

***WEST NEWTON SOUTH***

***NEIGHBOURHOOD  
CONCEPT PLAN***

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# Corporate Report

MANAGERS DEPT

NO: C 240

COUNCIL DATE: JUL 18 1996

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## COUNCIL-IN-COMMITTEE

TO: Mayor & Council  
DATE: July 11, 1995

FROM: General Manager, Planning & Development  
FILE: 2350-006/2

SUBJECT: Neighbourhood Concept Plan (NCP) - West Newton (South Neighbourhood)  
Stage I Report

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## RECOMMENDATION

The Planning & Development Department recommends that Council:

1. Approve the Stage I Neighbourhood Concept Plan for West Newton (South Neighbourhood) as contained in Appendix I.
2. Approve the arrangement, terms and conditions specified in the Neighbourhood Concept Plan for West Newton (South Neighbourhood) as a means of managing the development and general provision of services, amenities and facilities for the new neighbourhood.
3. Authorize staff to prepare the necessary by-laws in accordance with Council's approved policy and the Municipal Act to accommodate the amenity provisions identified in the NCP.
4. Amend the Local Area Plan for West Newton to reflect the recommendations contained in the West Newton Neighbourhood Concept Plan (South Neighbourhood) (Appendix III).
5. Authorize staff to draft a by-law to amend the City of Surrey Land Use and Development Applications Fees Imposition By-law, 1993, No. 11631 as amended, to require the payment of additional application fees to recover the costs of preparation of the NCP.

## BACKGROUND

In June 1993, City Council approved a Local Area Plan for West Newton. The approved plan identifies three neighbourhoods (north, central and south), general land uses and development policies for this new urban community (Appendix II).

In June 1993, City Council approved the Neighbourhood Concept Plan (NCP) approach for the implementation of Local Area Plans. There are two NCP areas in West Newton, one located to the north of 64 Avenue (North Neighbourhood), the other located to the south, and bordered by 64 Avenue, 128 Street, 60 Avenue, and B. C. Hydro Right-of-Way (South Neighbourhood) (Appendix II). This report addresses the NCP for the South Neighbourhood.

## DISCUSSION

### A. General

The subject NCP was initiated by owners representing more than 70% of land area. In accordance with the process requirements, a Steering Committee was formed to guide the process, and a planning/engineering consultant was hired to prepare the NCP. Subsequently, the Terms of Reference was submitted by the consultant, and all the required fees were paid to the City.

The preparation of the plan started in July, 1994. The plan, which was submitted in June 1995, dealt with most planning and engineering issues. The only outstanding item which remains to be resolved prior to final approval is the submission of a satisfactory storm water management plan for an entire drainage catchment area within which the NCP area is a part. The storm water management plan is now being undertaken, and upon its conclusion, the subject NCP will be presented to Council for final approval.

### B. Land Use and Density

The land use/density plan contained in the Neighbourhood Concept Plan is in general conformity with the Local Area Plan. In general, the land use/density of the neighbourhood is separated into three main areas: multiple residential use of densities from 10 units per acre (u.p.a.) to 15 u.p.a. in the northern area close to 64 Avenue; church and park use in the centre area, and single-family use in the southern area (Figure 2 of Appendix I).

It is proposed, however, that seven existing single-family properties along 126 Street be included in the proposed RM-10 area (called "Cluster Housing" in the Local Area Plan), and four existing single-family properties along 128 Street be included in the townhouse area (Appendix III, Amended Local Area Plan). Since these lots are at the fringe of these multiple-residential areas, and logically form an integral part of these areas, the proposed inclusion is acceptable.



Further, the owner of a 0.2 hectare (48 acres) property at 6242 - 126 Street, which is currently designated for "Cluster Housing" (10 u.p.a.) use in the Local Area Plan, has proposed to redesignate his property to "Single-Family" (5 u.p.a.) use (Appendix III). A total of 24 lots in two cul-de-sacs are proposed for this property. Since this property is separated from the proposed RM-10 ("Compact Housing") area and the townhouse area by 126 Street and the church, it can logically form part of the single-family area to the south of 62 Avenue. The proposed redesignation is therefore acceptable.

### Implementation

Amendment of West Newton Local Area Plan in accordance with the map in Appendix III.

#### C. Road Pattern and Subdivision Design (Figure 2 of Appendix I)

The main corridors of transportation for the area are provided by the two arterial roads, i.e., 64 Avenue and 128 Street, and two major collector roads, i.e., 126 Street and 60 Avenue. In order to minimize direct access onto 64 Avenue, a new road (63 Avenue) is planned along the southern edge of the townhouse area to provide access to the townhouse area. Due to the existing church development and the GVRD property to the south of this proposed road, the full width of the road will be dedicated from the townhouse-designated properties.

To the south of the proposed 63 Avenue, an existing section of 62 Avenue is proposed to be extended eastward to intersect 128 Street, and to align with 62 Avenue on the east side of 128 Street. This road, classified as a minor collector road, would not extend westward beyond 126 Street, and would serve mainly for the neighbourhood. In order to discourage through traffic, and to provide a safe crossing to the neighbourhood park on the north side, the road is narrowed at the 127 intersection, and crosswalks would be provided (Figure 5 of Appendix I).

Since no direct access from single-family homes onto 128 Street (arterial) would be allowed, a lane is provided to the back of the lots fronting onto 128 Street. Cul-de-sacs are used to provide access and frontage to most of the remaining single-family properties.

### Implementation

Existing and future rezoning, subdivision and development permit applications are required to conform with the road and subdivision pattern of the NCP.

In order to ensure an equitable share of the 63 Avenue road cost among the properties designated for townhouse use, and to ensure a logical sequence of development in the townhouse area, the townhouse area is divided into four sections of similar size, each sharing a similar length of 63 Avenue (Appendix III). Site configurations of rezoning and development applications will

be accessed in accordance with this "phasing" plan. In order to achieve other design objectives of the townhouse area, including slope conditions, preservation of trees and a neighbourly environment, site configuration of more than the area of one section may be required.

D. Transit/Walkways/Bicycle Path

The proposed NCP has included plans for transit stops, walkways, and bicycle path (Figs. 4, 5, 6 of NCP). These plans have been reviewed by B. C. Transit and the City's Engineering Department, and have been found acceptable.

Implementation

Rights-of-way, easements, or road dedications will be required in the appropriate rezoning/subdivision applications to establish the proposed transit stops, walkways, and bicycle paths.

E. Design Guidelines

For the single-family areas, the NCP adopts Surrey's Model Building Scheme to ensure the house and landscape designs are of acceptable quality, and to prohibit basement-entry homes.

For the townhouse and compact housing areas, a set of design guidelines has been proposed to ensure quality and developments. Since most of the trees worthy of preservation in the area are located within the townhouse and compact housing areas, the design guidelines requires consideration be given to integrate the trees in the proposed site plans. This will be dealt with through development permit applications.

Implementation

Registration of building schemes similar to Surrey's Model Building Scheme will be required prior to final approval of single-family developments. Development permits are required for the townhouse and RM-10 areas. Regarding tree preservation, a tree survey is required to guide the review of site plans and building scheme, and restrictive covenants will be required for tree replanting. In all cases, tree permit applications are required prior to any removal of trees protected by the Tree Preservation By-law.

F. School Board Comments (Appendix IV)

The School Board has commented that elementary students in the area can be accommodated by the J. T. Brown Elementary School. Overcrowding in the J. T. Brown Elementary School can be alleviated when a new school at 12332 - North Boundary Drive is completed in 1997. Secondary school students can be accommodated by the existing Tamanawis Secondary School. Overcrowding in

this school will be alleviated by a new secondary school scheduled to open in 1999.

The School Board is concerned about pedestrian crossing along 64 Avenue in this area. There is currently one traffic signal at 128 Street intersection, and to further improve pedestrian crossing of 64 Avenue, the traffic study submitted by the consultant recommends a new traffic signal be installed at the 124 Street intersection. The recommended signal is acceptable to the Engineering Department and the School Board, and should enhance pedestrian safety along 64 Avenue.

G. Amenity Provision

The following contributions towards amenities and facilities are proposed. They have been reviewed and found acceptable by the respective City Departments:

(1) Neighbourhood Park

In accordance with the Local Area Plan, a six-acre park has been provided at 63 Avenue and 128 Street. The northern portion of the proposed park is located on the GVRD reservoir site at 6287 - 128 Street. Approval for public use of the property has been obtained from GVRD, and four tennis courts have been proposed to be placed on the reservoir top. The centre portion of the park lies on a City-owned property, and this property will be transferred under Parks. The southern portion of the park lies within a private property, and the Property Department has initiated negotiation for the acquisition of the land, pending on final approval of the NCP. The cost of acquisition is expected to be recovered through the 5% park dedication requirement at the subdivision stage.

Besides tennis courts, the park would also be equipped with basketball courts, adventure playground, and passive park areas. The general planning of the park has been accepted by the Parks & Recreation Department. The total park improvement cost is estimated to be about \$240,000, or \$559.44 per dwelling units (estimated number of dwelling units is 429). The NCP has proposed for this contribution, and the Parks & Recreation Department has accepted the amount.

(2) Community House

The Local Area Plan makes provision for a community and social services facility for the West Newton area. According to comments from the Parks & Recreation Department, it is premature to identify the exact nature and location of the facility, as the needs of future residents cannot be determined at this time. The community will be consulted in the future planning of this facility, so that the nature and location of this facility will address their needs.

The Parks & Recreation Department has estimated that the cost for developing this facility (approximately 300 sq. m. in size) is about \$470,000, and about half of this cost (\$235,000) is recoverable through the two NCP areas in West Newton. There are about 1,400 total dwelling units for the two NCP areas upon development, and the per unit contribution to this facility is therefore about \$168. The Steering Committee has proposed contribution to the same amount.

(3) Library Service

The Surrey Public Library has advised that the amount of library materials to serve one person is 1.5 items, and it costs on average \$25 for the acquisition of each item. Based on the average of 3 people per household, the cost of additional library material per dwelling unit in this NCP area is therefore \$112.50, and the Steering Committee has proposed for a contribution for the same amount for library materials.

(4) Police Protection

The Royal Canadian Mounted Police has advised that it is necessary to develop a sub-office in West Newton to accommodate future growth in the area (estimated total cost: \$65,000). Since this facility is to serve the entire West Newton area, and the future population of the NCP area (1,360) is expected to be about 7% of the future West Newton population (19,269), the Steering Committee proposes to contribute to 7% of the cost of the facility, which is \$4,450, or \$10.60 per dwelling unit.

(5) Fire Protection

Fire Hall #11, which is located at 60 Avenue and 128 Street, serves this NCP area. Improvement to the facility is required to service the increased population, and in accordance with Fire Department's guidelines, the Steering Committee proposes per unit contribution of \$150 for single-family developments, and \$250 for multiple-residential dwellings.

Implementation

The collection of contribution toward amenities will occur in accordance with the City's new initiative to be implemented under Bill 57. All moneys will be held in a capital reserve fund (to be established) until sufficient fund is received and the demand is such that capital expenditures on amenities are required.

H. Engineering

The Steering Committee has requested that the NCP proceed in two stages. Stage II will address all issues except storm water management. This project was initiated as a single stage NCP. The applicant has not been able to complete a satisfactory proposal to both Surrey and Ministry of Environment to address the

storm water management issues for the NCP. This outstanding issue will require an additional two to three months to resolve. The applicants have requested a two stage approach to give Council an understanding of the issues which have been resolved. The Engineering Department can support this approach with the following understanding:

1. That Council is made aware of the request by the applicants and understands the ramifications of the unresolved storm water issues.
2. That all applications within the NCP be held and not receive 1st reading. This would permit discussions at Regular Council on Land Use, but no reading given to the application prior to the completion of Stage II NCP and resolution of storm water issues.
3. That all stakeholders be made aware of the process and that Stage I approval of the NCP does not mean applications can proceed to introduction of the by-law.

#### **Servicing Issues:**

The Engineering Department can support the servicing concepts proposed in the NCP for sanitary, water, and road works provided that all Engineering comments, including storm water management, are resolved prior to final approval of the NCP.

#### **Roads and Transportation**

The Traffic Impact Study recommended that 128 Street be constructed to ultimate cross-section from Highway #10 to 72 Avenue when traffic volume warrants. The 10 Year Plan includes 128 Street from 64 Avenue to 72 Avenue only. Engineering will consider the Highway #10 to 64 Avenue section of 128 Street for inclusion in the 10 Year Plan during upcoming review of the Servicing Plan. This project is anticipated to have a capital cost of approximately \$3 million. The need for the arterial widening is driven by the anticipated growth in background, not traffic solely generated by this site.

The widening is not currently essential for the development of the NCP area but if the area does not develop for five years then it will be necessary for 128 Street to be at ultimate to allow the development of the area. This assumes the background traffic volumes have increased to a level that requires the works.

#### **Storm Water Management**

The applicant has to address storm water issues in two catchments of the NCP:

1. Eugene Creek Catchment

Two options are being considered for this catchment. First, a detention pond at approximately 125 Street and #10 Highway in conjunction with mitigation works in Eugene Creek. Second, a trunk storm sewer on New McLean Road and Hillside Road, with mitigation in Eugene Creek. These options are still being analyzed by the applicant. Either of these solutions will address the catchment drainage issues. Should the detention pond be determined to be the best technical solution, the Council consultation policy for pond siting will have to be completed. This process can be held after acceptance of the Stage II report. Applications would be on hold until this process is complete. Alternatively, we could consider the NCP build interim community detention with a financial commitment to fund whatever the cost of the final storm water solution as the consultation process proceeds. The current 10 Year Plan and DCC do not include the full cost of the proposed storm water management solution for this catchment at this time.

2. Boundary Park Catchment

A portion of the NCP drains to the Boundary Park detention pond. The applicant has not completed their analysis of the downstream storm sewers and detention pond to determine the scope and cost of works required for the catchment including the NCP area. This analysis must be completed prior to the NCP being finalized. The cost of these improvements must be tied to the catchment which includes this NCP. These works are currently not in the 10 Year Plan and DCC program.

3. Cougar Creek Catchment

A portion of the NCP drains to the north and through the central neighbourhood of West Newton (Appendix II). The central neighbourhood is proposing a detention pond which will service this catchment, however, the NCP is not complete. This NCP is required to provide a strategy for development phasing for this catchment relative to the detention pond.

In summary, the storm water management plan, including acceptable solutions, funding and timing is not available at this time. The plan must be completed as part of the Stage II report. Should a detention pond be part of the solution, the Council consultation policy for siting the detention pond will also have to be completed. Applications in this NCP should not proceed beyond Regular Council on Land Use until the solution for the storm water management of the NCP has been completed.

