

CORPORATION OF THE DISTRICT OF BURNABY

North-East Burnaby Study
Revised Simon Fraser Townsite Plan

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SYNOPSIS

Following a brief introduction the report is presented in six parts. Part I is a summary of the more important developments which have taken place in the area since 1964. Part II examines the existing conditions within the study area in text and map forms, including the existing land use pattern, existing zoning, land ownership and existing roads and services. Part III is largely an expansion and review of the general information contained in the Simon Fraser Townsite Report prepared by Project Planning Associates in 1964. Part III reviews the concept for the master plan proposed by Project Planning Associates and Part IV describes the concept of a revised plan prepared primarily as a result of developments described in Part I. Also included is an analysis of the major items which together make up the plan such as commercial centres and industrial areas, neighbourhood structure and school locations, park system, and major roads and trails. The implementation of the plan and the proposed staging of development is discussed in Part V and finally, general recommendations are contained within Part VI. Since this report is a review of the 1964 Simon Fraser Townsite Plan both reports should be considered concurrently. In Parts II and III of this report where survey information has been included in the 1964 Townsite Report, the description in this report is kept brief to avoid unnecessary duplication.

INTRODUCTION

SCOPE AND PURPOSE OF STUDY

The Simon Fraser Townsite report prepared by Project Planners in 1964 presented a comprehensive land use plan for "the land contiguous to the university site", which provided a "systematic organization of land uses and circulation systems related to site topography, climatic conditions and housing needs which has been predicated on a particular relationship between a university and its surrounding urban environment". In the two years that have elapsed since the preparation of this plan, policy decisions have been made regarding North-East Burnaby which have altered the development concept envisaged in the plan.

The fundamental requirement that a plan for Burnaby Mountain be approached in a comprehensive fashion means that major changes in the original concept cannot be undertaken without a review of the structure and pattern of land development for the entire area. The purpose of this report is therefore to assess the changes which have occurred since the preparation of the Simon Fraser Townsite Plan and to prepare a revised concept plan for North-East Burnaby which restates the planning proposals contained in the original plan as well as providing new guidelines for future growth.

Much of the general information on existing conditions supplied in the Simon Fraser Townsite Plan is unchanged and is equally applicable to a revised plan. In order that Council can give consideration to the proposal in principle the plan is presented in an outline or concept form only. Implementation of the plan will require the preparation of detailed development plans.

When dealing with planning proposals at a broad policy level it is not possible to consider any portion of the municipality in isolation without placing a limitation on the comprehensiveness of the study. Since the development of North-East Burnaby is closely tied to other parts of the municipality and the metropolitan area in general, a plan for this area is most meaningful if it becomes an integral part of an overall municipal plan. In preparing the revised plan, certain assumptions have been made regarding the road and land use pattern in other parts of the municipality which affect the study area. The proposals set forth in this report will therefore need to be tested in relation to the major road and land use plan for the municipality which in turn will be related to plans for the metropolitan area. Similarly, the optimum demands for commercial and industrial uses in the area may in future necessitate further adjustments and modifications to the plan. The plan will however provide a good base for further development in North-East Burnaby and it can and should form part of a future outline plan for the whole municipality which is reviewed and revised when necessary to meet changing conditions.

It must be emphasized that this report is a review of the Simon Fraser Townsite Plan, and the revisions which are proposed are preliminary in nature. A comprehensive plan of this scale is meaningful only if the process of implementation can be carried forward. Its success depends upon the close co-operation of all organisations, agencies and land holders affected by the proposals. Once Council has reviewed the study and is able to give approval in principle to the preliminary proposals it is recommended that a copy of the report be forwarded to the organisations or agencies listed below in order that they may study the plan and add their general observations and specific comments.

Burnaby Advisory Planning Commission
Burnaby Parks and Recreation Commission
Burnaby Ratepayer Organisations
Burnaby School Board
Simon Fraser University
District of Coquitlam
City of Port Moody
City of Vancouver
Lower Mainland Regional Planning Board
Greater Vancouver Sewerage and Drainage District
Greater Vancouver Water Board
British Columbia Hydro and Power Authority
Provincial Government
a) Department of Highways
b) Department of Municipal Affairs
Federal Government
Department of Natural Resources
Western Pacific Projects Limited
Shell Canada Limited
Trans Mountain Oil Pipeline Company

STUDY AREA BOUNDARIES

For the purposes of this report, North-East Burnaby is defined as the area bounded by Burnaby Lake on the south, Burrard Inlet on the north, North Road on the east, and Kensington Avenue on the west. In the Simon Fraser Townsite plan as well as past reports which dealt with development in the Burnaby Mountain area, the study area was otherwise defined; since the chief area of concern at that time, was with that part of the municipality

which had experienced little or no intensive development.

The Townsite plan prepared in 1964 defined the study area as that area which roughly extends around the base of Burnaby Mountain (elevation 1200 feet) and is bounded by Lougheed Highway on the south, North Road on the east, Barnet Road and the Burrard Inlet on the north and Duthie Avenue on the west.

The area between Lougheed Highway and Burnaby Lake, referred to as the Government Road area is included in this report. A separate plan for this area was prepared in 1959 but subsequent changes in the land use pattern suggest that its inclusion is warranted. Although the area is separated from the major portion of the study area by the Lougheed Highway, the Government Road area is an integral part of the main topographical and geographical division which stretches from the central valley to the Burrard Inlet. Furthermore, Burnaby Lake is a major land use which provides a physical barrier to land development and access in a southerly direction. The selection of Kensington Avenue as the western boundary of the study area has the advantage of relating the undeveloped area on the southern and western slopes of Burnaby Mountain to the developed area west of Duthie. Also in terms of the disposition of major roads in the municipality, Kensington Avenue has been considered as a possible alignment for a major north-south route which offers a logical western boundary to the study area.

PART I SUMMARY OF MAJOR DEVELOPMENTS IN NORTH-EAST BURNABY

A number of developments in the northeast portion of the municipality in recent months has necessitated this revision of the consultant's plan. The magnitude of some of these developments which include construction of Simon Fraser University, new road locations, preliminary work on a major commercial centre and approval of apartment area plans has considerably modified both the basic road structure and land use pattern in the area. Each of these developments will be referred to later in the main body of the report, however the following is a brief review of the major changes which have necessitated the preparation of a revised Simon Fraser Townsite Plan.

1. LOUGHEED MALL SHOPPING CENTRE

The decision to establish a regional shopping centre at the intersection of North Road and Lougheed Highway has substantially altered the focal point and structure of the Simon Fraser Townsite plan. The new Regional Shopping Centre will displace the Simon Fraser Townsite proposed in the 1964 master plan for Burnaby Mountain as the principal commercial core area for the university and the surrounding residential areas. We can assume that the development of the Lougheed Shopping Centre is assured, in which case, a further Townsite on the southern slope of Burnaby Mountain will have little chance of survival since two major centres in close proximity to one another would be detrimental to both.

2. APARTMENT AREAS

The apartment study prepared by the Municipal Planning Department in February 1966 proposed that multiple family

development be concentrated in areas near commercial, community, and recreational facilities. The increased densities at these points would reinforce the principal commercial centre at North Road and Lougheed; the district centre serving the western sector of Burnaby Mountain; and the community and neighbourhood level centres at the east end of Hastings Street and at Bainbridge - Lougheed respectively. The proposals for the North Road and Lougheed Centre also involved modification of the plan for the eastern portion of the Government Road area.

3. SIMON FRASER UNIVERSITY

Simon Fraser University, located on the summit of Burnaby Mountain, is basically unchanged in location, form and orientation from that illustrated in the Simon Fraser Townsite report. The completed portion of the easterly access road from Lougheed Highway to the university follows an alignment generally as shown in the Townsite Plan, although the location of interchanges and grade separated crossings at intersecting streets requires revision in order that feeder streets may better serve the relocated commercial centre at North Road and the major population concentrations in the area south and west of Burnaby Mountain. The westerly university access road connects to Curtis Street at the lower end of Centennial Way at present but it is ultimately planned to connect to Hastings Street in order to best serve traffic approaching the university from the west and northwest.

