be of a greater intensity, occur so seldom that it is not economically feasible to design for such longer term storm flows. It is perfectly feasible, of course, to design for 25, 50 or 100 years time but as the frequency of the design storm increases the empirical factors involved become less subject to scientific determination and the cost of construction of facilities to accommodate such storm flows at such great intervals is not feasible compared to the damage which may be done by an occasional overload of the storm sewer system.

The downtown area of the city has approximately 2,700 catch basins connected to the existing combined sewer system and leading storm water flow from the gutters into the combined system. No accurate count has been made of storm water inlets in the area west of the railroad but it is estimated that at least 3,000 catch basins exist in this area which again lead the water from the street gutters into the storm water system. As the city develops, the extension of the storm water system will, of course, increase the number of inlets required and likewise increase the maintenance cost involved in cleaning such inlets and storm sewers.

RECOMMENDATIONS AND SUMMARY OF STORM AND SANITARY SEWER SYSTEMS

1. The city should begin

planning for the complete elimination of the combined sewer system in the downtown area, recognizing the fact that this is a long term, high cost project which will take many years to complete. Some beginning has already been made on this phase of the Tan Yard Ditch sewer where new sanitary sewers have been constructed along South Royal Street

2, A long range integrated plan of construction for storm sewer facilities in those areas which the city does not now have such facilities should be commenced.

3. A thorough review of the present policies with relation to construction cost on both storm and sanitary sewers should be initiated and the necessary ordinances passed to implement any change in policy which may be recommended by the City Manager and adopted by the City Council. Present policies with respect to storm sewers are somewhat fluid and depend to a great extent upon the particular problem involved in each individual case. Policies with respect to sanitary sewers, however, are set forth in ordinance and are fairly well defined.

SANITARY SEWER LINES

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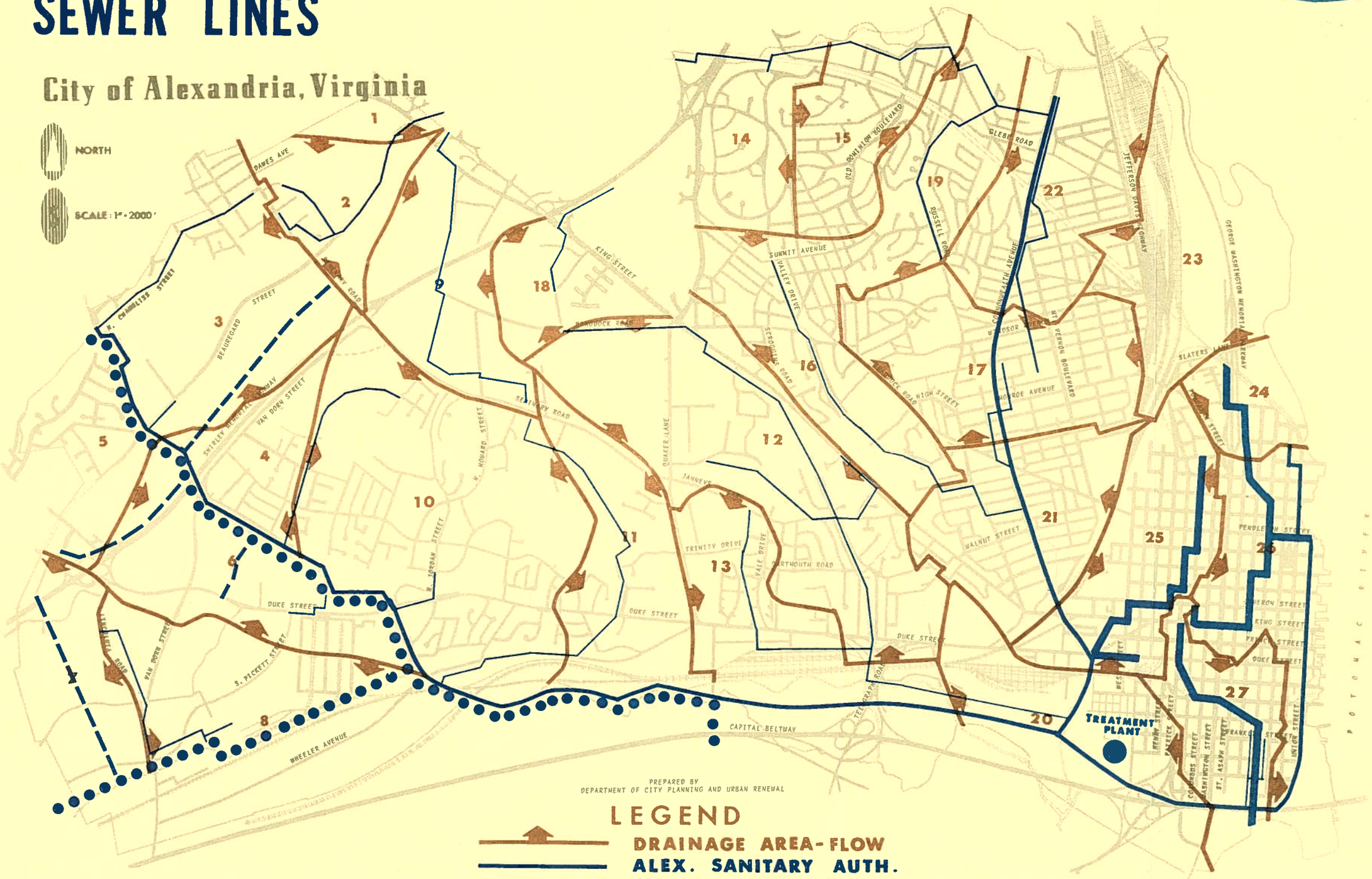
City of Alexandria, Virginia