I. Neighbourhood Awareness and Consensus

The Steering Committee held three Open Houses during the Neighbourhood Concept Plan process. The purpose and process of the NCP were presented in these Open Houses, and comments and concerns were solicited from attendants. In order to ensure a broader awareness and participation from owners and residents inside and outside the NCP area, special efforts, such as direct postage mailing, "drop-mails" and advertisements on local newspapers, were made in the notification of the third Open House.

The third Open House was held on March 23, 1995 in which the public was invited to view the NCP in its final form. The minutes from the Open House indicates a general support of the NCP from the attendants to the Open House, and over 70% of the questionnaires collected after the Open House are in favour of the NCP.

J. In-Stream Applications (Appendix VI)

1. 5692-0352-00; 12534 - 64 Avenue  
Proposed rezoning from RS (By-law No. 5942) to PA-2 (By-law No. 12000) to allow for the development of a community hall (over 400 seats, 996 sq. m./10,700 sq. ft.).

In order to ascertain the neighbourhood's opinions on this proposed rezoning, the Steering Committee invited specific comments and discussions in the Open Houses. The majority of comments received through these Open Houses indicates a strong opposition against the proposed rezoning. Concerns regarding noise, incompatibility of land use, traffic conflict along 64 Avenue, and building massing impact were raised.

Based on input received through the Open Houses, the NCP proposes the same land use and density for the site under this application as the Local Area Plan, which is "Cluster Housing" of 10 u.p.a., or RM-10 zoning. If the applicant decides to pursue this application despite its non-compliance with the Local Area Plan and the proposed NCP, the application will be dealt with in its the rezoning process.

2. Other Applications

Other development applications include three single-family rezoning applications for 6242 - 126 Street (5691-0569-00), 6064 to 6158 - 126 Street (5691-0285-00), and 6077 - 128 Street (5689-0584-00). The proposed subdivision layouts are in general compliance with the NCP.

There is also one townhouse application at 12726 - 64 Avenue (5695-0099-00). The applicant will need to provide a context plan for the entire townhouse area to demonstrate that the proposed layout for the

subject site is part of a larger layout that satisfies the design guidelines of the NCP. Specifically, the context plan should include measures to coordinate outdoor amenity areas, to preserve trees to provide buffer along arterial roads, and to coordinate roadways and accesses. Future townhouse developments in the area will also be reviewed against the context plan.

### Implementation

Prior to the final approval of the NCP, development applications will be reviewed on their conformity with the NCP and presented to Council for preliminary approval (ELUC approval). The rezoning by-laws, however, will not be introduced until after the submission of a satisfactory storm water management plan, and the final approval of the NCP.

#### K. Financial Implications for the City

The NCP makes certain recommendations regarding the sources of funding and timing of expenditures to accommodate a fully planned and coordinated neighbourhood. The proposed scheduling of amenity development and servicing is shown in the NCP as a function of revenue received and expenditure required. In no way can the NCP require the City Council's firm commitment to the expenditures proposed. However, City Council's general acceptance of the NCP will enable City staff to administer a financial and development plan without placing undue financial burden on the City while accommodating new urban development in a coordinated and timely manner.

## CONCLUSION

The West Newton Neighbourhood Concept Plan (South Neighbourhood) is the result of a comprehensive analysis of the development requirements for this future urban neighbourhood. It makes plausible recommendations for developer assistance in providing services and amenities and illustrates how the land uses, densities and the development pattern proposed can be supported within the City's current financial situation.

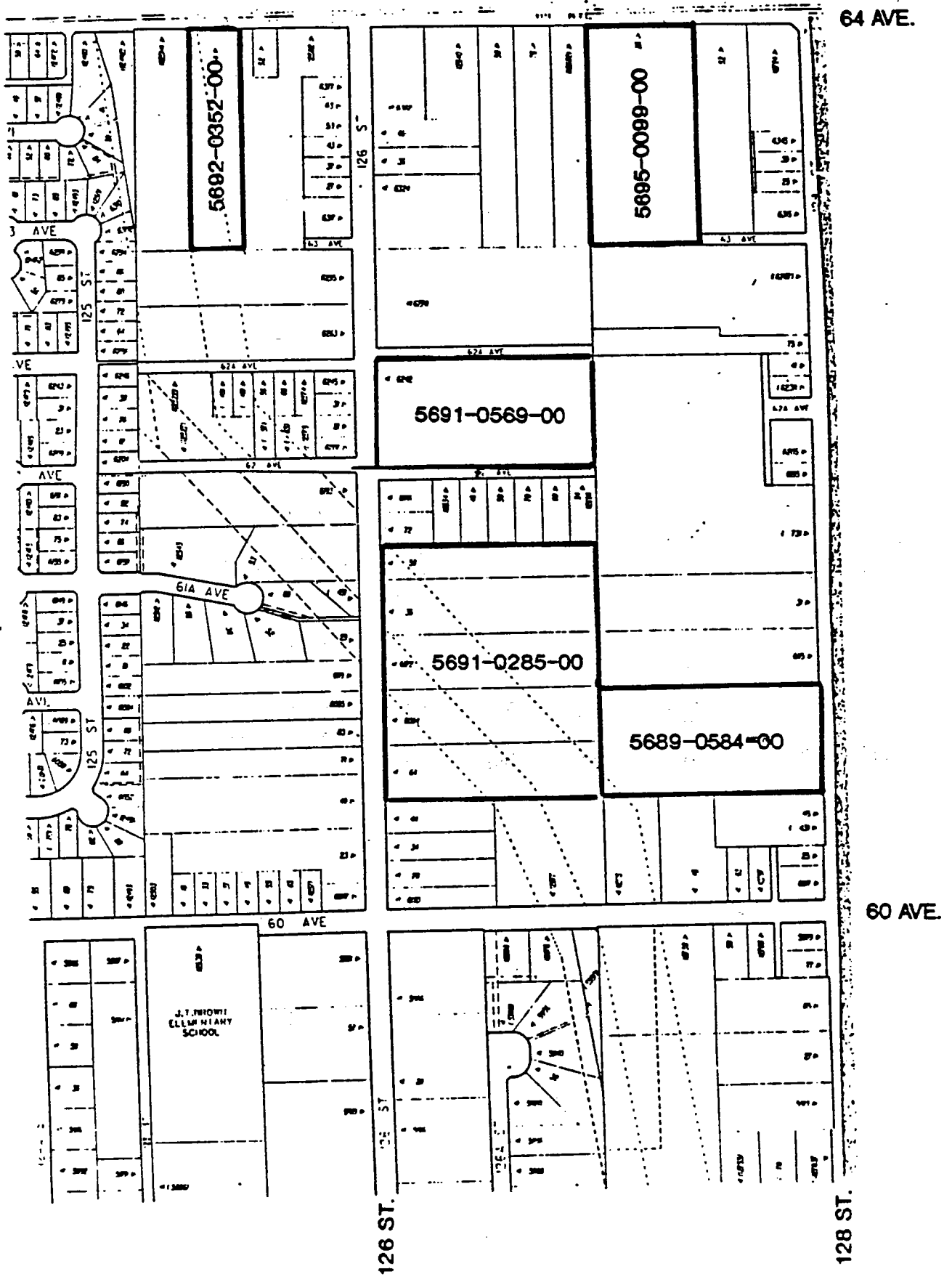
The NCP has involved the significant input of the affected property owners, the public, the various City Departments and interested outside agencies. It has achieved the main objectives of the NCP program, which are to create coordinated, comprehensive and financially sustainable neighbourhoods in Surrey. The Planning & Development Department, therefore, recommends that the proposed Stage I Neighbourhood Concept Plan for West Newton (South Neighbourhood) be approved.



traffic survey to review potential vehicle/pedestrian conflicts. In this regard the intersections at 128th Street and 64th Avenue, and, 126th Street and 64th Avenue, are of particular concern to this Department.

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# APPENDIX V IN-STREAM APPLICATION MAP





# Corporate Report

MANAGER'S FILE:

NO: C250

COUNCIL DATE: OCT 10 1995

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## COUNCIL-IN-COMMITTEE

TO: Mayor & Council

DATE: October 3, 1995

FROM: General Manager, Planning & Development

FILE: 2350-006/2

SUBJECT: Neighbourhood Concept Plan (NCP)  
West Newton (South Neighbourhood)  
Stage I - Follow-up Report

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## RECOMMENDATION

The Planning & Development Department recommends that Council:

1. Receive this report for information.
2. Approve recommendations contained in the attached Corporate Report C240 (Appendix A), which are:
  - a) Approve the Stage I Neighbourhood Concept Plan for West Newton (South Neighbourhood) as contained in Appendix I.
  - b) Approve the arrangement, terms and conditions specified in the Neighbourhood Concept Plan for West Newton (South Neighbourhood) as a means of managing the development and general provision of services, amenities and facilities for the new neighbourhood.
  - c) Authorize staff to prepare the necessary by-laws in accordance with Council's approved policy and the Municipal Act to accommodate the amenity provisions identified in the NCP.
  - d) Amend the Local Area Plan for West Newton to reflect the recommendations contained in the West Newton Neighbourhood Concept Plan (South Neighbourhood) (Appendix III).

- e) Authorize staff to draft a by-law to amend the City of Surrey Land Use and Development Applications Fees Impositions By-law, 1993, No. 11631, as amended, to require the payment of additional application fees to recover the costs of preparation of the NCP.
3. Staff be authorized to commence negotiation with GVRD for using the reservoir site at 6287 - 128 Street for park purposes.

## BACKGROUND

In the Council-in-Committee meeting on July 31, 1995, Council dealt with Corporate Report C240 (Appendix A) regarding the West Newton Neighbourhood Concept Plan (South Neighbourhood), and referred it back to staff to address a number of issues, including provisions for park/open space, staging of development, means to collect amenity contribution, noise impact of 64 Avenue, and storm water management. Council has also requested information regarding secondary school capacity and catchment areas.

## INTENT

The intent of this interim report is to provide background information and address the concerns raised by Council in its consideration of Stage I of the NCP. Information regarding Secondary School capacity is also included.

## DISCUSSION

### 1. Provisions for Park Land and Open Space

#### Concern

Council expressed concern regarding a perceived lack of park land and open space in this NCP area, and the utilization of the GVRD reservoir property for park purposes.

#### Response

The following will highlight issues and considerations related to the provision of park in this NCP:

#### (a) Official Community Plan and Local Area Plan Requirements

The Official Community Plan requires that 1.5 acres of active park area and 2 acres of passive park area be included in a neighbourhood park for every 1,000 population. According to this requirement, a minimum of 2 acres of active park and 2.7 acres of passive park be provided in the proposed neighbourhood park inside the NCP area. The NCP proposes a neighbourhood park with approximately 2.5 acres of active area equipped with children's playground, tennis court and basketball court, and approximately 4.2 acres of passive park area with tree retention and

walkways. The provision of park area in total has therefore exceeded the minimum requirement by about 1.9 acres. Linkages connecting the park with other green areas such as the Hydro Right-of-Way corridor are also provided via 62A Avenue and other walkways within the subdivisions.

The general nature, size, location, and configuration of the neighbourhood park also complies with the West Newton Local Area Plan (Appendix B and C). The park is composed of the following properties:

GVRD reservoir property at 6287 - 128 Street	1.5 hectare (3.72 acres)
City-owned property at 6275 - 128 Street	0.4 hectares (1 acre)
62A Avenue road allowance	0.196 hectares (0.48 acres)
Northern portion of 6173 - 128 Street	0.6 hectares (1.5 acres)

- (b) GVRD has approved entering into a suitable lease agreement with the City to allow the reservoir site be used for park purposes (Appendix D). The City-owned property and the 62A Avenue road allowance can be transferred under park inventory. The only park acquisition required is for the 0.6 hectare area of 6173 - 128 Street.
- (c) The availability of the GVRD reservoir site for park purpose is considered to be a bonus to the City and is not a part of the 5% park dedication requirement in the area. The balance of the park dedication requirement not needed for the consolidation of the neighbourhood park will be collected as cash-in-lieu for the park acquisition fund, and would be used for the acquisition of community parks and district parks outside this neighbourhood.

In order to expedite the implementation of the NCP, it is recommended that staff be authorized to commence lease negotiation with GVRD.

- (d) Regarding the additional need for open space in the RM-10 (Compact Housing) and RM-15 (Townhouse) areas, the Zoning By-law requires a minimum of 3 sq. m. (32 sq. ft.) per unit of outdoor amenity space to be provided by each development project to augment the open space facility in the area.
- (e) The Parks & Recreation Department has further commented that the size, location and configuration of the park is acceptable.

## 2. The Staging of Development

### Concern

In the proposed single-family subdivision layout, entire width of the new roads could be placed within one property, and new lots could straddle on existing property lines ("half-lot" situations). Council raised the concern of how these new roads can be achieved, and how the "half-lot" situations can be avoided/resolved.

Response

One of the advantages of the NCP is the ability to produce an overall subdivision in a logical and coordinated manner, without overly hindered by existing lot configuration and ownership. In order to achieve this objective, new roads may not be located along existing common property lines, and new lots may straddle on existing property lines ("half-lot" situation). The NCP proposes that in these situations, subdivisions are allowed only if enough site areas are assembled to allow the subdivisions to adhere to the overall concept. Property owners in the area have been informed of this approach through Open Houses and their participation in the NCP preparation.

3. **The Mechanism To Collect Funds For Amenities**

Concern

Council expressed concern on how funds would be collected for amenities.

Response

The collection of contributions toward amenities will occur in accordance with a new density bonusing mechanism in the Zoning By-law to be implemented under Bill 57. The Zoning By-law amendment will be presented to Council for consideration in the near future. It is premised upon amenity contributions proportionate to density allocations identified in the NCP. The contributions will be collected in a similar manner as Development Cost Charges (DCC's), including:

- Contribution for single-family developments are established on a per lot basis payable prior to final subdivision approval.
- Contribution for multi-family developments are established on a per unit basis payable prior to the issuance of a building permit.
- Other uses, e.g., industrial, commercial, institutional (not applicable to this NCP), are established on a floor area basis payable prior to the issuance of a building permit.

All monetary contributions are fixed and are identified in the NCP. The contributions will be held in a capital reserve fund (also to be established by by-law) and when appropriate thresholds have been achieved, the funds may be released for capital construction/purchases as directed by the approved NCP.

4. **Traffic Calming Measures on 64 Avenue**

Concern

Council expressed concerns about noise impact on townhouse and compact housing units along 64 Avenue. Council also inquired about the use of traffic calming measures on 64 Avenue.

Response

The Engineering Department has commented that 64 Avenue is designated arterial and is currently under construction to bring it up to the full standard. An arterial road is expected to accommodate regional through traffic in an efficient manner. Traffic calming measures, therefore, would not be appropriate for an arterial road, and are not incorporated in the 64 Avenue design.