The student-staff population at Simon Fraser University has nearly doubled since its commencement in 1965. During the

1965 fall semester the student population was 2,558 while enrollment in the fall of 1966 reached 4,200. During the same period the staff increased from 468 to 823. These figures indicate that the 1971 projected student staff population of 8,500 contained in the 1964 Simon Fraser Townsite Report may be conservative.

The creation of an "instant" university, and its continued rapid physical expansion coupled with the dramatic increase in student enrollment and staff over a one year period, has an immediate impact on the demand for housing and related facilities in the proximity of the university. Recent meetings with members of the university staff and student representatives indicate that a programme to provide for the location of staff and student accommodation is being investigated. It is clear that a development policy must be established which satisfies both the requirements of the university and the municipality within an overall framework. This suggests that accommodation for staff and students of the university and the facilities which accompany it become part of an integrated development for the community. Students, staff, and municipal residents will gain from this interaction which has always been an objective of Simon Fraser Townsite planning although the physical expression has not been modified in terms of the location of areas of commercial and residential concentration.

4. MUNICIPAL GOLF COURSE

The first public golf course within the municipality is presently under construction immediately west of Phillips

and north of Broadway in the vicinity of the Eagle Creek ravine. The boundaries of the course are altered from that proposed in the 1964 Simon Fraser Townsite plan, which proposed an elongated site for the Golf Course from Broadway northwards to the university access road. The course was bisected by one of the proposed arterial east west roads and since the steep slopes on the northern portion of the proposed golf course created numerous problems in terms of grading, clearing and drainage, a more consolidated site was selected at the base of Burnaby Mountain. It is planned that the first 9 holes of the 18 hole golf course will be ready for use during 1967.

These major developments referred to above and the continued expansion of the Lake City Industrial area places continued emphasis on the need for a development plan for North-East Burnaby which can relate all parts of the plan to the whole.

The growing demands of the metropolitan population exerting pressures to expand into undeveloped areas of the municipality such as North-East Burnaby makes organised use and development of such land essential. This can best be achieved within the framework of a general plan which provides for growth on a step by step basis and which is flexible enough to adjust to changing requirements.

PART II EXISTING CONDITIONS

Maps 1 to 8 of this report illustrate in general terms information concerning topography, land use, zoning, ownership, road and rail, and services.

1. TOPOGRAPHY

The higher land formation which extends in an east west direction across the municipality between the central valley and Burrard Inlet creates a sharp and easily recognizable topographical division bounded by water or low lying areas on both the northern and southern boundaries. In the study area itself, the land rises steadily from the central valley to the summit of Burnaby Mountain which is an elongated relatively flat plateau which runs roughly on an east west axis and reaches an elevation of approximately 1,200 feet.

The escarpment on the north face of the mountain falls sharply from the summit towards the Burrard Inlet with less steep slopes along the shoreline of the inlet.

The slopes encountered on the western and southern face of the mountain vary between 15% and 30% whereas much of the eastern slope and nearly all of the north slope exceeds 30%. Map No. 1 illustrates the areas with moderate and steep slopes.

The southern slope of the mountain is cut by numerous water courses which drain towards the central valley and into two major ravines in the area, Stoney Creek ravine to the east and Eagle Creek to the west. The central valley is largely peat

land with an underlay of soft silt clay of variable depth. Burnaby Lake, a large shallow drainage basin which lies in the peat land of the valley drains via Brunette River into the north arm of the Fraser River.

2. LAND OWNERSHIP

Much of the land within the study area is held in large areas by government bodies, related institutions, or private firms. The municipality owns large parcels on the western slope of the mountain south to Broadway, a large block on the eastern boundary in the vicinity of Broadway, and most of the area immediately surrounding Burnaby Lake. The area of these lands owned by the municipality is approximately 1,133 acres. The land presently owned by Simon Fraser University which covers approximately 1,200 acres on Burnaby Mountain was transferred to the University by the Corporation shortly after the summit of Burnaby Mountain was selected as the site for the University. The actual University boundaries are still to be finalised. Both the Federal government and the City of Vancouver have fairly substantial holdings in the area. The City of Vancouver property which contains approximately 180 acres lies north of Broadway on the south slope of the mountain. The Federal government owns one site of approximately 84 acres on the north face of Burnaby Mountain fronting the C.P.R. rail track on the Burrard Inlet as well as an area of approximately 79 acres immediately south of Burnaby Lake between the lakefront and the freeway.

Approximately 527 acres of land in the area are owned by Western Pacific Projects Limited. This includes most of the area bounded roughly by Lougheed Highway, Eagle Creek ravine, Broadway Avenue and Stoney Creek ravine as well as small sites north of Broadway and south of the Lougheed Highway.

Trans Mountain Pipeline and Shell Oil Company own parcels north of Broadway and west of the City of Vancouver property of 190 acres and 109 acres respectively.

The remainder of the study area is made up either of small parcels under private ownership, or as shown on Map 2, land owned by related government institutions such as the School Board and holdings of major utility companies.

3. RESIDENTIAL DEVELOPMENT

As shown on Map 3 the existing residential areas are mainly extensions of existing built-up urban areas to the east and west of the study area. Extensive residential development on the west terminates at approximately Duthie Avenue while the area adjoining North Road is closely related to development in Coquitlam. The isolated area south of Lougheed has experienced considerable residential development in recent years, mainly along established streets, although subdivision of some larger parcels has taken place. Slightly more than one half of the Government Road area which is zoned for low density single family use has been developed.

The large blocks and rigid grid pattern in the area between Kensington and Duthie have determined residential growth in

this area. Development is largely peripheral, along the established north-south and east-west roads with dwellings located on large deep lots. Some subdivision has taken place in the interior of these blocks. The undeveloped areas shown within the blocks on Map 3 indicate those areas which have subdivision potential based on the existing single family or two family zoning. The area bounded roughly by Halifax, Phillips, Pandora and Hastings is zoned for two family (R4) development although the actual two family use is not extensive. The area south of Halifax to Broadway is zoned single family R2 as is the area bounded by Cameron Street, North Road, Broadway and Lake City Industrial area. The large R2 zone between North Road and the Simon Fraser access route is undeveloped west of Stoney Creek ravine.

Reference to Map 4 shows that more than one half of the study area covering virtually all of the steep slopes of Burnaby Mountain from Phillips to North Road and Barnet Highway to Lougheed Highway in the western section is zoned for Small Holding use. The A2 zone is interrupted only by the large industrial zones on the south slope of Burnaby Mountain between Arden Avenue and the easterly Simon Fraser access route. The Small Holdings zone in a portion of the area from Cameron Street south to the Trans Canada Highway experienced scattered residential development on large acreages. Similarly, some of the large parcels in the A2 zone between Broadway and Lougheed are occupied by dwellings, although small lot subdivision and ribbon residential development has taken place on both the north and south side of Broadway west of Duthie. The estimated average density in the area zoned for residential use is approximately 2.47 persons per acre.

4. COMMERCIAL DEVELOPMENT

At present, facilities for shopping are fairly limited in this section of the municipality. The two principal locations where these facilities are provided are at the intersection of Hastings and Sperling and at North Road and Loughheed. The Hastings Street shopping area is compact, with the greatest concentration in the two blocks between Grove Street and Duncan Avenue, although a supermarket has been recently constructed at Kensington and Hastings. The commercial area contains a number of personal service shops, food stores, speciality shops and offices. In the vicinity of North Road and Loughheed Highway, an area of approximately 35 acres has been zoned to accommodate a regional shopping centre. Although not yet under construction, the Centre is planned to consist of a major department store, a junior department store, cinema, library, skating rink, restaurant, a number of variety and speciality stores, and offices. When fully developed the total retail, office and recreational floor area in the Loughheed Mall will be about 300,000 sq. ft. with parking for 2,000 cars. This is roughly equivalent in floor area to the Brentwood Shopping Centre. Expansion of the Centre north to Cameron Street is proposed with the bulk of the Centre site fronting on North Road and the Austin Street extension. The existing Cariboo Shopping Centre and the additional existing shops along North Road, north and south of the Loughheed Highway serve the surrounding areas in Burnaby and Coquitlam.