PREPARED BY
DEPARTMENT OF CITY PLANNING AND URBAN RENEWAL

LEGEND

- DRAINAGE AREA-FLOW
- ALEX. SANITARY AUTH.
- COMBINED SYSTEM (Storm & Sanitary)
- CITY SANITARY
- FAIRFAX CO. LINE
- CITY PROPOSED

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THE CRITICAL YEARS

When examining the rate of growth in Alexandria, it becomes evident that the city is experiencing a surge in construction greatly exceeding the measures being taken for furnishing adequate community facilities, especially in the allied fields of parks, recreation, schools and libraries. This is only natural during periods of rapid development; however, in the case of Alexandria, if the building boom continues without greatly increasing the rate of public land acquisition during the coming three years, the city might well find itself unable to provide these facilities at desirable locations and, most likely, incapable of providing public property in the amount recommended in this report.

In April, 1960, the United States Bureau of Census reported 91,023 persons residing within the City of Alexandria and by April, 1963, it was estimated from issuance of building permits that the city had reached the 100,000 mark, indicating that in only three years, the city's population increased almost 10 percent, most of which settled in the Shirley Memorial Highway area, and there is every indication that this rate of growth will continue, perhaps, at an accelerated rate.

The Planning Department has processed 24 approved apartment project site plans, during the past 10 months prior to May, 1963, which combined, include in excess of 3,300 apartment units, and an additional four apartment projects were approved in May, 1963, consisting of 1,189 dwelling units.

Although apartment developers provide some open space in their projects, the amount is not nearly enough to satisfy standards in this report. A few cities in the country require developers to dedicate adequate park land within their project areas or contribute to the acquisition of park land nearby to serve their projects. Court decisions on the validity of this matter vary from state to state.

Fairfax County recognizes the need for open space as described in their report entitled "Vanishing Land". Among the proposals of their report is the recommendation to amend state law allowing counties to reserve land for park use for a five year period, during which time the land remains tax free. Alexandria could endeavor to expand such proposed legislation to include cities. If this were accomplished, the city would forstall development and thereby have additional time to bring Alexandria up to standards.

In total approximately 310 acres of private vacant land is recommended for park and school acquisition in Alexandria at an estimated cost of $7.7 million. Approximately one-half of this land is eligible for 20 percent federal financing under Title VII of the latest revised "Federal Housing Act", which might reduce the cost of land acquisition borne by the city by approximately $0.8 million.