In order to mitigate traffic noise impact on townhouses and compact houses fronting 64 Avenue, the design guidelines of the NCP have been revised to require that a landscaped berm with hedging and low fencing be placed along the 64 Avenue frontage. Wherever possible, housing units are not to be placed facing 64 Avenue directly. Further, solid materials like brick cladding can be incorporated into the facades, and windows are to be double glazed.

5. **The Management of Storm Water Drainage for The NCP Area**

Concern

Council expressed concern about the storm water management system for the wider catchment areas within which the NCP area is located.

Response

A satisfactory solution to storm water management is a condition to be met prior to the Stage II approval. So far, two options have been proposed to address drainage. The first option includes the location of a detention pond at approximately 125A Street and Highway #10, and the second option includes a trunk sewer down Hillside Road (McLellan Road and 121A Street) onto the low lands. The first option requires a public consultation process with respect to the location of the detention pond. The second option requires the approval from the Ministry of Environment for the drainage discharge onto the lowlands. The second option is preferred due to a simpler implementation process. The Engineering Department is consulting with the Ministry of Environment on this matter.

## 6. Impact on Secondary Schools

### Concern

Council has expressed concerns about the capacity of secondary schools to accommodate increase population in the NCP areas.

### Response

In response to Council's concern about secondary school capacity, the School District has provided further comments about impacts on secondary schools in view of future developments in the NCP area. The School District anticipates that secondary school students from this Neighbourhood will be accommodated at Tamanawis Secondary School (Appendix E). Enrollment at this School currently exceeds capacity. In the short term it is expected that some overcrowding will be relieved once the addition to the School (currently being undertaken) has been completed.

In the longer term, a request for planning funds for a new secondary school (South Newton Secondary - Site #164) will be included in the 1996 Capital Budget. If planning funds, and subsequent construction funds, are approved it is expected that this School will open in 1999 or the year 2000. At such time it is likely that a boundary change between Tamanawis and the new South Newton Secondary will be made. It is anticipated that this will substantially reduce overcrowding at Tamanawis.

## CONCLUSION

Council expressed concerns regarding the subject NCP on issues relating to the park requirements, the utilization of the GVRD reservoir property for park purpose, the drainage system, secondary school capacity, as well as means to collect amenity funds. This report indicates how the NCP has addressed these concerns, except drainage, which will be finalized prior to final approval of the NCP. The Planning & Development Department, therefore, recommends that Council considers this NCP for Stage I approval.

  
Lehman O. Walker  
General Manager  
Planning & Development Department

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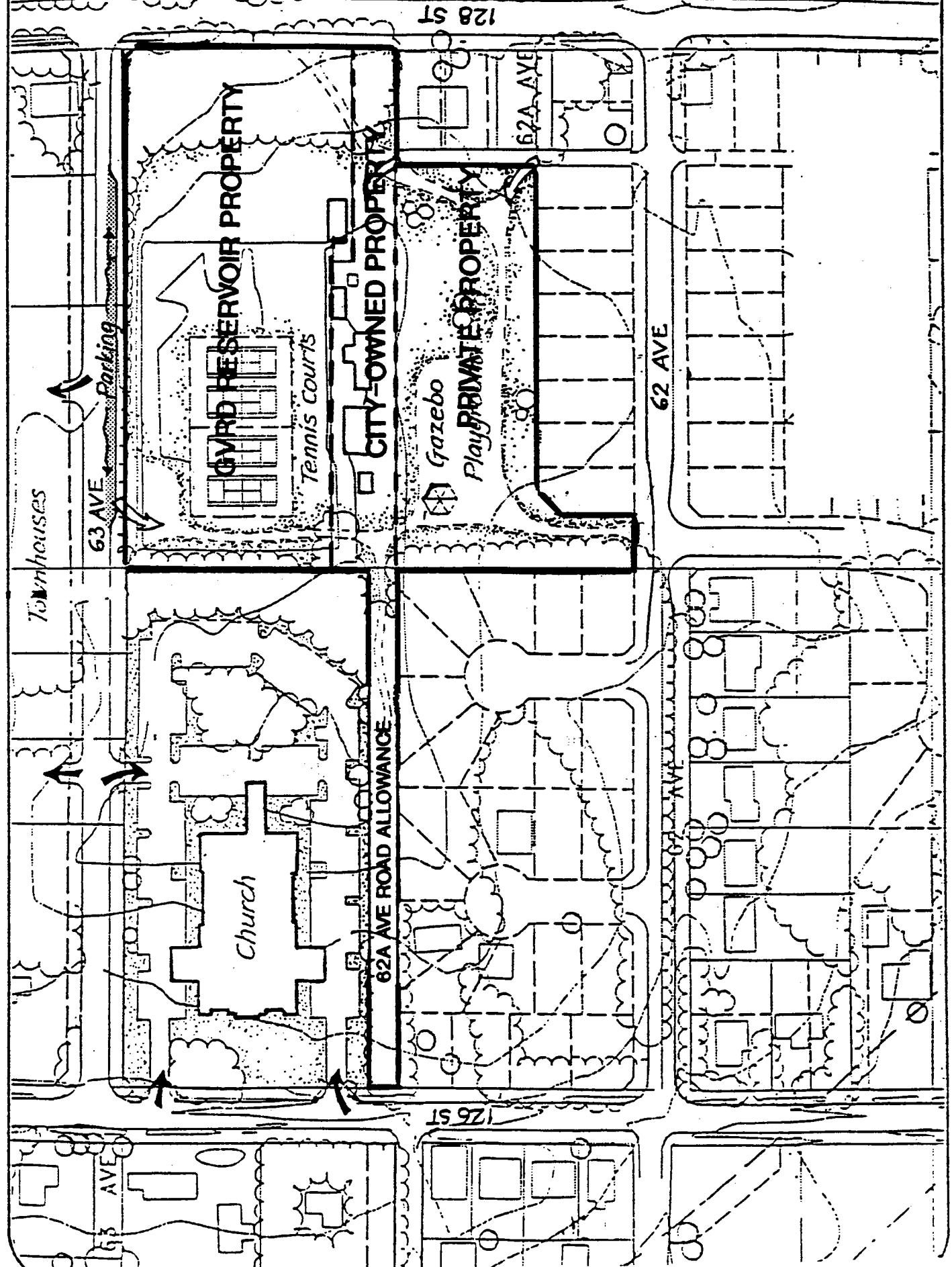
### Attachments

- Appendix A Corporate Report C240 To be distributed on table when Council considers Corporate Report C250
- Appendix B Neighbourhood Park
- Appendix C West Newton Local Area Plan
- Appendix D Approval Letter from GVRD Regarding Reservoir Site
- Appendix E School Catchment Area



APPENDIX B






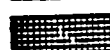







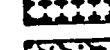
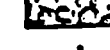

PROPOSED NEIGHBOURHOOD PARK

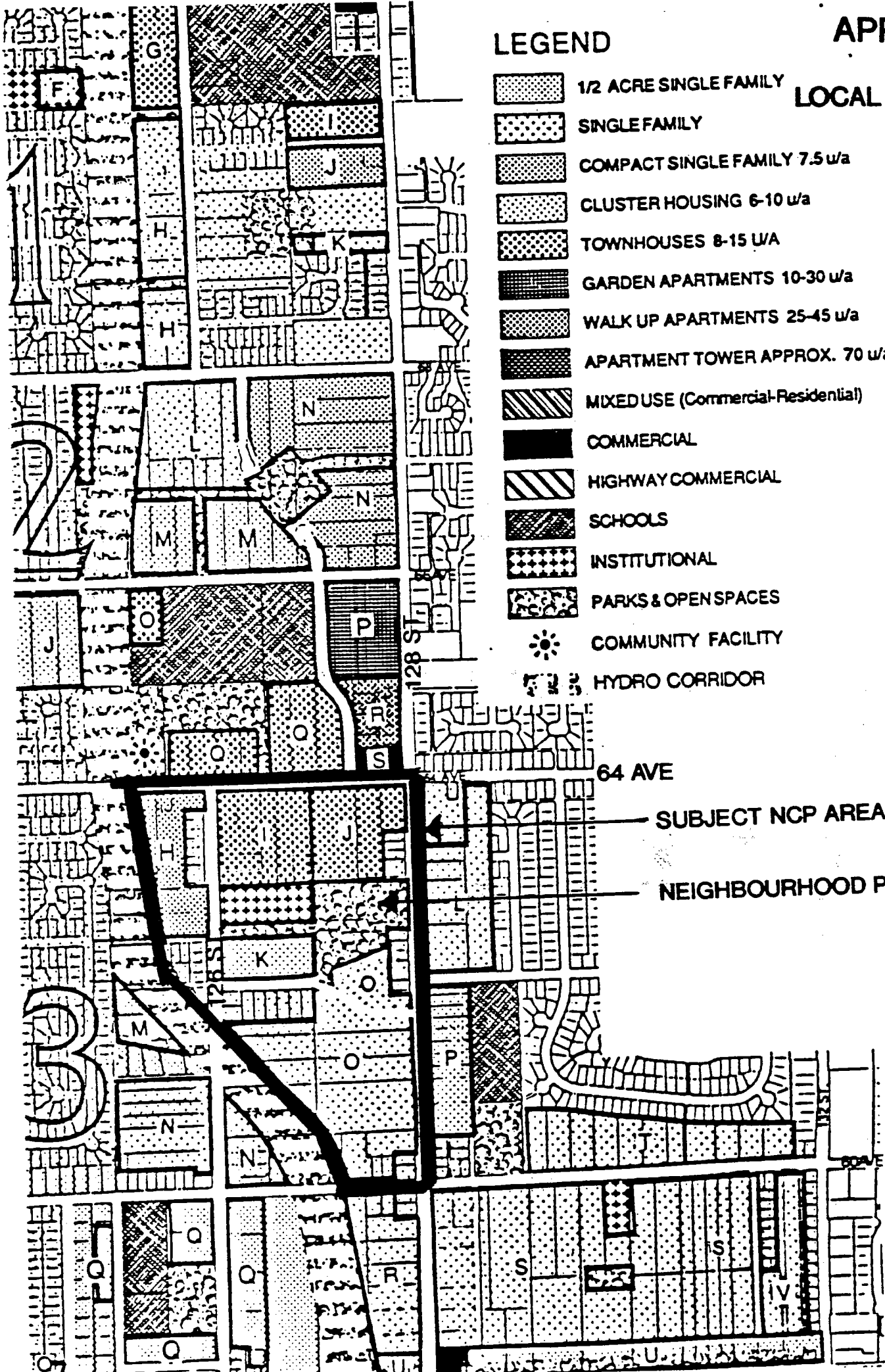


# APPENDIX C

## LOCAL AREA PLAN

### LEGEND

-  1/2 ACRE SINGLE FAMILY
-  SINGLE FAMILY
-  COMPACT SINGLE FAMILY 7.5 u/a
-  CLUSTER HOUSING 6-10 u/a
-  TOWNHOUSES 8-15 u/a
-  GARDEN APARTMENTS 10-30 u/a
-  WALK UP APARTMENTS 25-45 u/a
-  APARTMENT TOWER APPROX. 70 u/a
-  MIXED USE (Commercial-Residential)
-  COMMERCIAL
-  HIGHWAY COMMERCIAL
-  SCHOOLS
-  INSTITUTIONAL
-  PARKS & OPEN SPACES
-  COMMUNITY FACILITY
-  HYDRO CORRIDOR



64 AVE

SUBJECT NCP AREA

NEIGHBOURHOOD PARK

60 AVE



Greater Vancouver Regional District  
4330 Kingsway, Burnaby, British Columbia, Canada V5H 4G8

Water Engineering and Construction

Watershed Management (604) 432-6410 Fax (604) 432-6419 • Quality Control (604) 451-6000 Fax (604) 451-6019  
Water Engineering, Operations and Construction (604) 432-6405 Fax (604) 432-6297

File: WD 93.25

February 17, 1995

RECEIVED

Feb 20 1995

City of Surrey  
Planning and Development  
14245 - 56th Avenue  
Surrey, B.C.  
V3W 1J2

PLAN	DT
NLC	8350-001
DT	

Attention: Mr. Nicholas Lai  
Manager, Central Surrey Section

Dear Sirs:

Re: Newton Reservoir Site - Proposed Park Use

This will advise that this District's Administration Board approved the following recommendation at their meeting of December 9, 1994,

*THAT authorization be given to enter into a suitable lease agreement with the City of Surrey to allow their use of the Newton Reservoir site for park purposes, subject to the terms of the lease being found acceptable by the District's solicitor and Commissioner.*

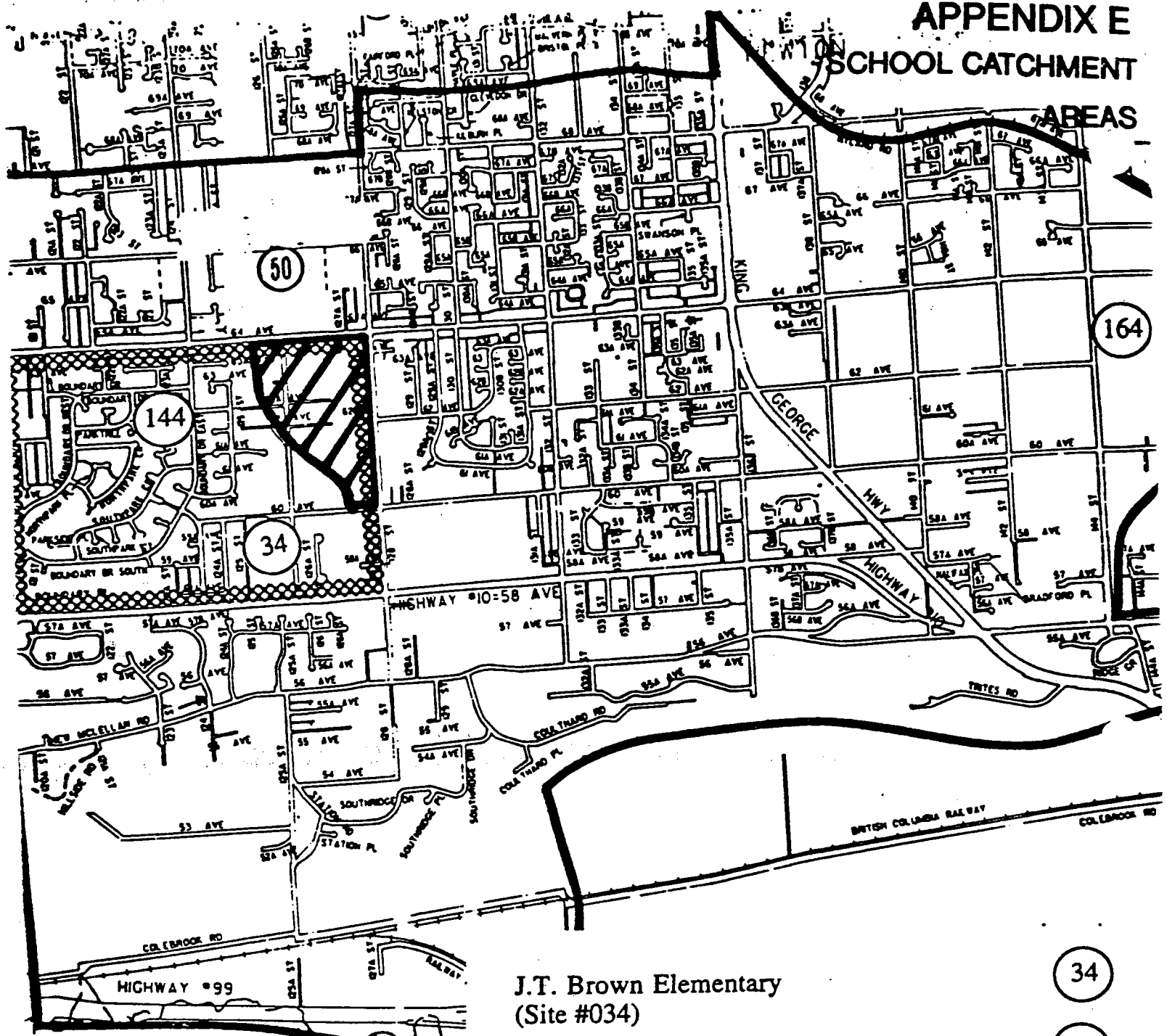
This clears the way for us to enter into a lease arrangement that will suit both parties. We can begin this process at your convenience, and await your reply indicating your requirements in that regard.