5. INDUSTRIAL

A total of 5,265 acres or 21% of the area of Burnaby is

zoned to Industrial use. Of this total, 1,130 acres are within the study area. This acreage represents 21.4% of the total industrial zoned land in the municipality. Approximately 50% of the industrially zoned land within the study area has experienced intensive industrial development, the uses ranging in type from the water and rail oriented heavy industries located on the Burrard Inlet to Light Manufacturing within the M1 and M2 areas south of Lougheed Highway.

The Lake City Industrial area north of Lougheed has been developed at its western end and is expanding eastward. Of the 413 acres of industrially zoned land in the Lake City industrial estate, approximately 161 acres are developed. The Trans Mountain and Shell Oil Tank Farms occupy sites totalling approximately 300 acres on the southern slope of Burnaby Mountain. The Shell Oil tanks occupy about one third of the total site along the easterly boundary while the area to the west of the tanks is undeveloped.

With the exception of the small section of park at Barnett Beach the entire Burrard Inlet waterfront within the boundaries of the study area is zoned for industrial use, although industrial development on this section of the waterfront is limited by lack of land area between the C.P.R. track and the shoreline, and difficult topography.

The industrial zone in the Government Road area is located parallel to the C.N. and G.N. rail line although only two of the developed industrial sites are serviced by rail spurs.

Of the present industrially zoned land in the area less than 50% is intensively developed.

6. PARKS AND SCHOOLS

The developed residential areas within the boundaries of the study area are served by a total of 6 elementary schools and junior and senior high school facilities located at Kensington. Three elementary schools are located in the western sector, two in the eastern sector and one in the south which serves the Government Road area. As part of Municipal and School Board planning policy two of the school sites are combined with park sites to provide joint facilities. The site area, existing school enrolment, and present capacity for each elementary school are listed below.

<u>Sector</u>	<u>School</u>	<u>Site Area (acres)</u>	<u>Enrollment</u>	<u>Present Capacity</u>
Western	1. Westridge	*7.3	545	576
	2. Lochdale	*6.1	360	432
	3. Sperling Avenue	8.3	460	576
Eastern	4. Lyndhurst	3.8	190	252
	5. Cameron	6.2	150	216
Southern	6. Seaforth	5.0	300	396

*Combined School Park Site.

Five local neighbourhood and community parks are located in each sector.

Sector Park Area

Western	1. Westridge	2.5 acres
	2. Halifax	3.7 acres
Eastern	3. Bell Avenue	1.8 acres
Southern	4. Charles Rummel	25 acres
	5. Warner Loat	4 acres

On a municipal and metropolitan level, a large portion of the area surrounding Burnaby Lake and the land parallel to and north of Brunette River is zoned park but peat conditions have limited the development and effective use of the park area.

Before the establishment of Simon Fraser University on the top of Burnaby Mountain, the plateau and the majority of the mountain slope was planned for park development. A large park area and park pavilion has been developed to the west of the summit along the high ridge which extends westward toward Barnet Road overlooking Indian Arm and Burrard Inlet.

In terms of related park use the most significant recent development is the creation of an 18 hole golf course at the base of the south western slope of Burnaby Mountain. The golf course which is presently under construction occupies a site of approximately 150 acres in the area bounded roughly by Phillips, Broadway, Halifax Street and Arden Avenue. Eagle Creek ravine originates near the north boundary of the golf course and cuts through the centre of the site. Access to the golf course is from Halifax with clubhouse facilities planned in the centre overlooking the ravine and an artificial lake.

7. ROADS AND RAILROADS

The Trans Canada Highway which skirts Burnaby Lake to the south serves fast through traffic on a metropolitan and regional level. At present, the only access provided to north-east Burnaby from the Freeway is at Sperling Avenue interchange and at Stormont interchange. The Stormont interchange is connected to Cariboo Road on an interim basis until the freeway link to the Lougheed Highway and the Simon Fraser University access is completed.

The two other major east west roads which serve intermunicipal traffic are Lougheed Highway and Barnet Road. Barnet Road connects Port Moody with Burnaby following an alignment around the northern base of Burnaby Mountain. It connects with Inlet Drive and Hastings Street and proceeds into Vancouver. The Lougheed Highway interconnects Vancouver, Burnaby, Coquitlam and Maillardville.

In terms of north-south roads, the only intermunicipal connection is North Road which is located on the eastern boundary of the municipality. This road serves local through traffic between Port Moody, Coquitlam, Burnaby and New Westminster.

The easterly access to Simon Fraser University from the Lougheed Highway to the summit of Burnaby Mountain was completed in 1965 and the westerly access route to the University connects temporarily with Curtis Street at Centennial Way. A portion of the ring road that circumscribes the university site has been completed and clearing has commenced on the eastern section of the ring road.

The local streets are basically an extension of the grid pattern although in a modified form adjacent to North Road and in the subdivision off Barnet Road at the north end of Duthie. These modifications are largely dictated by topographical conditions in each area. The pattern of local streets in the interior of large blocks is generally incomplete and designed in such a way as to prevent through traffic movement. The roads shown on the accompanying Map 5 are constructed to municipal standards, either paved to full standard with curbs; 20' asphalt cap; or surfaced with gravel.

Two national and regional rail lines pass through the study area. The Canadian National and Great Northern rail line bounds Burnaby Lake on the north. A spur track meets the main line east of Cariboo Road and underpasses the Lougheed Highway to serve the Lake City Industrial Development. The Canadian Pacific rail line parallels Burrard Inlet between Barnet Road and the waterfront.

8. SERVICES

a) Sewers

As shown on Map 6 most of the properties in the built-up areas are served by sanitary sewer. The catchment areas on the southern slopes flow towards the central valley; are picked up by secondary trunks on Duthie, Eagle Creek ravine and Stoney Creek ravine and fed into the main Greater Vancouver Trunk sewer along the C. N. right-of-way and Brunette River. A new trunk line extends up the eastern side of Burnaby Mountain to serve

the university and a secondary trunk is planned from the North Road Shopping Centre to connect with the Brunette Trunk.

The sewer catchment areas north of Curtis and Union feed directly into Burrard Inlet on a secondary trunk line. The area on the steep western slope of Burnaby Mountain between Inlet Drive, Hastings and Phillips, has a combined storm and sanitary sewerage system.

b) Water

Map No. 7 shows Municipal water lines and the main water lines of the Greater Vancouver Water District which is responsible for supplying water to the Metropolitan area. A 300,000 gallon reservoir is located on the north slope of Burnaby Mountain and a Greater Vancouver Water District reservoir is located on the south slope near Shellmont Avenue. Four pumping stations on the south and west slopes provide water to land uses on the mountain; three of the stations to the west serve Trans Mountain Tank farm, Centennial Park and the residential area east of Inlet Drive, and one station to the south east pumps water to a new storage tank on Burnaby Mountain which serves Simon Fraser University.

c) Easements

As Map No. 8 graphically illustrates, the entire southern slope of Burnaby Mountain and the area adjoining Stoney Creek ravine is bisected by numerous service easements, overhead power lines, gas lines

oil lines, and sewer easements that all merge and intersect near the Transformer station on Broadway. The power line which runs along Stoney Creek ravine is supported on steel pylons while the remainder of the overhead lines are on twin wooden poles.

The master plan prepared by Project Planning Associates in 1964 set out to establish a comprehensive plan for the undeveloped areas contiguous to the university and to create a development pattern which would cater to the needs of the students and staff generated by a major university as well as to the needs of the residents of the municipality and the surrounding urban area.

The 1964 concept for the Simon Fraser Townsite is described in detail in the consultant's report and need not be repeated here. However the main principles of the consultant's plan can be summarized as follows:

1. A MAJOR CULTURAL AND COMMERCIAL CENTRElocated in the middle of the southern slope of Burnaby Mountain, "proximate enough to the university that it could minimize the degree of isolation inherent in a mountain top university". The compact centre would accommodate a range of shopping facilities on three pedestrian shopping levels served at the periphery by multi level parking structures.
2. A CONVENIENCE SUB CENTRE.....located in the western sector adjoining the Golf course consisting of local shops to serve surrounding residents and various institutional uses. This centre and the surrounding area is basically separated from the main town centre by an industrial zone which bisects the south slope.