It is strongly recommended that the city concentrate on land acquisition during the next three years in an effort to obtain the private land recommended in this report before development takes place.

A P P E N D I X I

BIBLIOGRAPHY

"1962 Annual Report", Fire Department, Alexandria, Virginia.

"Public Libraries Analysis", Northern Virginia Region, Northern Virginia Regional Planning and Economic Development Commission, July, 1962.

"Police Protection Analysis", Northern Virginia Region, Northern Virginia Regional Planning and Economic Development Commission, July, 1962.

"Water Resources, Phase II", Northern Virginia Region, Northern Virginia Regional Planning and Economic Development Commission, September, 1962.

"Public Parks and Recreation, Survey and Analysis", Northern Virginia Region, Northern Virginia Regional Planning and Economic Development Commission, June, 1962.

"Fire Protection, Present and Future Needs", Northern Virginia Region, Northern Virginia Regional Planning and Economic Development Commission, October, 1962.

"Public Land and Facilities", Northern Virginia Region, Northern Virginia Regional Planning and Economic Development Commission, September, 1962.

"Statement of Need and Proposed Program and Budget for a Day Care Center", Alexandria Community Welfare Council, April, 1959.

"Day Care for Children in the National Capital Area", Health and Welfare Council of the National Capital Area, October, 1961.

"Planning the Neighborhood", American Public Health Association, Committee on the Hygiene of Housing, Public Administration Service, 1960.

"Virginia Medical Facilities Survey and Construction Plan", Bureau of Medical and Nursing Facilities Services, State Department of Health, Commonwealth of Virginia, 1963 Revision.

"Neighborhoods and Traffic", Oscar Sutermeister, October, 1960, Issue of Traffic Quarterly.

"Street Engineering", Page 9 - 11, September, 1961.

"School Sites, Selection, Development and Utilization", U. S. Department of Health, Education and Welfare, Office of Education, Special Publication No. 7, 1958.

"Local Planning Administration", The International City Manager's Association, Third Edition, 1959.

"Water Resources", Northern Virginia Region, Northern Virginia Regional Economic and Planning Commission, September, 1961.

"Teamwork on the Potomac", Interstate Commission on the Potomac River Basin, Washington, D. C., 1958

"Water Resources Development in Virginia", U. S. Corps of Engineers, Norfolk District, North Atlantic Division, January 1, 1957.

"Guidelines For Library Planners", Proceedings of the Library Buildings and Equipment Institute, American Library Association, 1960.

"Traffic Engineering Handbook", Institute of Traffic Engineers, 1950.

"How to Get the Most Out of Our Streets", Transportation and Communication Department, Chamber of Commerce of the United States, Washington 6, D. C.

"Municipal Recreation Administration", International City Managers Association, Revised Edition.

"Water Resources of Northern Virginia, Phase I", Northern Virginia Regional Planning and Economic Development Commission, March, 1960.

"Sewage Disposal in Northern Virginia", The Problem and Solution, Arlington County, Virginia, October, 1955.

"Report on Sanitary Sewers and Waste Water Disposal in the Washington Metropolitan Region", Abel Wolman and John C. Geyer, John Hopkins University, Baltimore, Maryland, 1962.

"Volunteer Service Handbook", Alexandria Community Welfare Council, 1962.

"Enrollment in Public and Nonpublic Elementary and Secondary Schools 1950-80", U. S. Department of Health, Education and Welfare, U. S. Government Printing Office, Washington, 1962.

"People, Land and Livelihood", Northern Virginia Region, Northern Virginia Regional Planning and Economic Development Commission, Hammer and Company Associates, Washington, D. C., December 14, 1959.

"Economic Base Survey of the Potomac River Service Area", U. S. Department of Commerce, Office of Business Economics, U. S. Government Printing Office, Washington, D. C., 1961.

"A Study of Community Recreation in Alexandria, Virginia", National Recreation Association, August, 1957.