Yours truly,

H. T. Heath, P. Eng.  
Administrator  
Water Planning & Operations

HTH/gh

# APPENDIX E SCHOOL CATCHMENT AREAS



J.T. Brown Elementary  
(Site #034)

34

Proposed Boundary Park Area Elementary  
(Site #144)

144

Tamanawis Secondary  
(Site #050)

50

Proposed South Newton Area Secondary  
(Site #164)

164

West Newton Sector#3 NCP Area



Elementary Catchment Boundary



Secondary Catchment Boundary





## DISCUSSION

Subject to Council's acceptance of the Engineering Department's Corporate Report and recommendations dealing with the Drainage Report, the Engineering Department advised that acceptable solutions to the overall drainage issues for the NCP have been achieved. (Appendix III). Specifically:

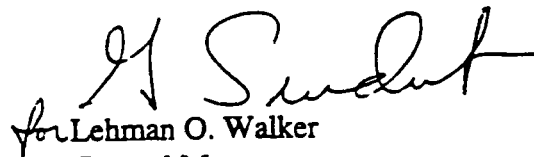
1. All servicing issues have now been resolved.
2. The financing of the NCP infrastructure is to be provided by the developer with no funds being provided by the City other than those outlined in the Corporate Report on the Eugene Creek Master Drainage Plan.
3. The combined Stage I/Stage II Report for the West Newton South Neighbourhood NCP is now complete from an Engineering and Financing perspective.

With the completion of an acceptable storm water management plan and financing strategy, the Planning & Development Department will introduce the necessary By-laws to implement the West Newton South Neighbourhood NCP. Further, it is in order for Council to now deal with development applications within this NCP.

## CONCLUSION

With the completion and acceptance of the Eugene Creek Master Drainage Plan and the associated Financial Plan for the West Newton South Neighbourhood NCP, all of the engineering components of this NCP have been developed to adequately support the land use, density and subdivision concept proposed in this new neighbourhood.

The Planning & Development Department, in conjunction with the Engineering Department will therefore introduce the necessary by-laws to implement the South Neighbourhood of West Newton and will process the development applications in accordance with the approved plan.



Lehman O. Walker  
General Manager  
Planning & Development

JP/ln

Appendices:

- Appendix I Council's Resolution Approving the NCP
- Appendix II: Approved NCP Development Concept - Excerpt from the NCP
- Appendix III: Memorandum from the Engineering Department

## APPENDIX I

### COUNCIL'S RESOLUTION APPROVING STAGE 1 OF THE WEST NEWTON NEIGHBOURHOOD CONCEPT PLAN

The following resolution (RES.95-2631) was passed by City Council at its Special (Regular) Council meeting of October 10, 1995:

It was moved by Councillor Watkins and Seconded by Councillor Higginbotham That Council:

- I. Receive this report for information.
- II. Approve recommendations contained in Corporate Report C240 (Appendix A) which are:
  - A. Approve the Stage 1 Neighbourhood Concept Plan for West Newton (South Neighbourhood) as contained in Appendix I.
  - B. Approve the arrangement, terms and conditions specified in the Neighbourhood Concept Plan for West Newton (South Neighbourhood) as a means of managing the development and general provision of services, amenities and facilities for new neighbourhood.
  - C. Authorize staff to prepare the necessary by-laws in accordance with Council's approved policy and the Municipal Act to accommodate the amenity provisions identified in the NCP.
  - D. Amend the Local Area Plan for West Newton to reflect the recommendations contained in the West Newton Neighbourhood Concept Plan (South Neighbourhood) (Appendix III).
  - E. Authorize staff to draft a by-law to amend the City of Surrey Land Use and Development Applications Fees Imposition By-law, 1993, No. 11631, as amended, to require the payment of additional application fees to recover the costs of preparation of the NCP.
  - F. Authorize staff to commence negotiations with the GVRD for using the reservoir site at 6287 - 128 Street for park purposes.







# INTER-OFFICE MEMO

TO: Manager, Area Planning & Development Division

FROM: Manager, Engineering Planning Division

DATE: May 31, 1996 FILE: 2350-006/2

---

RE: West Newton South NCP - Stage 2 Report  
Drainage & Financing

## Engineering Recommendations:

- That all servicing issues have now been resolved as outlined below.
- That financing of the NCP infrastructure will be provided by the developers with no funds being provided by the City other than those outlined in the Corporate Report on Eugene Creek Master Drainage Plan.
- The Stage 2 Report for the West Newton South NCP is now complete from an Engineering and Financing perspective and can be adopted.

## Discussion

The Stage 2 Report for the West Newton South NCP has gone to Council previously but the issue of drainage was the subject of a separate drainage study which has now been completed and has been before Council. Subject to Council's acceptance of the Engineering Department's Corporate Report and recommendations dealing with the Drainage Report, the Engineering Department is now in a position to report that acceptable solutions to the overall drainage issues for the NCP have been achieved as outlined in detail below.

The following is a brief outline of the servicing and financing requirements in the UMA Report.

## Drainage

The issues below are dependent upon Councils' acceptance of the Eugene Creek Master Drainage Plan. If this plan is not accepted by Council then the following issues may change significantly.

**Catchment Area 1** is required to upgrade a section of trunk on Boundary Drive West at an estimated cost of \$130,000. This item is proposed to be included in the new 10 Year Capital Program and if accepted, it will be eligible for Development Cost Charge rebate. If it is not included in the 10 Year Program, then it will be required to be constructed at the developers expense.

# WEST NEWTON NEIGHBOURHOOD 3

Neighbourhood Concept Plan

---

*Stage One - Final Report*

July, 1995

Prepared for:  
Owners and  
City of Surrey

**uma**

## ACKNOWLEDGEMENTS

This report was prepared through the on-going assistance of an active Steering Committee. Their commitment, assistance, and critique is gratefully acknowledged. Members of the Steering Committee included:

Mr. Tom Barry, Owner  
Mr. Narinder Gill, Owner  
Mr. Shangara Mangat, Owner  
Mr. Onkar Nijjar, Committee Chairman  
Mr. Peter Yeung, Owner  
Mr. David Tam, representing the City of Surrey

UMA  
Planning and Engineering Consultants

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Appendix 1 Model Building Design Guidelines

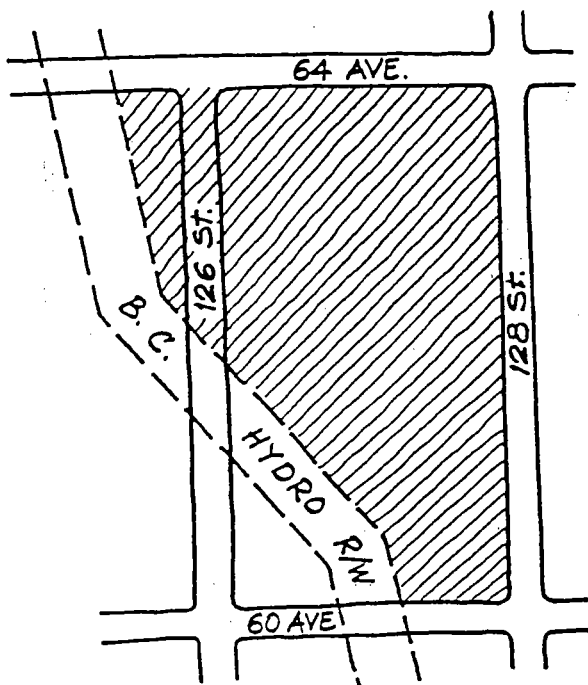
Appendix 2 Part A - Traffic Information and Analysis of Servicing Improvements

Appendix 2 Part B - Contributing Area to Sanitary Sewer, and Review of Water Distribution Adequacy

Appendix 3 Public Meeting Minutes

## 1.0 INTRODUCTION

This neighbourhood concept plan has been prepared on behalf of property owners in the area situated south of 64 Avenue, and extending to 60 Avenue. It is bounded to the west by the B.C. Hydro right-of-way, and to the east by 128 Street as illustrated on the accompanying sketch.



In area, this neighbourhood consists of approximately 34.8 hectares or about 86 acres. The study area comprises part of West Newton Neighbourhood #3 as identified in the Local Area Plan for Newton.

The Neighbourhood Concept plan (NCP) is the most detailed concept plan in the planning hierarchy in Surrey. General goals and policies are established in the community wide Official Community Plan. This Community Plan forms the basis for Local Area Plans which provides a land use and development framework for sub-regions of the City, such as Newton and Cloverdale. In turn, the NCP comprises a sub-unit of the Local Area Plan and is intended to include sufficient detail and information to act as a guide to future subdivision and rezoning in the neighbourhood. The NCP is expected to be in compliance with the land use policies as defined in the Local Area Plan. The proposals incorporated in the NCP, thus allow for implementation of the broader policies included in the Local Area Plan.

### 1.1 Some Important Characteristics of the NCP

A key element in the NCP is that a high degree of property owner involvement occurs throughout the planning process. The property owners contribute the majority of costs associated with the NCP, and the consultant is responsible directly to the owners who are represented throughout the project by a Steering Committee. Surrey staff participates in an observer capacity, and also is responsible for final approvals to ensure the Plan meets staff and Council policies.

The NCP process is designed to ensure the adequate provision of community facilities, both "hard" services such as utilities and roads, but also "soft" services such as playgrounds, library facilities, and other social services. By reviewing these items in a timely manner, Surrey is assured that the required services and community facilities will be available as development occurs. The owners gain, by knowing that their development projects can be approved as long as these are in substantial compliance with the NCP. Since the owners contribute directly to the planning process, final completion of the plan assures a majority consensus. This consensus is further enhanced by the City requirement that:

*"owners controlling 70% or more of the land area, or alternatively 51% of the owners with land in the NCP area must agree to undertake the project, and the same proportion must endorse the final concept, and the associated financial details".*

It is City policy to hold any current development applications in abeyance until the NCP process has been substantially completed. Applications are then reviewed in relation to their overall compliance with the NCP. Since servicing and soft cost data is also completed at that time, the finalization of the NCP greatly aids the approval process. In order for the NCP to be approved by Council a staff evaluation is required, followed by a review by Council. If acceptable, Council adopts the Plan by resolution rather than the more formal bylaw.

## 1.2 The Planning Process

In order to arrive at the final plan, input was solicited from the property owners, the general public and City staff. To facilitate this process, a Steering Committee of owners was established which met at frequent intervals with the UMA consulting team. A City planner also attended to monitor the process and provide a staff perspective. Following an initial familiarization meeting with the Steering Committee, stakeholder interests were reviewed, and owner objectives were examined, which led to the formulation of two concepts which were in general compliance with the Local Area Plan. These options were reviewed with the Committee. Following an initial public meeting (held July 25, 1994) and public opinions solicited through comment sheets, a preferred concept was arrived at. This concept went through several further modifications and Steering Committee review to lead to a draft plan.

A meeting on the draft concept was held September 28, 1994, and owner consent to the concept and principles of the draft plan were obtained during the same meeting. The draft was subsequently reviewed by the City which led to further changes, as well as additional planning and engineering background information. A revised concept and associated plans were reviewed with the Steering Committee early in 1995, and at a Public Information Meeting on March 23, 1995. Information in this report reflects the final modifications incorporated as a result of public as well as further Surrey staff comments.

Notices and minutes of the public meetings are included in Appendix 3 at the back of this document.

### 1.3 Report Stages and Approvals

This report has been issued in two stages. The Stage 1 Report deals with the planning concept, amenity contributions, and utility services such as sanitary sewer, water and roads. It also provides an overview of storm drainage. However since additional time was required to examine storm sewer issues and costs, a decision was made to deal with this in the Stage 2 report. This permitted earlier consideration by staff and Council of the other aspects of the planning process.

It should be noted that development applications made after this Stage 1 report is adopted by Council will not receive first or second bylaw reading until acceptance of the Stage 2 Report.





## 2.0 DESIGN CONCEPT AND LAND USE RECOMMENDATIONS

As noted in the introductory comments, the development proposals embodied in the NCP must be in adherence with the Local Area Plan. Some modification, based on more detailed planning and analysis and owner consent is possible where justified, and where approved by staff and Council.

### 2.1 The West Newton Local Area Plan

The applicable local plan for the study area is the West Newton Local Area Plan. It was completed in June 1993, and adopted in somewhat modified form by Council early in 1994. It provides the framework for this NCP. The total population projected within the Local Area Plan area (and reflecting some changes made since preparation of the Plan) is 19,458. A number of objectives as identified in the Local Area Plan, and with particular relevance to this West Newton NCP are reiterated here:

- ▶ *to minimize proliferation of unauthorized secondary suites, the plan should provide for a wide range of multi-family sites;*
- ▶ *... a variety of lot sizes and housing types should be provided;*
- ▶ *to make the community more attractive and livable, landscaping, planting of trees, and the use of design guidelines for new residential areas is encouraged;*

- ▶ *to promote outdoor recreational activities, an interconnected system of parks for passive and active recreation should be developed;*
- ▶ *to accommodate the servicing needs of the community as a whole, Municipal services should be designed and provided.*

The land used designations as identified in the Local Area Plan are illustrated in Figure 1 on the following page. Noteworthy is the attempt to concentrate higher densities close to 64 Avenue which is a major east west arterial road connecting Scott Road with the King George Highway and 152 Street. Lower densities prevail to the south end of the study area.