3. A SERIES OF NEIGHBOURHOOD UNITS....."each preserving a district relationship with access to local and regional transportation systems and each linked to its own elementary school by pedestrian walkways."
4. HIGH DENSITY RESIDENTIAL DEVELOPMENT.....surrounding the town centre and sub centre diminishing in density outward from each centre. A range of housing types are proposed from high rise next to the major centre linked by plazas and walkways to the commercial area and horizontal multiple flats or town houses in the medium density areas.
5. A CONTINUOUS PARK AND OPEN SPACE SYSTEM.....which "ascends the slopes from the central valley, through the major ravines and water courses of the mountain, to the town centre and continues past it to the campus and park on the summit". In addition to the park strips which delineate uses, park buffers are proposed to separate residential areas from industrial uses.
6. A SYSTEM OF MAJOR ROADSwhich converge on and define the major town centre. Vehicular access from Simon Fraser University to the Town Centre is provided from the university access route originating at Stormont interchange. The two principle arterial roads running east-west carry vehicular traffic past the centre and serve adjoining high density residential areas and industrial zones.

PART IV REVISED SIMON FRASER TOWNSITE PLAN

The Burnaby Mountain area is one of the few remaining large tracts of land in the Burrard peninsula that has not experienced extensive developed area. The pressures of urban expansion into the undeveloped area created by a rapidly expanding metropolitan population has received a further stimulus with the establishment of Simon Fraser University on Burnaby Mountain, and the plan attempts to recognize these forces and their impact upon the rate of development.

The revised plan for North-East Burnaby is based on an overall concept which meets the anticipated future land use requirements and at the same time reflects the existing development pattern and natural physical characteristics which are encountered in the area. Many of the natural features such as steep slopes, deep ravines, water courses, variable soil conditions and vegetation present limitations to development but they can also offer unique possibilities if these natural qualities are recognized and utilized to the fullest extent.

The pattern of land use which has already been created by roads, railways, service lines, easements, built-up areas, principle uses, and ownership must be recognized together with the influence that such a pattern has in a direct or indirect manner upon the overall development concept.

The revised plan expresses many principles which are similar to the 1964 Simon Fraser Townsite Plan, although the development pattern has been altered to reflect recent developments as well as a reconsideration of some of the difficult aspects

of the townsite plan.

1. GENERAL CONCEPT

The concept plan for North-East Burnaby shown on Map No. 10 proposes a belt of built up land circumscribing the south slope of Burnaby Mountain between the large regional park in the central valley and the park and university complex on the mountain. This urban belt inter-connects the developing areas of north Burnaby and the District of Coquitlam to the east. Six broad land use categories are indicated in the plan; residential, commercial, industrial, parks, schools and the university campus. The residential areas shown within this urban complex are planned to accommodate approximately 50,000 - 60,000 persons or roughly one quarter of the municipal population projected at full development under present densities. Because of the strong topographical limitations imposed by Burnaby Mountain and the Central Valley, the pattern created by roads, major uses and residential units has a strong east-west orientation.

Traversing the south slope of the mountain along the principle ravines are two continuous park strips which link the proposed park area around Burnaby Lake with Burnaby Mountain Park which encompasses the university campus site. The major industrial area is bounded by major roads to the north and south, by the ravine park and golf course to the west and the university access road to the east.

A major commercial and institutional centre is proposed in the south eastern sector and a district or sub centre

in the west. These centres are served by major arterial roads running in an east-west and a north-south direction.

Residential densities increase and intensify near the commercial centres, and related to each centre and the surrounding residential areas are high school and recreational facilities, which are incorporated into the ravine park system.

Each of the surrounding residential neighbourhoods is served by an elementary school, a neighbourhood park and local shops.

2. GENERAL ANALYSIS

a) Commercial Centres and Related Uses

As shown on Map No. 11 the plan envisages the development of a range of centres with the major urban town centre in the vicinity of the North Road and Loughheed Highway. This centre can provide principle shopping, recreational, and cultural facilities, and related institutions and uses to serve the urban population in the eastern section of Burnaby and a large part of Coquitlam. Such a town centre will provide a level of service similar to the Simpsons Sears area on Kingsway and the Brentwood and Hastings Street areas to the west. The proposed Loughheed Mall and the existing Cariboo Shopping Centre in Coquitlam establishes the core for the town centre. Although a centre in this location weakens the direct link between town centre and university envisaged in the Simon Fraser Townsite plan, the

revised plan recognizes the need to serve both a resident population and the staff and students of a major university.

At its ultimate capacity the university is expected to accommodate an estimated 20,000 to 22,000 students and staff. It is difficult at this stage to estimate the number of students and staff members who may require accommodation in reasonable proximity to the university; however a figure of 7,200 persons or 1/3 of the university population has been suggested in a recent Preliminary Report on Analysis of Students Residence Program prepared by Howard Abelman.

Assuming that 1/3 of the student and staff population is a reasonable estimate, this represents 12% to 15% of the total projected population for North-East Burnaby when the area is entirely developed.

With a shift in location of the major town centre from the south slope of Burnaby Mountain to North Road approximately three quarters of a mile east of the Simon Fraser access route on Lougheed Highway, the convenience sub centre proposed in the western sector in the Simon Fraser Townsite plan assumes greater importance in terms of the residential area to be served and its relationship to Simon Fraser University. Thus the district centre proposed immediately west of the golf course, is considerably expanded in size over that proposed in the Simon Fraser Townsite report although its location is basically the same.

The existing shopping facilities at Hastings Street and Sperling and two possible local centres supplement the town and district centres by providing facilities at a community and neighbourhood level.

Since the optimum size of each centre cannot be readily determined, some flexible expansion of facilities in each order of centre must be provided. However, with a development policy that emphasizes concentrated centre development as illustrated in the plan and a road pattern that reinforces each centre on a descending scale, scattered and ribbon development can be avoided.

By means of interconnecting malls and plazas each part of the centre can be related as the successive stages of centre development takes place.

A build up of residential densities is proposed around each commercial centre with the highest densities and the most extensive apartment area adjoining the major centre at North Road and Loughheed Highway. The residential densities proposed near the district centre are of an overall medium density type as is the proposed apartment area adjoining the Hastings Street commercial centre, although a variety of multiple family units of a low density type is also desirable in proximity to both the major centre and the district centre. The concept for apartment development and the related densities is discussed in considerable detail in the apartment study and the proposed multiple family areas are basically as they appear

in that study. However additional expansion is proposed near the town centre at North Road and near the district centre to the west. Such expansion can accommodate an estimated 1,500 to 2,000 units. As part of a long range proposal the revised plan also proposes a neighbourhood centre on the south slope with an adjoining multiple family area related to park and school site. On the basis of estimated densities contained in the apartment report, the multiple family areas near the North Road centre will accommodate an estimated population of 12,000 while about 7,500 people can be accommodated in the multi-family area near the district centre.

Population concentrations at or near the major centre reflect the higher order land use, reinforce the centres, and provide the majority of residents with a variety of community and shopping facilities close at hand.

b) Neighbourhood Structure

The principle of providing a definite neighbourhood structure to which can be related the educational, recreational and commercial facilities that serve the residents in an area, is of major importance in the development of an area whether the area be built-up or undeveloped. As shown on Map 12, the neighbourhoods proposed in the study area are as far as possible defined by either major roads, rail lines, non-residential uses or natural barriers such as ravines and water courses. Each neighbourhood has an elementary school and neighbourhood park located

near its geographical centre. Ideally, the size of each neighbourhood unit is determined by residential densities and a maximum walking time of from ten to fifteen minutes to school, playground or park.

The neighbourhood boundaries proposed in the plan are generally within one half mile radius of the elementary school and neighbourhood park. However, because of the limitations of topography and existing development the size and shape of each neighbourhood unit varies considerably and as a result the school enrollment, number of classrooms, size of playfield etc. will also vary. Based on the projected density estimates, school enrollment will be between 350 and 700 students in each of the neighbourhoods proposed. Although the Chant Report recommended a desired optimum of 600 pupils per school the generally accepted range within the municipality is 400 to 800 pupils per school.