"Long Range Recreation Plan, Alexandria, Virginia", National Recreation Association, 315 Fourth Avenue, New York, New York, November, 1944.

"The Vanishing Land", Fairfax County Planning Division, Fairfax County, Virginia, 1962.

"On Wedges and Corridors", A General Plan for the Maryland-Washington Regional District, The Maryland-National Capital Park and Planning Commission, October 1, 1962.

A P P E N D I X II

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Alexandria City Public Schools

418 SOUTH WASHINGTON STREET • ALEXANDRIA • VIRGINIA

April 26, 1963

Mr. Everett Weitzell, Chairman
City Planning Commission
605 North Overlook Drive
Alexandria, Virginia

Dear Mr. Weitzell:

As Superintendent of Schools new to the Alexandria community, I felt it necessary to absorb as much information about Alexandria as possible. One of the first persons I talked with was the acting Director of City Planning, Mr. Francis Kenny. By good luck on my part and as a result of much effort on the Commission's part, and certainly Mr. Kenny's part, I was able to read the "Preliminary Park and School Plan" issued by the Department of City Planning in December 1962.

This is one of the best studies I have seen in my experience as School Superintendent. As a matter of fact, the report bolstered our own preliminary survey re the immediate necessity for the T. C. Williams High School and the immediate necessity for a new elementary school in the Polk Avenue neighborhood. A study of our own enrollment trends as of the middle of March 1963 confirmed the forecast of the report. If anything, there appears to be a slight acceleration with the construction of Hamlet East, Hamlet West, Americana, Shirlington-Van Dorn, Kent-Lincolnia and Holmes Run Parkway. Perhaps you want to know that we are constructing sixteen classrooms as an addition to Ramsay with hope that these rooms will be ready by September 1963. A neighborhood count on a house to house basis, made by the principal of the school and some of the staff, indicates that thirteen of these rooms will be occupied by September 1 by new children in this area. The Hammond High School needs eleven additional teachers with an opening enrollment of approximately 2,250 students. The overall school system has increased approximately 500 students since March 1962. Our enrollment of today is approximately 16,300 as against last year's enrollment of 15,700.

More important is the comprehensive nature of the report and the highlighting of the needs for parks, recreation and the mutual use idea of school playgrounds in connection with recreation.

I am glad that the problems of Alexandria are problems of growth. Problems of growth lend themselves to dynamic thinking and an opportunity for a community to think in positive terms. The history of this community and the kind of people who live in Alexandria and the sizable population, now exceeding 100,000, are assets which can be used to keep this community the finest city in Virginia.

I would be remiss if I did not pass these sentiments on to you.

With personal greetings.

Very sincerely,

John C. Albohm
Superintendent of Schools

JCA:eed

"Home Town of George Washington and Robert E. Lee"

CITY OF ALEXANDRIA

VIRGINIA

May 10, 1963

Mr. Everett C. Weitzell, Chairman
Alexandria City Planning Commission
Alexandria, Virginia

Dear Mr. Weitzell:

The Park and Recreation Commission of the City of Alexandria, Virginia, wishes to indicate its unanimous recommendation that the Alexandria City Planning Commission advise the City Council, for the City of Alexandria, Virginia, to immediately adopt the philosophy, and accept the principles and standards, as described and illustrated in the "Preliminary Park and School Plan, Part I of the Community Facilities and Services Plan", dated December 1962, and that the City Council, for the City of Alexandria, should proceed at this time to develop the objectives, and establish, create and maintain the facilities in accordance with the policies that are set forth in the said plan, Part I.

The Park and Recreation Commission will be available to cooperate in the development, establishment, evaluations, and location, in an advisory capacity or in any other way believed to be feasible in carrying out the policies as set forth in said plan, Part I.

The Park Commission further recommends that the City concentrate on park and school land acquisition immediately to assure proper amount and location of facilities as described by the report.

Very truly yours,

Robert N. Roley, Chairman
Park and Recreation Commission

"The concept of the public welfare is broad and inclusive..... The values it represents are spiritual as well as physical, aesthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well balanced as well as carefully patrolled."

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