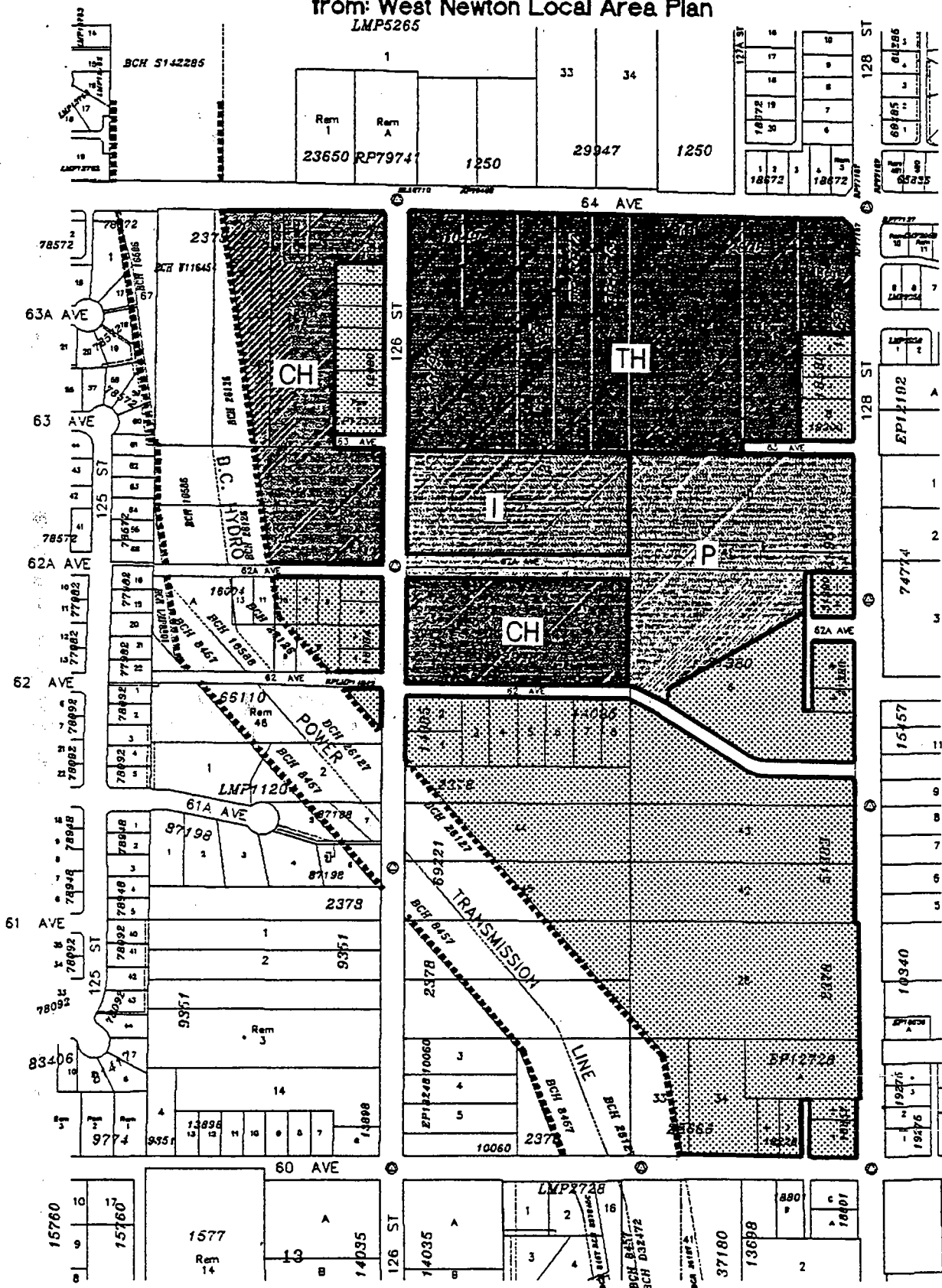
### 2.2 The Neighbourhood Concept






The development concept as presented in this document represents the final version of several initial options examined with property owners, the City, and as displayed at public meetings. The options varied largely in relation to lotting patterns. Overall land use must be in substantial compliance with the Local Area Plan.

# LAND USE CONCEPT

## from: West Newton Local Area Plan

LMP5265



-  SINGLE FAMILY      5 u/acre
-  CLUSTER HOUSING      6-10 u/acre
-  TOWNHOUSES      8-15 u/acre
-  PARKS AND OPEN SPACE
-  INSTITUTIONAL

**LOCAL AREA PLAN**  
 West Newton, Neighbourhood 3  
 City of Surrey

**Figure 1**  
 Local Area Plan



### 2.2.1 General Principles

The NCP planning framework is guided by some important principles. These are:

- The desire to include a variety of housing types as identified in the Local Area Plan. This includes conventional single-family lots, higher compact parcels (smaller lots), and still higher density town housing. This housing variety will provide for an integrated neighbourhood catering to a range of income levels and needs.
- Retention of existing significant tree stands wherever possible, to afford a pleasant and green community.
- The consolidation of higher density areas towards 64 Avenue, to provide convenient access to this major road, and to offer a neighbourhood focus.
- Retention and further development of the park space at 62 Avenue and 128 Street, with convenient access to neighbourhood residents.
- Adherence to the Model Building Design Guidelines prepared by Surrey which requires siting of buildings with consideration of natural characteristics. Also a major part of the guidelines require two storey houses to have a finished kitchen and living room on the main floor; with most bedrooms to be on the second

floor. This is to discourage later conversion to illegal suites. In addition balconies on the front or side elevations of the house are prohibited, and exterior colours are to be controlled.

- Building and lot design is to be further controlled by requiring all front yards to be landscaped with trees, lawns, shrubs and flower beds. Lawns only are not permitted.

### 2.2.2 Residential Use

The Plan closely follows the overall land use designations in the Local Area Plan (LAP) with one exception. The "cluster housing" area, as proposed in the Local Area Plan on the north side of 62 Avenue has been deleted in favour of single-family homes. This change received strong owner support, and was also favoured by the majority of people who attended the first public open house. The advantages of this include:

- improved continuity with other single-family areas to the south.
- a better definition is provided between the church and park which comprise a logical boundary between the higher density areas to the north. All higher density is now confined to one location, while the Local Area Plan would have introduced one node adjacent to the single-family area.

- overall neighbourhood densities are affected in only a minor way, as a redesignation of existing small lot single-family areas north of 63 Avenue in conformity with adjacent multi-family areas compensate for the loss of higher densities at 62 Avenue. Thus overall yields are not dramatically affected. The changes in land use designations can be observed through a comparison of Figure 1 and Figure 2.

The Concept Plan suggests slightly lower overall density for multiple-family housing areas (than maximums suggested in the Local Area Plan) to encourage greater tree preservation for the properties along 64 Avenue. This acknowledges that the best tree stands are on parcels facing 64 Avenue, and is further fostered by the higher density designation of these lots, which allows for more flexible and creative building siting.

It is proposed that a tree retention plan be required as a pre-condition to multi-family development. This should be prepared by a qualified arborist or landscape architect in accordance with Surrey's Tree Bylaw (see also Appendix 1).

Other features of this Plan include the incorporation of the existing single-family lots on 126 Street into the proposed compact housing area to provide for a more continuous and integrated development. Left on their own, it is unlikely that these currently older homes would be redeveloped to new dwellings, when all of the abutting area is slated for

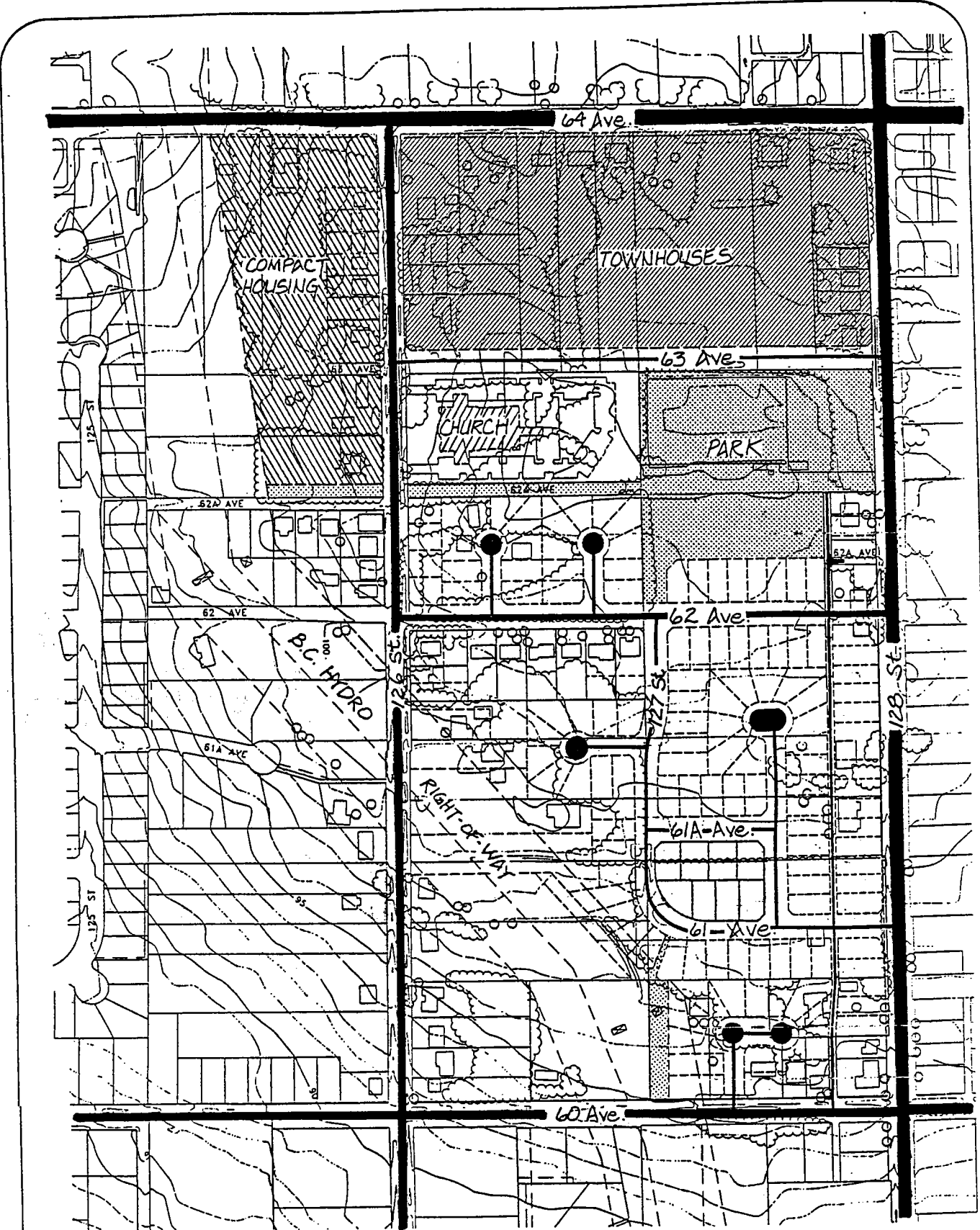
compact housing development. The single-family lots on 128 Street north of 63 Avenue have been integrated with the adjacent townhouse designated area for reasons similar to those cited above.

In the NCP all of the single-family areas are now proposed to be limited to lands south of the church and park.

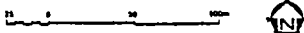
Originally the overall cluster housing concept (as referred to in the LAP) was intended to apply to more rural areas where land could be saved by clustering dwelling units within a certain portion of the site, retaining the remainder as open space. As envisaged in the West Newton Local Area Plan, the clustering concept applies more in the context of providing for compact housing forms - smaller homes on smaller parcels. This NCP uses the term "compact housing" with densities ranging from 6 to 10 units per acre. It is anticipated that the compact housing areas would be subdivided into smaller parcels than conventional single-family lots.

### 2.2.3 Community Uses

The concept allows for expansion of the neighbourhood park at 128 Street to a total of about 2.4 hectares, by expanding the site around the GVRD water reservoir and water treatment facilities. This is in direct conformity to the Local Area Plan. A 10-metre walkway strip on the alignment of 62A Avenue connects the park with 126 Street and a possible Hydro line walkway. Additional pedestrian access is available through adjacent roads (63 Avenue and 62 Avenue).



NEIGHBOURHOOD CONCEPT PLAN  
 West Newton, Neighbourhood 3  
 City of Surrey



DEVELOPMENT CONCEPT  
 NEIGHBOURHOOD CONCEPT PLAN

FIGURE  
 2

It is proposed that most of the hydro right-of-way be kept as natural open space, but to include a walkway or path aligned in a north-south direction. The walkway could be developed through an easement over the right-of-way, property acquisition (many parcels are privately owned), or a combination of the two. Where the right-of-way is privately owned, Surrey could negotiate acquisition upon required rezoning or subdivision. Other lands involving no redevelopment could be acquired by the City as funding permits.

The church being developed between 62A Avenue and 63 Avenue provides an important community facility, and also offers a potential opportunity for private day care, and possible meeting and social opportunities. In addition, it is assumed that a proposed public community centre (initially proposed north of 64 Avenue and outside this NCP area, but the specific location remains to be determined) will function as a desirable social and recreational community gathering place. This will offer opportunities for club meetings, indoor recreation and hobbies, small public meetings and a community day care facility serving the West Newton area. It is proposed that owners within the West Newton NCP contribute towards the capital cost of this facility.

During the course of NCP preparation a rezoning application for a private community hall to be located south of 64 Avenue adjacent to the BC Hydro right-of-way was considered by the Steering Committee and was also brought up for discussion at a public meeting. The Steering Committee rejected approval of the application due to

incompatibility with adjacent higher density residential development, local traffic patterns, and the fact that a community facility would be better situated north of 64 Avenue as proposed in the Local Area Plan. The private hall proposal was also reviewed at the public meetings on this NCP. Based on comment sheets completed by the public, the proposal for this private hall received strong opposition.

The overall land use concept is illustrated by *Figure 2*.

#### *2.2.4 Road Layout and On-Site Parking*

Proposed internal roads are in substantial conformity with the Local Area Plan. One change involves the continuation of 62 Avenue in its normal east-west alignment, versus the swing south as proposed in the LAP. This provides for better lotting and neighbourhood access. It is proposed that 62 Avenue will have "limited collector" classification, which is reinforced by establishing a pedestrian crossing at the 127 Street alignment to provide park access. Traffic calming on 62 Avenue would be introduced by using a "throttled" intersection at 127 Street, where the asphalt width is constricted, which slows down traffic. The paved road width would be reduced from the standard 11 metres to 8.5 metres. This type of control has a positive impact on reducing traffic speed.