Since the neighbourhoods are generally bounded by major roads, children can walk to school in reasonable safety. In instances where school areas lie on two sides of a future major or minor arterial road, grade separated pedestrian crossings are proposed. In order to create optimum safety and a measure of residential amenity within each neighbourhood a system of park walkways is proposed that will link the residential areas to the elementary school and neighbourhood playground. These park strips provide the pedestrian with a

minimum of disturbance from motor vehicles and have the added advantage of relating active and passive park areas. In the neighbourhoods bordering the major metropolitan park, regional park, or ravines, the walkways and park strips are extended to provide a continuous system of neighbourhood and municipal parks. Where varying densities occur within a neighbourhood the park strip and park areas may define the zones of varying densities in order to buffer and to preserve the character of each type of residential accommodation as well as provide pedestrian access to commercial centres. The principle of segregated pedestrian accesses has been applied successfully in many new towns in both North America and Europe, and with a system of loop roads, and cul-de-sacs that provide vehicular access to the dwelling units, a separate pedestrian system can be established in the interior of the neighbourhood.

Two proposed high schools serve a number of neighbourhood units, and the high school sites are combined with district playing fields and park facilities, in order to provide flexibility in use and expansion. The proposed junior high school to the west is planned for an estimated enrollment of 1400 to 1500 students while the combined junior senior school located near the North Road centre serves a catchment area to the east which may produce an enrollment of 1000 to ¹⁵⁰⁰3000 students. Each high school is located on a site adjoining major roads for easy access by public transit

and automobile.

c) Major Park System

Two major municipal and regional parks are proposed for North-East Burnaby; one located on the slopes of Burnaby Mountain bounded on the interior by the proposed ring road that defines the university campus and on the exterior by Barnet Road and the Simon Fraser access routes; and the second surrounding Burnaby Lake, bounded by the freeway to the south and the G.N. rail line to the north. These park proposals are well known and have been recommended in the past, both in the park sites report prepared in 1961 and by the Regional Planning Board in 1966. In the case of Burnaby Mountain Park this was also proposed in the 1964 Simon Fraser Townsite Master Plan.

Although the park proposal for Burnaby Mountain has altered considerably since the creation of Simon Fraser University; the development of a peripheral park site around the campus is still most desirable both from the standpoint of the university and the municipality as a whole. When developed, it can provide passive recreation for students and residents of the municipality generally. At present, some areas of the mountain are extensively used as horse trails and with further development the use could be extended. While the steep slopes on portions of the north and east faces of the mountain make development prohibitive; the eastern slope can be readily used for

hiking while the gentler slopes to the south and west could be used for a number of park uses either for regional purposes or related directly to research by the university such as forestry, geology, climatology, agriculture, etc.

Burnaby Lake has for a number of years been considered as a potential park area but the severe peat condition has limited the possibility for park development even though much of the lake frontage has been zoned for park purposes. A thorough investigation and a very comprehensive report prepared by Associated Engineering Limited indicates that long range development of the area surrounding Burnaby Lake is possible although extensive use for bathing is not economically feasible. With dredging, careful filling and planting some areas of the lake could be developed for beach and the lake itself for rowing and sailing. Developed in an imaginative fashion the lake shore could be utilized fully, offering a variety of interests ranging from a natural area preserved for plant and wild life to beach, recreational and picnic facilities.

The Park Site Report prepared in 1961 estimated a total park requirement of about 10 acres per 1,000 population.

On this basis two major parks in such close proximity may be difficult to justify on a municipal scale from an economic and use viewpoint. However, with the individual potential which they offer, the contrast which

they create and the deficiency of a variety of parks within an expanding metropolitan area, it is considered that these parks are justified. Furthermore, the limited potential which they offer for alternative development enables the area to serve a most worthwhile purpose.

As a further development of the recommendation of the Park Site report prepared in 1961, the revised townsite plan proposes that Burnaby Lake Park, Burnaby Mountain Park and Hume Park be interconnected by means of ravine park strips that follow the major ravines and streams up the south slope of Burnaby Mountain and along Brunette River. The parks strips could be used for multiple purposes such as riding and hiking trails, local parks where they adjoin or pass through residential areas, and buffers between incompatible land uses. They would at the same time preserve the natural characteristics of the area. By maintaining the natural streams and ravine slopes, they would continue to provide drainage to the area and by preserving natural growth and vegetation in a wide belt parallel the ravines, erosion could be effectively controlled.

The proposed ravine park system to the east follows Stoney Creek ravine and the B. C. Hydro power line from the east end of Burnaby Lake near the Lake City rail spur through the multi-family areas adjoining the town centre, past the high school site, northward parallelling the proposed freeway connection

to Coquitlam, and connecting to Burnaby Mountain Park just west of North Road. The regional parks plan proposes that this park strip be continued into Coquitlam as part of a regional park and trail system along the Fraser Valley.

The proposed ravine park to the west connects Burnaby Lake Park and the adjoining Warner Loat Park with Charles Rummel Park at Lougheed; follows the existing trunk sewer easement, and Eagle Creek ravine, along the easterly boundary of the golf course, continuing as a park belt up the south slope of Burnaby Mountain Park east of Centennial Way.

The Brunette Park system follows the river and the Canadian National Railway along the Greater Vancouver Trunk Sewer easement to Hume Park. Future park links are also proposed to the Burnaby municipal park south of the freeway and to the proposed Deer Lake Park along Still Creek.

Each of these ravine park strips offers flexibility and a variety of possible uses as follows:

- (i) A trail system circumscribing Burnaby Lake and Burnaby Mountain around the university campus can be linked together along the two ravine parks down the slopes of the mountain and linked both to the local park system and the regional park system in the Fraser Valley.
- (ii) The park strips adjoining the high school and elementary school sites can provide expansion for playground facilities on a district and neighbourhood level as well as providing pedestrian access to these facilities.

(iii) Within residential areas, in particular where the park strips adjoin high density development at major commercial centres the continuous park system serves as a local park and supplements those areas which are deficient. Since pedestrian walkways within the neighbourhoods, can provide a link to the major park strips, they also serve a local function.

d) Roads System

Of foremost importance in the development of North-East Burnaby is a system of major traffic facilities which provide the necessary linkage between interdependent areas, whether this linkage be regional, inter-municipal or municipal in nature.

Although any estimates regarding major road capacity based on volume projections related to urban growth over a period of years is beyond the scope of this report and revised plan, the concept for the road pattern reflects the anticipated major requirements in terms of inter-municipal and municipal traffic within the limitations imposed by topography and existing developments. The major road pattern provides for a free and continuous movement of traffic through the area principally in an east-west direction. The existing and proposed major arterials bound and serve the major land use categories and areas of greatest density.

A proposed east-west route connects Como Lake Road

in Coquitlam, with Hastings Street near Inlet Drive, paralleling the Lougheed Highway along the south slope of Burnaby Mountain, bounding the Golf Course to the east and passing the proposed district centre.

The principle accesses to Simon Fraser University are from the east along the existing route which will connect in future to Stormont interchange and from the west along a proposed extension of Hastings Street to the existing route at the foot of Centennial Way.

A secondary north-south route is proposed which connects the westerly access route to the university with the major east-west arterial and extends south bounding the district centre and the golf course, crosses the Lougheed to serve the Government Road area south of Lougheed and to connect with the major route providing access to the centre of the municipality.

The major commercial centre to the east is served by the Lougheed Highway, North Road and the extension of Austin Road in Coquitlam on a major arterial level, and by an east-west route from North Road west which bounds the centre and the high density area to the north; underpasses the Simon Fraser University freeway at the rail spur and connects to the secondary north-south route mentioned above.

The locations of existing and proposed interchanges and grade separated crossings on the various routes are shown on Map No. 14. The crossings are in three main categories.

- (i) grade separated crossings for pedestrian traffic only. These crossings involve either
 - a. trail crossings as part of the overall park ravine system.
 - b. pedestrian crossings for neighbourhood (e.g. school catchment) use.
 - c. pedestrian crossings to provide free movement between portions of a commercial centre.

(ii) grade separated crossings for vehicles and pedestrians. These provide no interconnection of roadways.