Access to the townhouse area between 64 Avenue and 63 Avenue is ultimately to be restricted entirely to access points on 63 Avenue. With 64 Avenue being an arterial road, access points are undesirable. Since it will be some time until all of 63 Avenue is developed, interim access will be permitted to 64 Avenue, but it will be limited to right in and right out movements. These entrance points will in the longer term serve purely as emergency vehicle access points. Townhouse developers will be required to provide for long-term access to 63 Avenue, and prior to building completion will also have to construct the appropriate full road section of 63 Avenue which abuts their development. The entire right-of-way would have to be dedicated by owners of parcels north of 63 Avenue. It is noted that in the case of half road construction, the minimum road pavement width is 6.0 m.

On-street parking will be permitted on local and collector roads. Parking that is now permitted on arterial roads will be eliminated when the arterial road is upgraded to the ultimate four lane design. On collector roads, parking will be limited to one side of the street, in order to accommodate bicycle-friendly lanes. On-street parking restrictions on collector roads are illustrated in Appendix 2 maps.

#### 2.2.4.1 *Special Land Uses*

The area contains two special land uses, the church on 126 Street and the adjacent park. Parking lot entrances, and associated parking areas are depicted on *Figure 3*. Most of the principal property access points are or will be on 63 Avenue,

minimizing interference on the adjacent arterial roads. For the park area, parking will be provided in the curb lane on 63 Avenue, immediately adjacent to the park. The curb lane parking will be constructed by the Developer. Surrey Standard Drawing No. R-31 is enclosed for reference (*Figure T-13, Appendix 2*).

#### 2.2.5 *Transit Plan*

The proposed transit network is illustrated by *Figure 4*. Current routes are limited to 128 Street with stops at major intersections and at the alignment of 62A Avenue. B.C. Transit has advised that future routes are contemplated on both 64 Avenue and on 60 Avenue. The transit plan also provides information on the average walking time to each of the nearest existing or future transit stops, and identifies the boundaries from which stops can be reached within 3 or 4 minutes walking distance. Much of this NCP is within convenient distance from existing or proposed bus stops. The majority of population will be well within 3 minutes walking distance, with a minority requiring a 4 minute walk to a transit stop.

A long-term transit plan provided by B.C. Transit is incorporated in Appendix 2.



### 2.2.6 Pedestrian Circulation

Pedestrian circulation including sidewalks are depicted on *Figure 5*. This plan identifies existing and proposed sidewalks, crosswalks, and more informal walkways and trails. All of the arterial and collector roads will be provided with sidewalks on each side of the road (reflecting Surrey standards). Local roadways are supplied with sidewalks on one side of the road as depicted on *Figure 5*. Minor cul-de-sac roads will not have sidewalks.

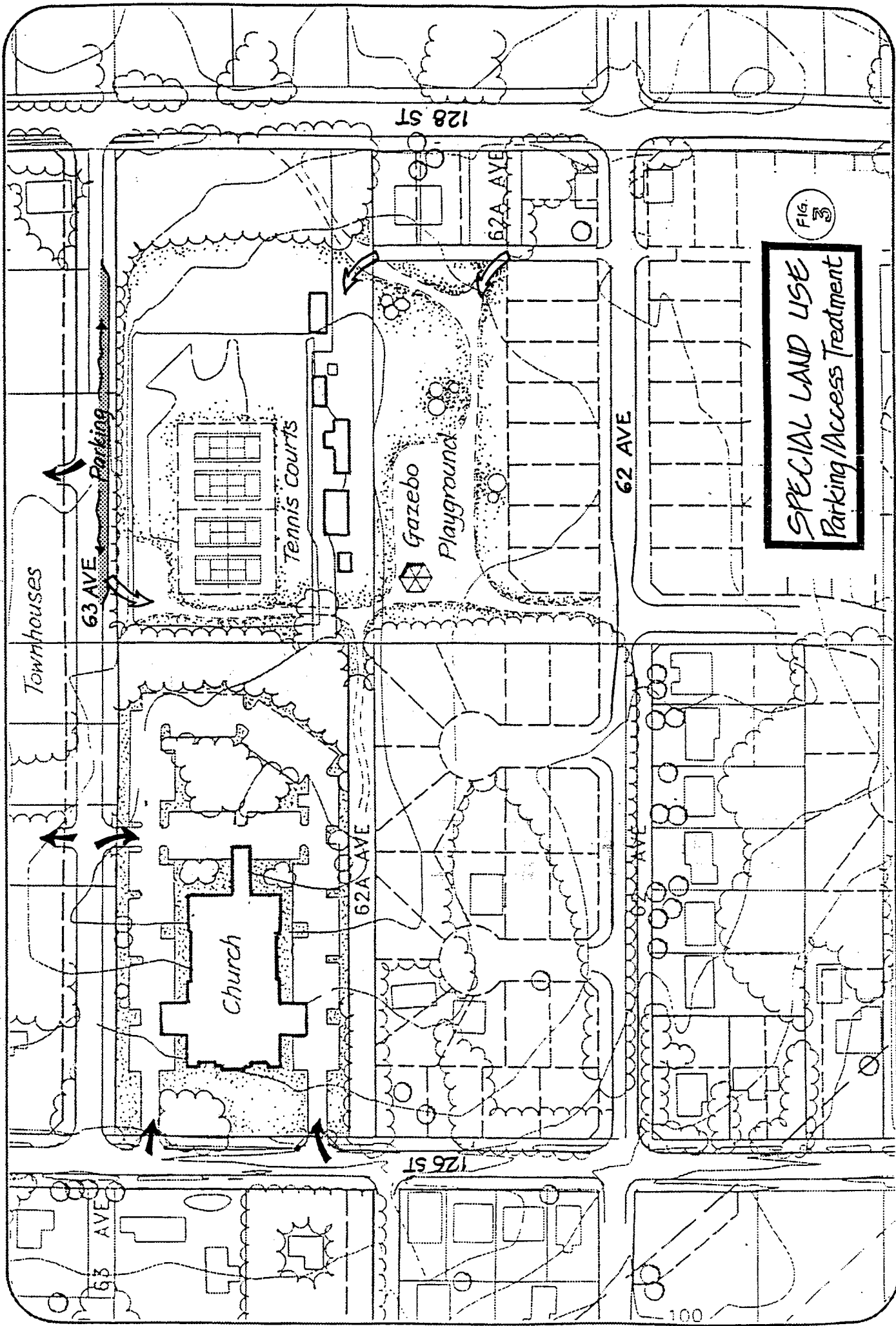
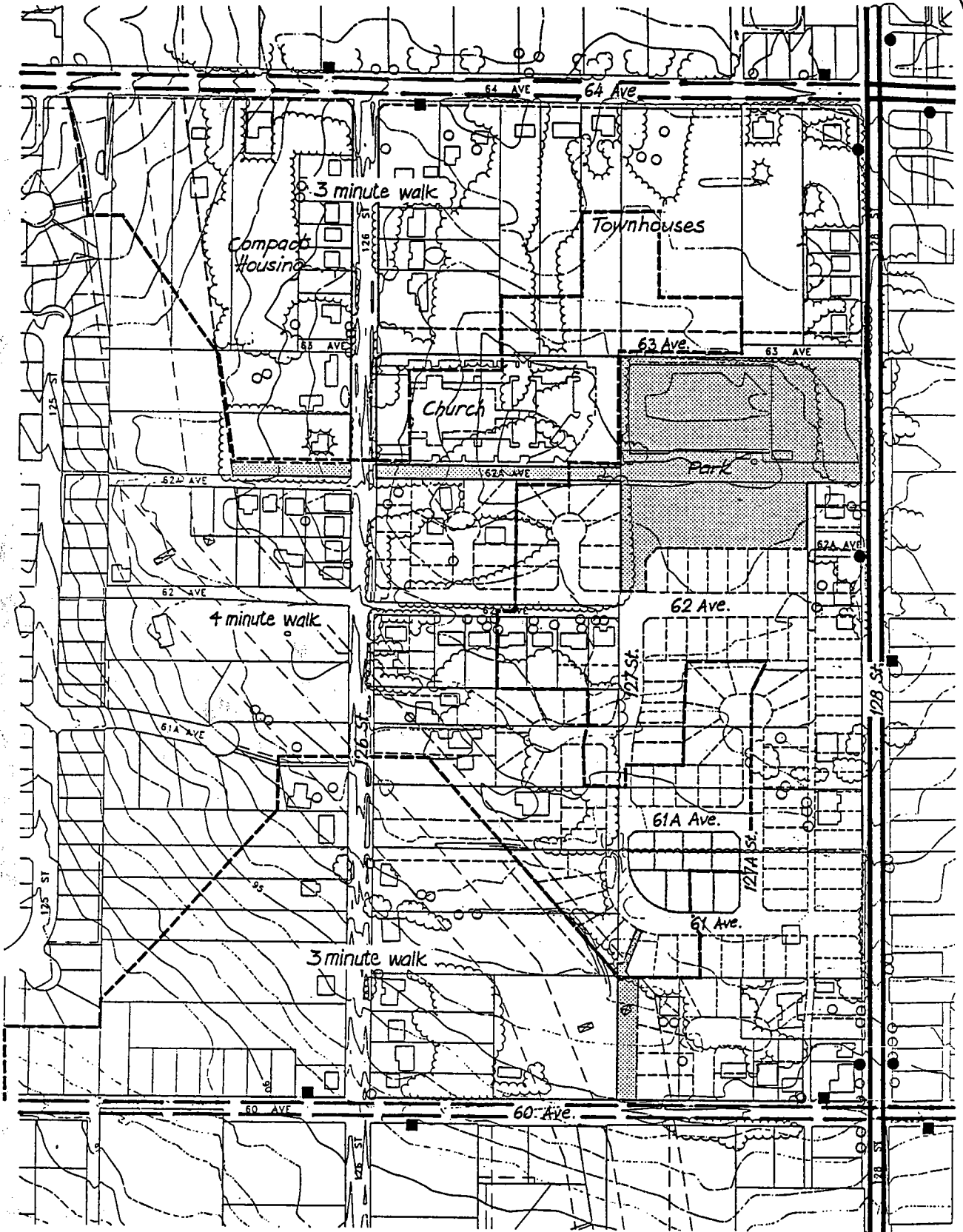


Fig. 3

**SPECIAL LAND USE**  
Parking/Access Treatment



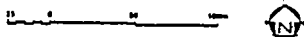
# TRANSIT STOP PLAN

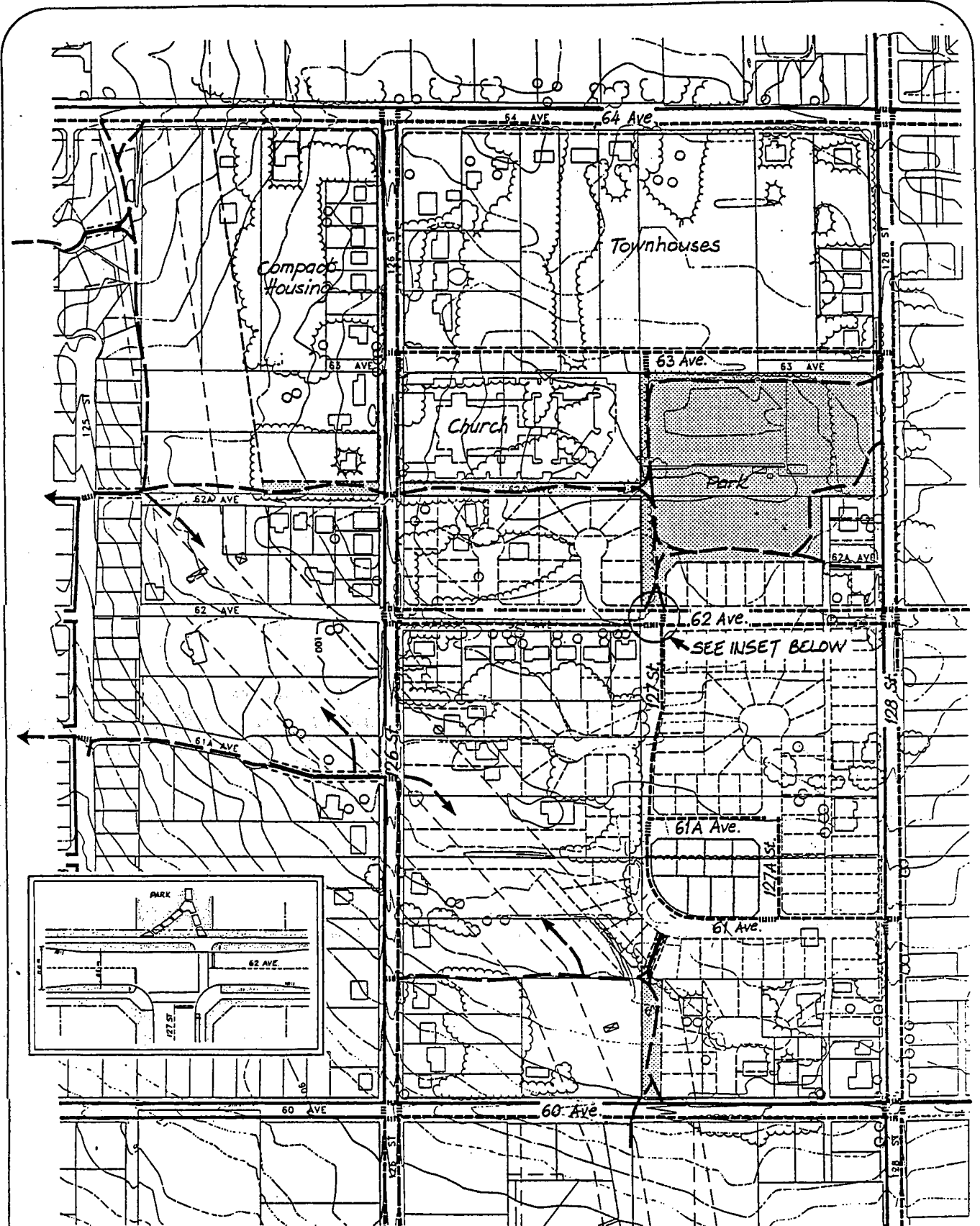
FIG. 4

NEIGHBOURHOOD CONCEPT PLAN  
West Newton, Neighbourhood 3  
City of Surrey

- EXISTING TRANSIT ROUTE
- - - PROPOSED TRANSIT ROUTE
- - - 3 MINUTE WALK TO BUS STOP BOUNDARY

- EXISTING BUS STOP
- PROPOSED BUS STOP



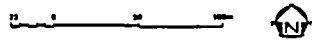


# PEDESTRIAN CIRCULATION PLAN

NEIGHBOURHOOD CONCEPT PLAN  
West Newton, Neighbourhood 3  
City of Surrey

- EXISTING SIDEWALKS
- - - - - PROPOSED SIDEWALKS
- ||||| CROSSWALKS (schematic)
- ===== WALKWAYS
- — — — — TRAILS

FIGURE  
5



A walkway system connects the neighbourhood to the park between 63 Avenue and 62 Avenue. A further walkway link to the Hydro right-of-way is offered along the 62A Avenue right-of-way, which will have pedestrian access only. The 62A Avenue walkway will be built and maintained by the Parks and Recreation Department. A multi-use path connects 61 Avenue with 60 Avenue, with a long-term east-west link tying to 126 Street and to a possible north-south Hydro line pathway. All multi-use pathways fronting or within developments will be built by the Developer.