(iii) grade separated crossings for multiple use.

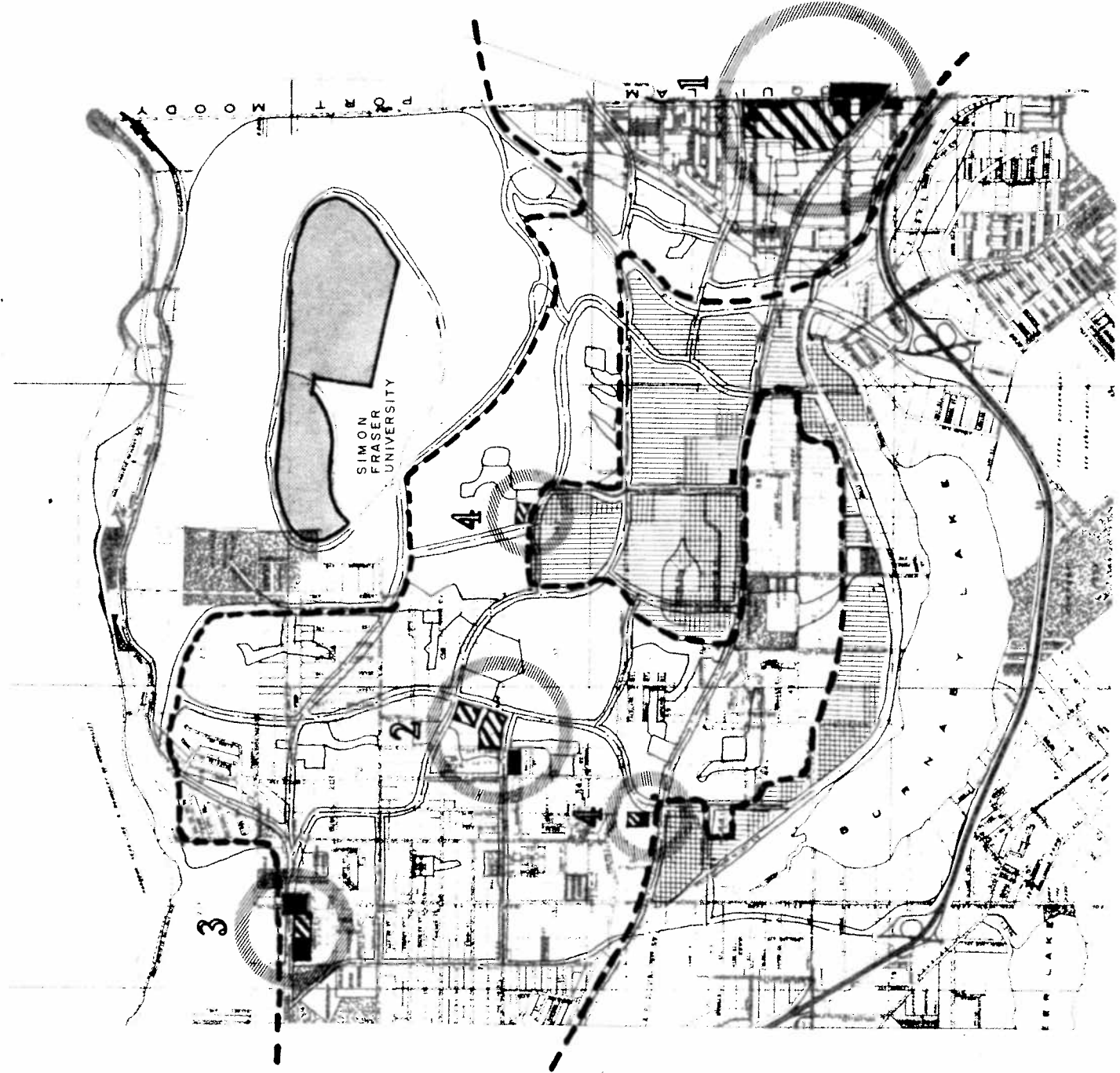
This type may involve vehicles, pedestrians, rail lines and water courses.

(iv) interchanges.







Except for the interchanges and grade separated crossings which already exist, most of the grade separated crossings are long range proposals but they should be constructed where feasible when the routes themselves are provided, particularly in relation to neighbourhood catchment areas and ravine park strips.

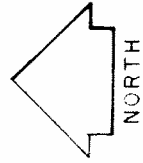
The preceding discussion on transportation for

North-East Burnaby has been mainly concerned with the major road system. However, in the broader transportation sense the possible future development of a rapid transit system for the metropolitan area which can supplement road use should not be overlooked. Although the feasibility of a rapid transit system for the Vancouver area has not been studied, its impact on the North-East Burnaby area will necessitate further review in the future.



LEGEND

-  EXISTING COMMERCIAL AND INSTITUTIONAL AREA
-  PROPOSED " " "
-  RESIDENTIAL AREA
-  PROPOSED INDUSTRIAL AREA
-  DEVELOPED INDUSTRIAL AREA
-  CLASSIFICATION OF CENTRE



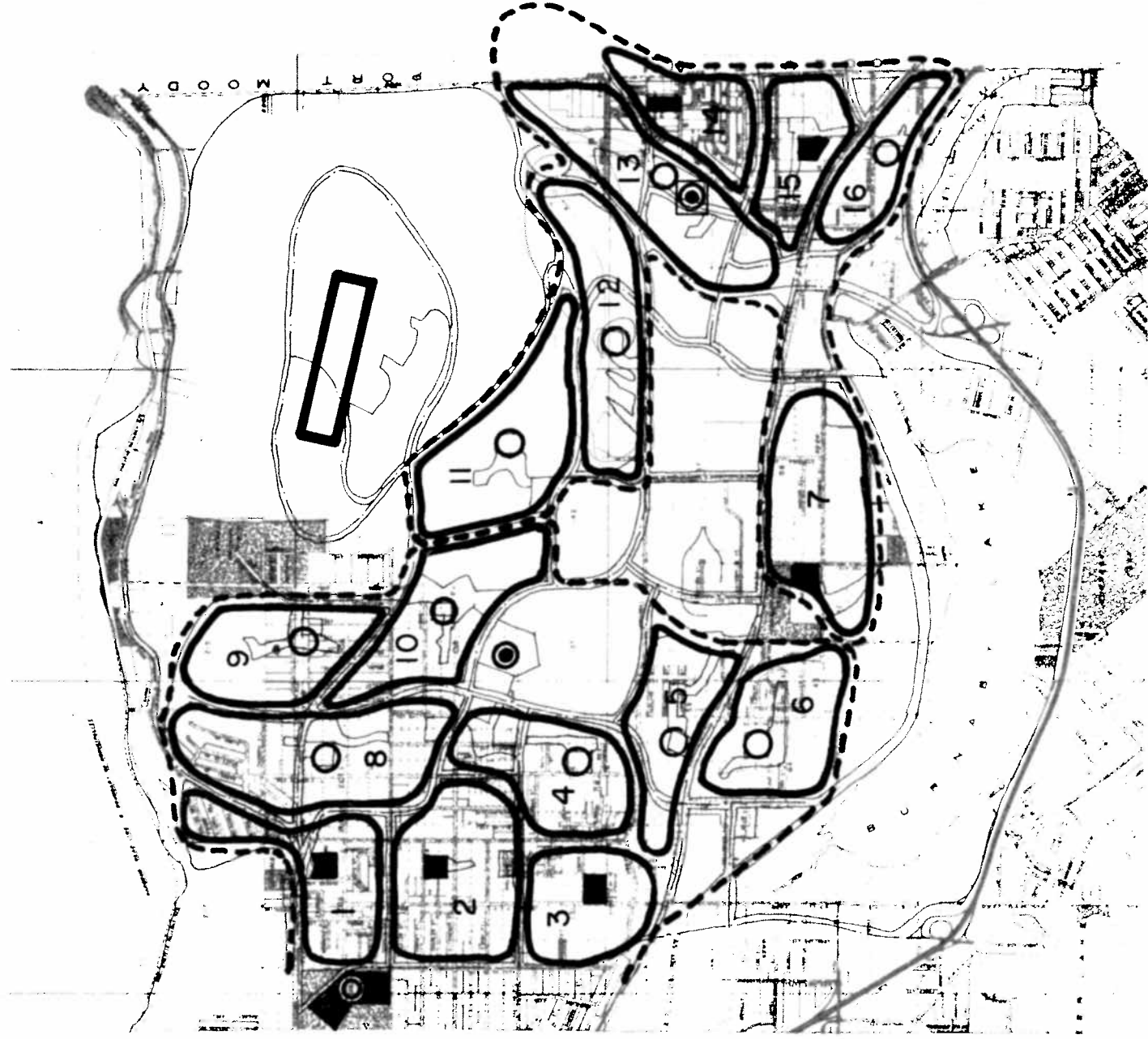
**NORTH - EAST BURNABY STUDY
CENTRES & MAJOR USES**