At the throttled intersection of 62 Avenue and 127 Street a crosswalk is proposed. This crosswalk will connect directly to a park entrance. The schematic layout for this intersection is illustrated on an inset shown on Figure 5.

### 2.2.7 *Bicycle Circulation*

The bicycle circulation plan (*Figure 6*) illustrates both commuter routes and pathways for recreational cyclists. The following roads will have bicycle-friendly lanes on each side of the road:

- 128 Street
- 126 Street
- 64 Avenue
- 62 Avenue
- 60 Avenue

On arterial roads, bikeways are provided by widening the curb lane, with lane widths to be 4.25 metres. On collector roads such as 126 Street and 62 Avenue, bicycle-friendly lanes are accommodated by 4.25 metre curb lanes which allow for vehicles and cyclists. In addition, to

accommodate this lane width within the collector right of ways, parking is prohibited on one side of the collector roads. For example, it is suggested that no parking be allowed on the west side of 126 Street. On all other local roads, cyclists share the paved surface with vehicles as traffic is slow and very limited. For further information, reference should be made to Surrey's "Typical Pavement Markings for Standard Pavement Widths."

The recreational cyclist can conveniently access the park at 62 and 63 Avenues, by using local roads, and sharing the pavement on 127 Street. A bicycle lane is also provided in the multi-use path which connects 61 Avenue and 60 Avenue. From here, and from 62 Avenue, access is afforded to a potential pathway which would run along the B.C. Hydro line corridor. Location of a pathway here will depend on future property acquisition and easement locations. Use of the B.C. Hydro corridor reflects recommendations incorporated in the "Bicycle Blueprint" for Surrey.

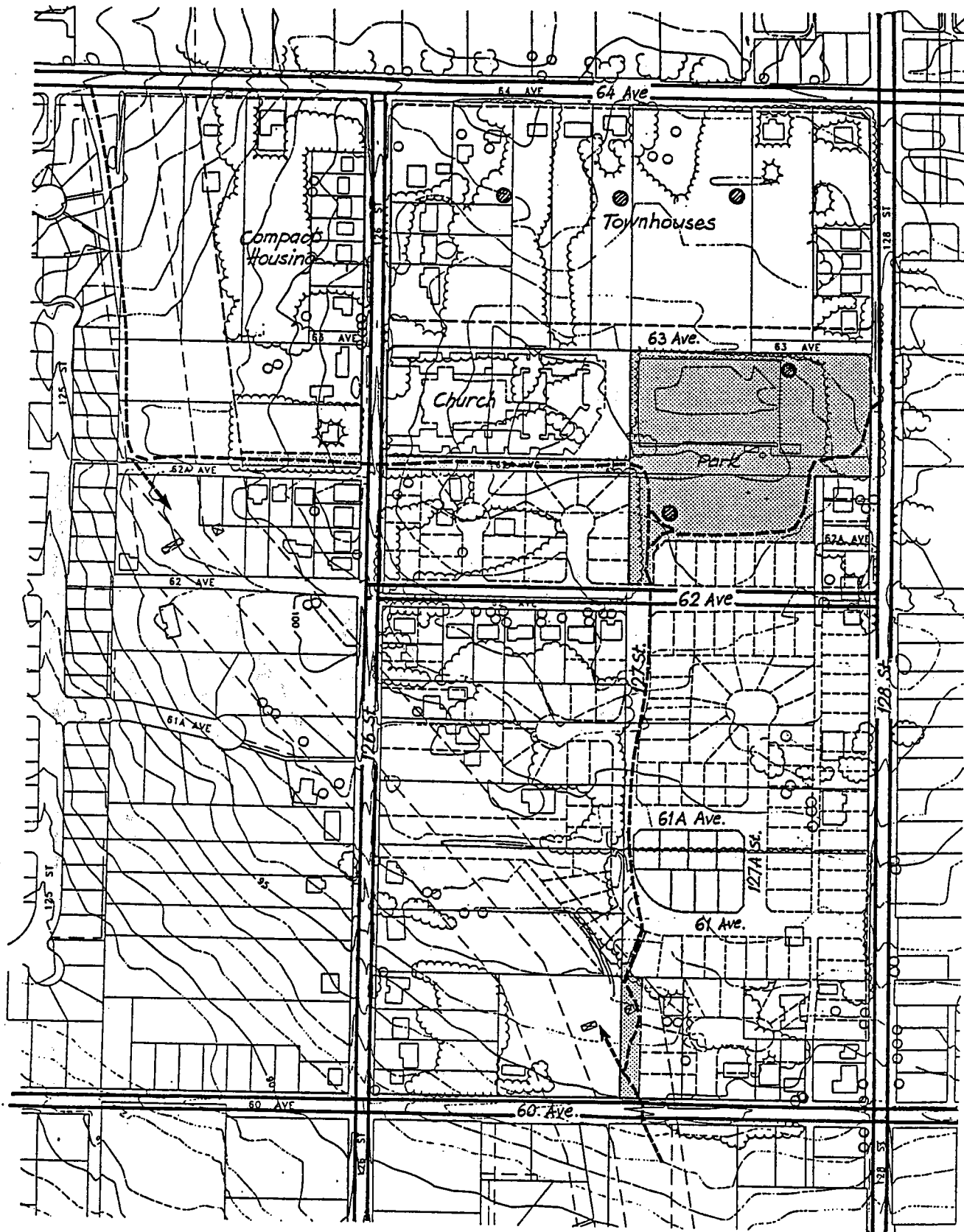
End of trip bicycle facilities should be provided for both the park site, and be incorporated within the multi-family development projects. It is recommended that the park/tennis court area be provided with a rack for at least 6 bicycles. Another rack should be provided by the playground. Both racks can be simple in design, as usage is limited to short-term storage.

For the multi-family housing sites it is proposed that end-of-trip facilities be more permanent in nature, and be incorporated within the buildings. According to the Surrey "Bicycle Blueprint" publication, it is recommended that lockers be provided for residents at a ratio of 1.5 bicycle spaces per unit. We believe this ratio should be followed as a guideline, with specific requirements determined upon rezoning, and reflecting the proposed building occupant demographics.

### 2.2.8 Green Space

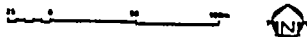
In arriving at the concept plan every effort has been made to retain existing green space. The area has limited current tree cover, with most of the larger tree stands confined to the parcels fronting 64 Avenue, and to some currently vacant land near what will be 61 Avenue. Other green space is defined mainly by several smaller stands of trees, and by vegetation in the GVRD reservoir area. The park proposed for the reservoir site will comprise one of the more important neighbourhood green spaces. Trees and grass will largely occupy the southern portion of this site. Some existing trees immediately adjacent to the 63 Avenue right-of-way can also be retained. The multiple-family sites between 63 and 64 Avenues offer an opportunity for building clustering, and key trees should be preserved through careful location of buildings. A tree retention plan should accompany all applications for development.

Remaining areas in the neighbourhood have the opportunity to preserve trees in front and side yards. An overall plan identifying key green areas is provided by *Figure 7*. Buildings should be sited to preserve these green spaces to the maximum extent possible.



## BICYCLE CIRCULATION PLAN

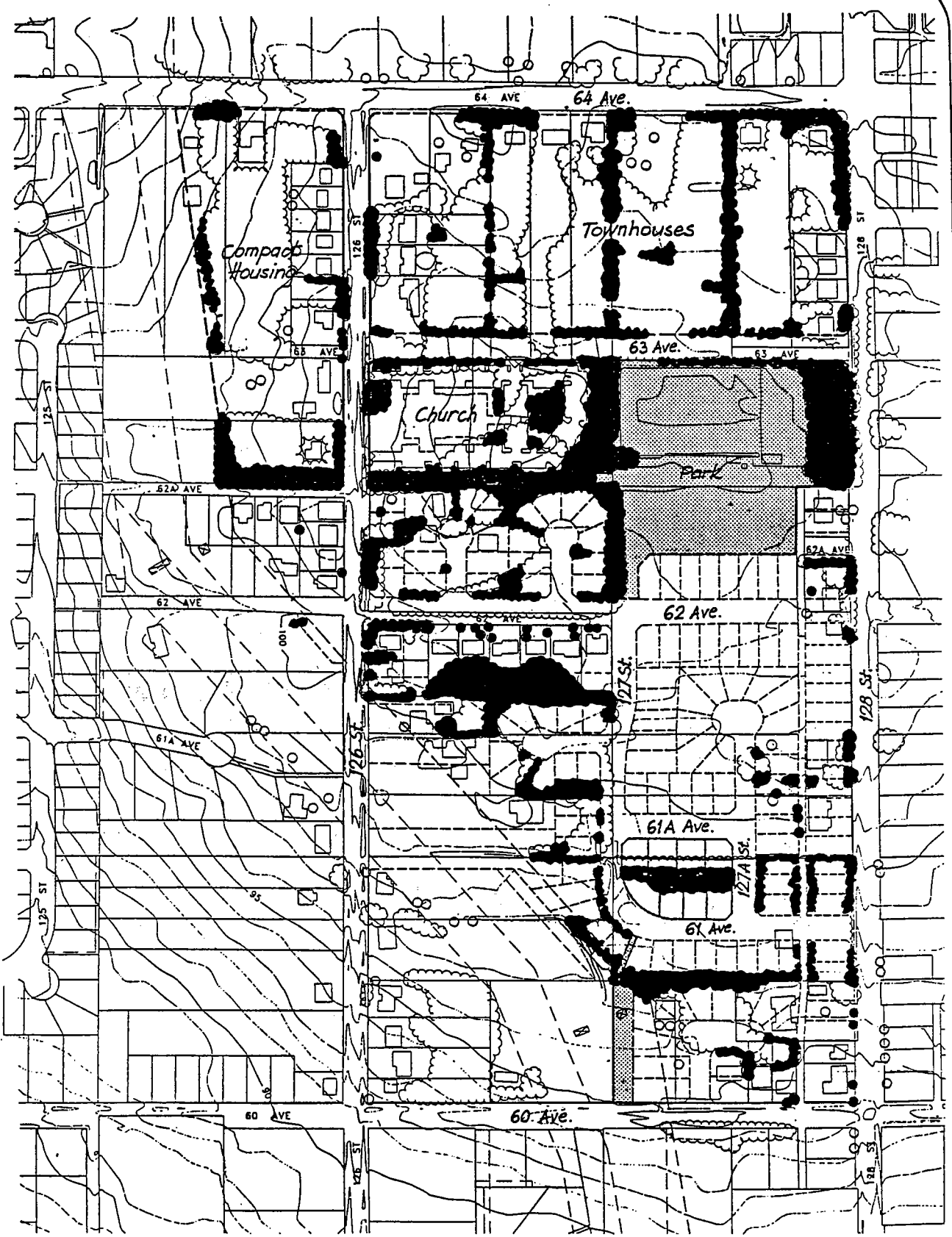
NEIGHBOURHOOD CONCEPT PLAN  
West Newton, Neighbourhood 3  
City of Surrey



- COMMUTER CYCLIST
- - - - - RECREATIONAL CYCLIST
- BICYCLE RACKS

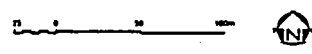
FIGURE  
6

February, 1995 UMA



NOTE: Specific tree preservation areas to be determined upon rezoning/subdivision

NEIGHBOURHOOD CONCEPT PLAN  
West Newton, Neighbourhood 3  
City of Surrey



**GREEN SPACE PLAN**  
(areas to be preserved)

FIGURE  
7





### 3.0 DEVELOPMENT YIELD

The final concept plan was completed in March 1995, and all development data refers to those drawings. The overall amount of road, housing forms, lot yield and other salient characteristics of the study area are summarized in the table below.

Table 3-1  
SUMMARY TABLE

Type of Use	Amount of Land	Total Units (Estim.)	Projected Population
Townhouses	6.8 ha	204	570
Compact housing	3.4 ha	68	190
Single-Family lots**	13.6 ha	171 (incl 14 lots which would not be subdivided further)	600
Institutional (Church)	1.7 ha	na	na
Park site and walkways	2.7 ha	na	na
Total Roads*	6.5 ha	na	na

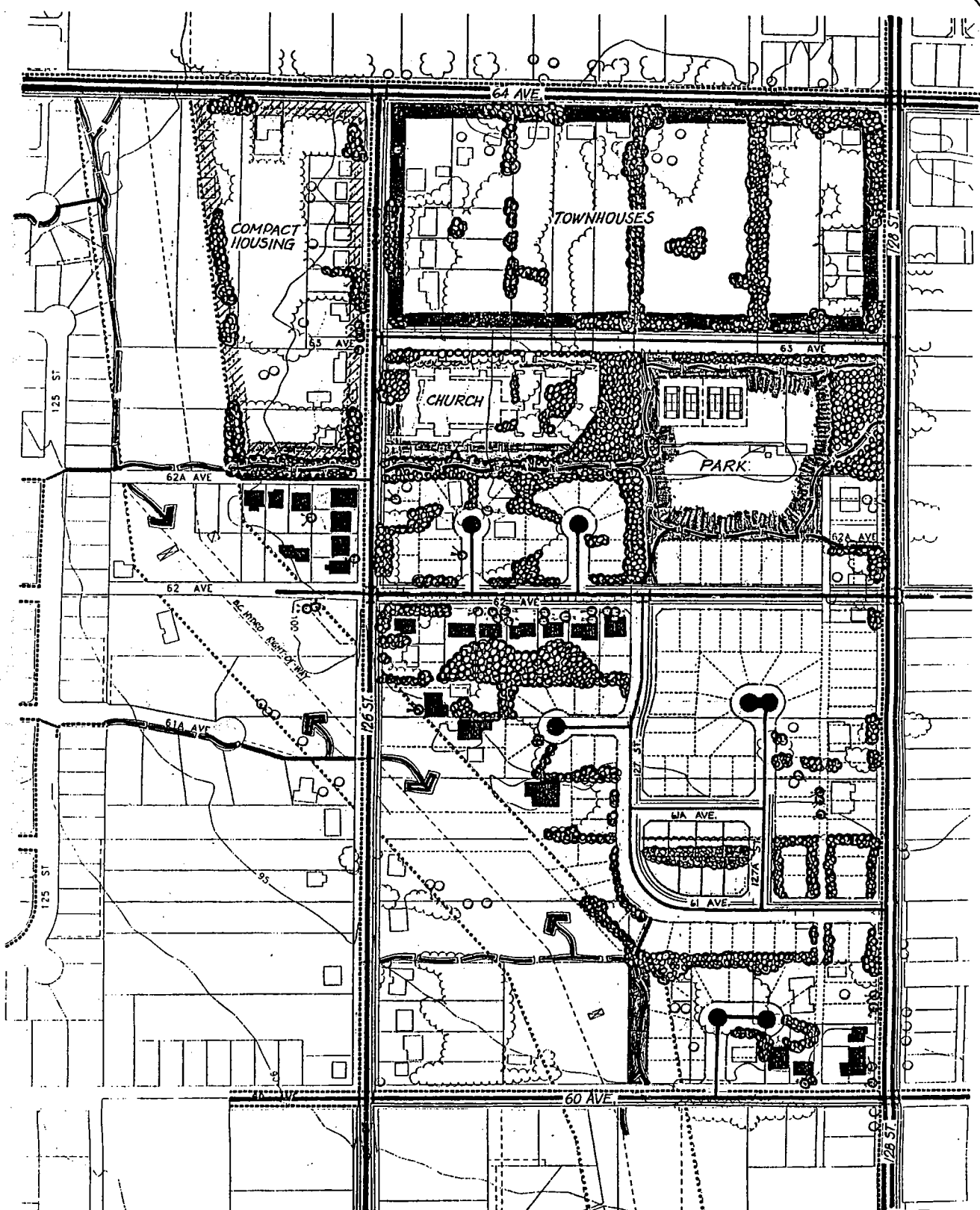
\* includes 1/2 of 64 Avenue and 128 Street

\*\* includes 14 existing lots with no development potential, and assumes long-term redevelopment of existing lots on 127A Street at 60 Avenue. Net number of potential new lots is 157.