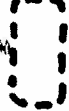





SCALE OF FEET

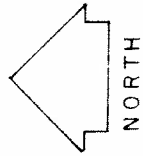
PLANNING DEPARTMENT
SEPT. 1966

MAP NO.
11

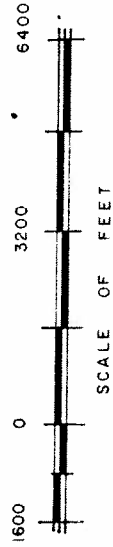


LEGEND

-  ELEMENTARY SCHOOL CATCHMENT AREA
-  JR. & SR. SCHOOL CATCHMENT AREA
-  EXISTING ELEMENTARY SCHOOLS
-  PROPOSED ELEMENTARY SCHOOLS
-  EXISTING J/S HIGH SCHOOL
-  PROPOSED JR. HIGH SCHOOL
-  PROPOSED J/S HIGH SCHOOL



**NORTH - EAST BURNABY STUDY
NEIGHBOURHOOD STRUCTURE**



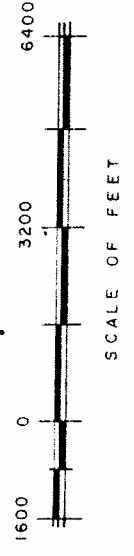
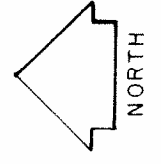
PLANNING DEPARTMENT
SEPT. 1966

MAP NO. 12



LEGEND

- EXISTING OR ZONED PARK LAND
- ▨ PROPOSED PARK OR RELATED PARK USES



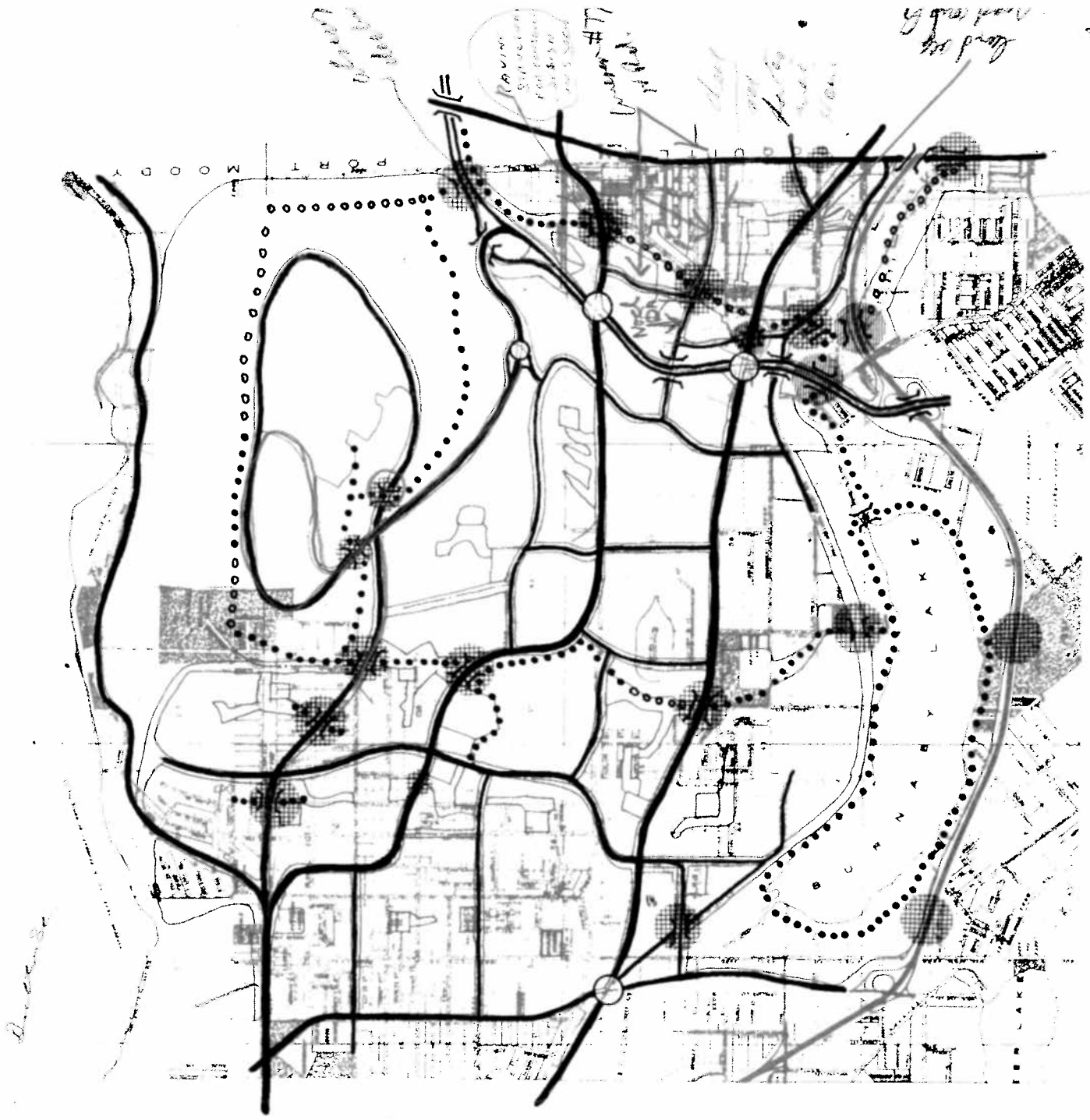
**NORTH - EAST BURNABY STUDY
MAJOR PARKS SYSTEM**

PLANNING DEPARTMENT
SEPT. 1966

MAP NO.
13







Handwritten notes:
1966
1967
1968

Handwritten notes:
1969
1970

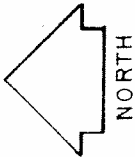


Handwritten notes:
New downtown system
Proposed system
New downtown system
Proposed system

LEGEND

-  FREEWAY
-  ROADS
-  EXISTING TRAILS
-  PROPOSED TRAILS
-  EXISTING OR CONFIRMED GRADE SEPARATED CROSSING
-  PROPOSED GRADE SEPARATED CROSSING

1. Downtown system
2. Proposed system
3. New downtown system
4. Proposed system



NORTH - EAST BURNABY STUDY MAJOR ROADS & TRAILS



SCALE OF FEET

PLANNING DEPARTMENT
SEPT. 1966

MAP NO.
14

PART V IMPLEMENTATION

In order that the development of the study area can proceed in an organised manner it is proposed that development take place on a staged basis. The extent of each stage is related to a reasonable programme of servicing and provision of roads and community, educational, and recreational facilities. A detailed plan for each area will be necessary as each stage proceeds, including cost estimates in order to give an indication of budget requirements in the priority areas.

STAGE I

In principle the initial stage proposed involves the extension and infilling of the following areas:

1. The area lying to the west of Phillips Avenue and north of Broadway with the exception of an area roughly east of Duthie and north and south of Kitchener which cannot be serviced from existing sewer areas. Within this area the following facilities and services will be required in the initial stages.
 - a. The creation of two elementary schools, neighbourhood parks and park links as well as a high school site and district playfield.
 - b. The extension of existing local roads and the dedication and acquisition of land on the north-south secondary road alignment and construction of some portions near the district centre. A further requirement is the need to establish the alignment of the westerly access road to Simon Fraser University from Hastings Street.

2. The area of Eagle Creek ravine and south of Broadway.

*development
will start
immediately thereafter*
It is proposed that a portion of Eagle Creek ravine between the industrial and residential areas be acquired and dedicated for park in the initial stages.

3. The Government Road Area within which the following facilities and services will be required in the initial stages.

- a. Additional secondary sewer connections to the main trunk.
- b. Provision of an elementary school site and local park facilities.
- c. The acquisition of a park strip along the sewer easement south of Government Road to Warren Loat Park.

4. The area bounded by Gagliardi Way on the west, Lougheed on the south, North Road on the east and Broadway on the north. Within this area the following facilities and services will be required in the initial stages:

- a. The acquisition of portions of Stoney Creek ravine park strip and property around Burnaby Lake at Cariboo Road. Acquisition of additional local park space of 1 to 1.5 acres east of Cameron Street School as part of the park area provided by the Lougheed Mall. Additional acquisition of land east of Bell Avenue Park to provide expanded playground facilities.
- b. Provision of elementary and high school sites west of Stoney Creek ravine.

in fact start

*(x) follow
1/2 hrs
at 10:00 am*

c. The dedication and construction of a secondary access route in the area west of Stoney Creek ravine and grade separated pedestrian crossing where road crosses ravine and connects to Noel Drive.

d. Provision to be made for a grade separated crossing for railroad and trail under the Lougheed Highway at Stoney Creek ravine when the Lougheed is relocated and the interchange constructed to the Simon Fraser University access route.

*Some
more safety
before design
is done.*

e. Completion of the proposed trunk sewer from Cameron to the Brunette trunk.

5. The Lake City Industrial area which is under single ownership and can be developed comprehensively with roads, sewers and water supplied in accordance with the special requirements of the area.

It should be noted that the water supply main along the Lougheed Highway and distribution mains in the area are somewhat inadequate to serve extensive development and this will have a bearing on the amount of industrial and residential development that can be considered in the initial stage within areas 4 and 5.

STAGE 2

The priority areas for each future phase of development will need to be examined and reviewed while the first stage areas are being considered in detail. The possible

areas of future expansion are related very closely to the provision of community facilities, roads and major services such as water, sanitary and storm sewers. For example the timing of major road construction will have a considerable bearing on the amount of land which can be programmed for development and while large consolidated sites are more easily dealt with on a staged basis, areas that consist of a series of small privately owned parcels present staging problems.

Stage 2 which is basically an extension of the areas described in the first stage involves three general areas; two in the western section of the study area; and one in the eastern section.

Area 1

On the west slope of Burnaby Mountain, the extension of residential development to Centennial Way and the west boundary of Trans Mountain Tank farm is proposed, together with the provision of the westerly park ravine system from Burnaby Mountain Park to the Golf Course. One of the desirable prerequisites to development of this area is the completion of the Simon Fraser access route from Hastings Street and the construction of sections of the north-south secondary route to the district centre.

Storm and sanitary sewer facilities to serve the area can be provided, firstly by the extension of the existing combined sewer that feeds into Burrard Inlet and secondly

by the construction of a new trunk facility from the existing trunk on Eagle Creek south of Broadway.

The supply of water to the area by means of gravity is limited to approximately one third of the area which lies below the 525 foot elevation. Expansion into the remaining two thirds lying above the 525 foot elevation will require the major extension of the water supply system and the construction of pumping stations.

Non residential expansion within the area includes additional apartment and commercial facilities in the district centre, and the provision of two school and park sites.

Grade separated pedestrian crossings will need to be provided when the proposed Simon Fraser access from Hastings Street is constructed in order to interconnect residential areas and provide access to school and park facilities. A further crossing of the Simon Fraser University access route will also be required at Centennial Way in order to link the park ravine strip to Burnaby Mountain.

Area 2

Completion of development in the area west of Eagle Creek Ravine between Broadway and Lougheed involves extension of roads and services and the establishment of a school and park site on portions of the municipal property to the west. Residential expansion in this area also includes low density multiple family development between

the school park site and Bainbridge.

Area 3

Further development in the eastern section of the study area basically involves expansion of the multiple family area south of Loughheed with necessary school and park facilities; and further residential development north of Broadway. At this time the remaining ravine park should also be acquired from Broadway north to Burnaby Mountain.

STAGE 3

The long range development on the south slope of Burnaby Mountain north of Broadway will depend largely on the further demand for housing and on the timing of construction of the proposed east-west arterial which connects Como Lake Road and Hastings Street and the secondary route along Shellmont Street which connects to the major east-west road.

The ultimate plan for the area envisages the displacement of the tank farms and their replacement with residential development and related uses. Naturally, the economic feasibility of such a move would have to be studied in relation to land values and replacement cost.

It is proposed that the area bounded by Shellmont, Underhill, Broadway and the municipal golf course be retained for industrial expansion. The north portion of this area could accommodate future industrial research

facilities related to the university which would provide a transition between the residential areas to the north and the heavy industrial area south of Broadway. Such a location will place research industry at approximately a midway point between the major town centre at North Road and the district centre to the west.

Assuming that some residential development will take place in the area, a small neighbourhood commercial centre is proposed, which will serve local shopping needs of the surrounding residents as well as provide commercial facilities related to the industrial site.

PART VI RECOMMENDATIONS

It is recommended that the Municipal Council:

1. Grant approval in principle to the revised Simon Fraser Townsite Plan.
2. Obtain comments from the organisations listed in the introduction.
3. Authorise the Planning Department to consider sub-division and zoning applications which fall within the first stage areas.
4. Consult with Simon Fraser University on the following matters:
 - a. Evaluation of student and staff housing needs.
 - b. Finalisation of university boundaries and questions of land ownership.
 - c. Establishment of a policy for the provision of related university facilities.
5. Commence implementation of the Plan by consideration of the following items:
 - a. Preparation of a Capital Budget and Land Management Policies for Stage I.
 - b. Establishment of a development control program to ensure a high standard of development on both private and public land.
 - c. Consultation with utility companies on the establishment of an underground servicing policy, and the replacement or relocation of existing overhead services.

- d. Investigation of the long range possibilities for the relocation of Trans Mountain and Shell Oil Tank farms.
 - e. Agreement with the Department of Highways and the major railways to the provision of interchanges and grade separated crossings as indicated on the plan and confirmation of agreement by the Department of Highways to the construction of the access route from Hastings Street to Simon Fraser University.
 - f. Initiation of a program of landscaping between major uses and along freeway and arterial routes in conjunction with the Department of Highways.
6. Investigation of the road linkage requirements from North-East Burnaby to other parts of the Municipality as part of an overall transportation, traffic, and land use study.

APPENDIX

EXISTING REPORTS OR MAPS RELATED TO NORTH-EAST BURNABY

1. Simon Fraser Townsite Master Plan
Project Planning Associates Limited, 1964.
2. Simon Fraser University Preliminary Siting Report.
Corporation of the District of Burnaby, Planning Department.
3. Apartment Study
Corporation of the District of Burnaby, Planning Department,
February, 1966.
4. Burnaby School Sites
Corporation of the District of Burnaby, Planning Department,
1961.
5. Burnaby Park Sites
Corporation of the District of Burnaby, Planning Department,
1961.
6. Climatology of Burnaby Mountain Area
J. D. Chapman, for Planning Department, June 4, 1957.
7. Travel and Access, Simon Fraser University
N. D. Lea and Associates, April 1963.
8. Future Development of North-East Burnaby
Corporation of the District of Burnaby, Planning Division,
June, 1956.
9. North-East Burnaby Soil Survey
Paul M. Cook, 1957
10. Observations and Report - Preliminary Survey-Burnaby
Mountain Area
Weston Agricultural Services, June 3, 1957.

11. A Report on the Recreational Use of the Burrard Inlet Shoreline within the Corporation of the District of Burnaby.
Corporation of the District of Burnaby, Planning Department, August, 1965.
12. Preliminary Report on Analysis of Students Residence Programme.
Simon Fraser University, 1966 - by Howard Abelman.
13. The Development of Burnaby Lake
Associated Engineering Services Limited and Swan Wooster Engineering Company Limited, May, 1966.