The development concept indicating road layout and lotting patterns is illustrated by *Figure 8* on the page following. As indicated on the Plan and in the preceding table, a total of 443 dwelling units, of all types, are projected. Of this total, 14 units are existing and unlikely to be resubdivided, resulting in 429 net new housing units. The ultimate total NCP population is projected at about 1360 residents.

It is recognized that the pattern of single-family subdivision requires the cooperation of the applicable owners. The concept is based on the main properties proceeding under "one development application". If on the other hand, owners proceed individually, some lotting adjustments may be required and a drop in the potential lot yield should also be expected. However, the integrity of the development concept should be retained (see also Section 7.0 General Implementation).

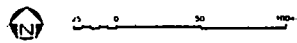
Some adjustment to property lines may also be necessitated upon detailed surveys, to be determined through the subdivision approval process.



# DEVELOPMENT CONCEPT

FIG. 8

NEIGHBOURHOOD CONCEPT PLAN  
West Newton, Neighbourhood 3  
City of Surrey



- ARTERIAL ROAD
- COLLECTOR ROAD
- MINOR COLLECTOR ROAD
- LOCAL ROAD

- SINGLE FAMILY
- COMPACT HOUSING
- TOWNHOUSES
- INSTITUTIONAL
- PARKS AND OPEN SPACES

- EXISTING SIDEWALKS
- PROPOSED SIDEWALKS
- CROSSWALKS
- WALKWAYS
- TRAILS

JULY, 1995 umc

**4.0 ENGINEERING PARAMETERS AND COSTS**

To arrive at a general indication of required utility and road improvements, an analysis has been made of both the on-site and the off-site improvements and their associated costs. Further details of the engineering analysis and cost recovery options and recommendations for each utility are contained in the Appendix 2 to this report. Transportation and each of the utility services is described below.

**4.1 Roads**

The study area is currently serviced by roads which generally follow a grid pattern. Figure 8 shows the road hierarchy plan within Sector 3. Both 64 Avenue and 128 Street are classified as arterial roadways, with 60 Avenue classified as a major collector road. Minor collector roads include 62 Avenue and 126 Street. The remainder of the roads within the study area are local roads which include through locals and cul-de-sacs. This information is summarized in Table 4-1 below. Details regarding roadway features can be found in Schedule "A" of Surrey's Subdivision and Development Bylaw No. 8830.

**Table 4-1  
Road Hierarchy**

Road	Classification
64 Avenue	Arterial
128 Street	Arterial
60 Avenue	Major Collector
62 Avenue	Minor Collector
126 Street	Minor Collector
63 Avenue	Through Local
127 Street/61 Avenue	Through Local
All other roads	Limited Local

It is noted that the curve joining 127 Street and 61 Avenue will have a minimum centreline radius of 50.0m.

All of the roads constructed within or adjacent to Sector 3, will utilize the City of Surrey Urban Forest standard roads. Figures T-10 and T-11 in Appendix 2 include the typical cross sections for each road classification. Reference is also made to Surrey's Standard Document.

Upgrading of 64 Avenue to a 19.0m arterial roadway is included in the current Ten year Capital Plan. Upgrading and reconstruction of 64 Avenue from 120 Street to 138 Street is scheduled in 1995. Upgrading of 128 Street from 64 to 72 Avenues to 19.0m wide arterial road is shown in the Ten Year Capital Plan.

Other roads will have to be added to the Ten Year Capital Plan as a result of the overall development that is expected within West Newton. The traffic impact study for West Newton indicated that it would be necessary to widen 128 Street from the existing two-lane roadway to the ultimate four lane arterial with left turn channelization (required before year 1999, between Highway 10 and 72 Avenue).

Therefore, upgrading of 128 Street from Highway 10 to 64 Avenue should be included in the Ten Year Capital Plan.

#### 4.1.1 Cost Estimates

It was assumed that Sector 3 would be responsible for upgrading half of the roadway on the following streets: 60 Avenue between the Hydro right-of-way and 128 Street, 126 Street between 63 Avenue and 62 Avenue. Sector 3 NCP participants will also be responsible for the full upgrading of 126 Street between 64 Avenue and 63 Avenue and 62 Avenue between 126 Street and 128 Street. In fact, the Developer is expected to upgrade all frontages except for arterial roads unless they are specified as a Development Coordinated Work at the time of the Servicing Agreement.

For the benefit of Developers, a preliminary cost estimate for the upgrading of collector roadways was completed. A detailed breakdown of the roadway costs is included in Appendix 2 (Tables T1, T2 and T3).

It was recommended in the West Newton Traffic Impact Study that all arterial road reconstruction adjacent to the Sector 3 be completely funded through DCCs. Construction cost estimates for these roads can be found in the West Newton Traffic Impact Study.

#### 4.1.2 Intersection Treatments & Signalization

Figures T-5 through T-8 in Appendix 2 illustrate the ultimate laning configuration of the major intersections within the study area. The proposed intersection control devices within Sector 3 is also included in the Appendix as Figure T-4.

Currently there is one traffic signal within the study area which is at the intersection of 64 Avenue and 128 Street. The West Newton Traffic Impact Study investigated the signal warrants at the intersection at 126 Street and 64 Avenue. The Level of Service (LOS) that was predicted at this intersection in 1999 and 2004 varied from LOS D in 1999 to LOS E in year 2004. The signal warrant concluded that there was insufficient warrants for a signal at this intersection. The warrant study did not take into consideration future accidents that may occur at this intersection. The other major intersection in the study area, 60 Avenue and 128 Street has an acceptable intersection LOS so a signal warrant was not performed at this intersection.

#### 4.1.3 Results of the Traffic Impact Study

The West Newton Traffic Impact Study examined the road network impacts of Sector 2 and 3 NCP development. This included the development of "infill" areas within the West Newton Neighbourhood, the development of the Penreal commercial development on 72 Avenue and 120 Street, opening of Tawamanis Secondary School on 66 Avenue and the expansion of Kwantlen College.

Background traffic growth was assumed to increase at a rate of six percent per year compounded annually.

It was found that all of the above-mentioned development and background traffic growth would have a significant impact on the existing and proposed road network in West Newton. The actual development of the NCP areas, will have only a slight impact on the road network.

The most significant effect will be at the intersections that the Sector 3 road network makes with the surrounding road network.

Projected traffic volumes for the roads in Sector 3 are included in Appendix 2. Traffic volumes are shown for the horizon year 1999 when half of the development is assumed to be completed and for 2004 when all of the development is assumed to be completed. The traffic volumes shown in these figures represent the existing 1994 traffic plus the background traffic growth on arterial intersections, and development of the other land uses as noted earlier.

#### 4.2 Storm Drainage

West Newton Sector 3 drains in three directions, and drainage catchment areas were delineated for the study area using digital contour plans obtained from the City. Catchment Area 1 is the northwest subcatchment approximately 10.4 ha in area which drains west on 64 Avenue. The land uses proposed within this catchment are mainly compact cluster housing and townhouses with a few single-family lots. Catchment Area 2, the

northeast subcatchment with an area of approximately 7.7 ha drains to the north to West Newton Sector 2 and is designated for future multi-family townhouses. The majority of the study area lies in Catchment Area 3, approximately 24.9 ha which drains to the south toward Highway 10 and the 128 Street storm sewer system. Single-family lots are proposed within Catchment Area 3.

The impact of development for a portion of West Newton is mitigated downstream by the Boundary Park Detention Pond located in located within Boundary Park Subdivision developed by Genstar Development Company. Catchment Area 1 eventually drains into this facility. It was understood that there is sufficient volume in the pond to accept flows from the contributing catchment, however a review of the adequacy of the pond will be completed as part of the Stage 2 work.

The impact of Catchment Area 1 on the downstream storm sewer system to Boundary Park Detention Pond was reviewed. In general, the increase in urban runoff due to proposed land uses for the catchment does not significantly affect the system. Just downstream of 64 Avenue at 123A Avenue, the sewer runs along a side yard right-of-way. This pipe was designed to be surcharged under the 100 year condition, and the catchment increases the hydraulic grade line (HGL) by 0.03 m. Three pipe sections on Boundary Drive West will be surcharged an amount ranging from 0.16 to 0.33m under the 5-year post-development condition, and the existing surcharge through a small section just

upstream of the detention pond will rise slightly. However it should be noted that as other areas within the LAP develop, the cumulative effects of increased flows will worsen surcharge conditions. For example, future development flows from the entire area draining into the 750mm diameter storm sewer downstream of 64 Avenue through the side yard right-of-way will result in unacceptable surcharge conditions. The fully developed 100-year flow is 3.01 m<sup>3</sup>/s, while the pipe capacity is 1.31 m<sup>3</sup>/s. To address the expected flows, a drainage servicing strategy will be outlined in the Stage 2 report.

Catchment Area 2 drains north to Sector 2 which almost entirely drains to Cougar Creek. As a result, and the contributing catchment area from this NCP is relatively insignificant. Downstream drainage planning to take into account Catchment Area 2 was confirmed with the consultant responsible for preparation of the NCP for West Newton Sector 2. Development applications in this catchment may be required to wait until the Sector 2 NCP report is completed, as the timing of Cougar Creek detention improvements are not known at this time.

An expanded drainage analysis was completed for Catchment Area 3 which ultimately discharges into Eugene Creek. In accordance with the current 10-Year Servicing Plan, construction of a community detention facility adjacent to J.T. Brown Elementary School could address increased flows expected from development, however it is understood that Council has recently adopted a new drainage policy. It is not desirable to have ponds adjacent to a school site, and

a public consultation process will be required for the siting of future detention facilities. As a result, consideration will be given to a stormwater alternative which involves directing flows through a trunk storm sewer to the lowland as part of Stage 2 work.

The study area is currently serviced by a system of small diameter storm sewers and ditches. Storm sewers exist along parts of 64 Avenue and 128 Street. To service the future urban land uses, a fully piped system is proposed. Storm servicing requirements by the Developer will include the following pipe upgrading: 375mm diameter storm sewer on 64 Avenue west of the intersection with 128 Street which is currently 300mm diameter and 450mm diameter storm sewer on 128 Street from 63A Avenue to north of 64 Avenue which is currently 375mm diameter, and 525mm diameter storm sewer from north of 64 Avenue to 66 Avenue which is currently 450mm diameter. Construction of storm sewers within the study area will be the responsibility of each Developer as required in accordance with the Subdivision Control Bylaw. If catchments are adjusted during the subdivision process, required pipe sizes will have to be verified. The proposed layout of storm sewers is shown in *Figure 9*.

#### 4.3 Sanitary Sewer

At present, the study area is largely unsewered. Downstream sewers exist to the west on 64 Avenue, to the east on 128 Street, and to the south on 60 Avenue. Flows at the discharge points were routed through the City's trunk sanitary sewer

model to determine downstream impacts. Capacity exists in the downstream systems to allow for most of the development proposed in the NCP. The remaining sanitary capacity will be reviewed at the time of each application as this capacity may be taken up by developed areas within the LAP. Once this occurs, some improvements will be required. One such improvement is a proposed 375mm diameter sanitary sewer on Highway 10 to tie into the existing sewer on 123 Street. This pipe is considered a trunk sewer and should be included in the Ten Year Capital Plan.

Similar to storm drainage, sanitary catchments were delineated, and a fully piped system has been proposed to service the future urban land uses. A schematic of the proposed sanitary sewer layout is shown in *Figure 10*. Construction of sanitary sewers within the study area will be the responsibility of each Developer as required in accordance with the Subdivision Control Bylaw.

#### 4.4 Watermains

The NCP study area is provided with many water supply and distribution facilities. The GVRD Newton Pump Station and Reservoir is located at 62A Avenue and 128 Street. The study area is within the 135 m HGL pressure zone and is well serviced by existing 300mm diameter grid mains on 126 Street from 60 to 62A Avenues, 60 Avenue west of 126 Street, on 64 Avenue, and feeding from the Reservoir on 62A Avenue. It is understood that other large diameter mains such as the 900mm diameter steel main on 62A Avenue, 126 Street, and

64 Avenue and the 600mm and 750mm diameter mains on 128 Street are unavailable for supplying the study area. The City's ultimate water grid map shows additional grid mains to be constructed along 60 Avenue and a portion of 128 Street.

Within the NCP, the proposed servicing consists of distribution mains along local roads which loop into existing mains. A review of the required design flows to service proposed NCP development was completed. Available fireflows were determined at two critical locations. It was found that a 300mm diameter watermain may need to be extended from 64 to 63 Avenues on 126 Street and 128 Street to service smaller townhouse parcels. For single family, adequate fireflows were found with 200mm diameter mains even at the 127A Street cul-de-sac.

*Figure 11* is a schematic of the proposed watermain network. The proposed watermain system is adequate to meet domestic and fireflow demands generated by the proposed land uses, and the internal watermain network will be constructed by each developer as required. Oversizing costs if required will be paid by the City for proposed grid mains to 300mm diameter. Each developer will be required to demonstrate that the system as extended will be capable of meeting interim and ultimate fireflow conditions with regard to flow, residual pressure, and velocity in accordance with the City's Design Criteria.

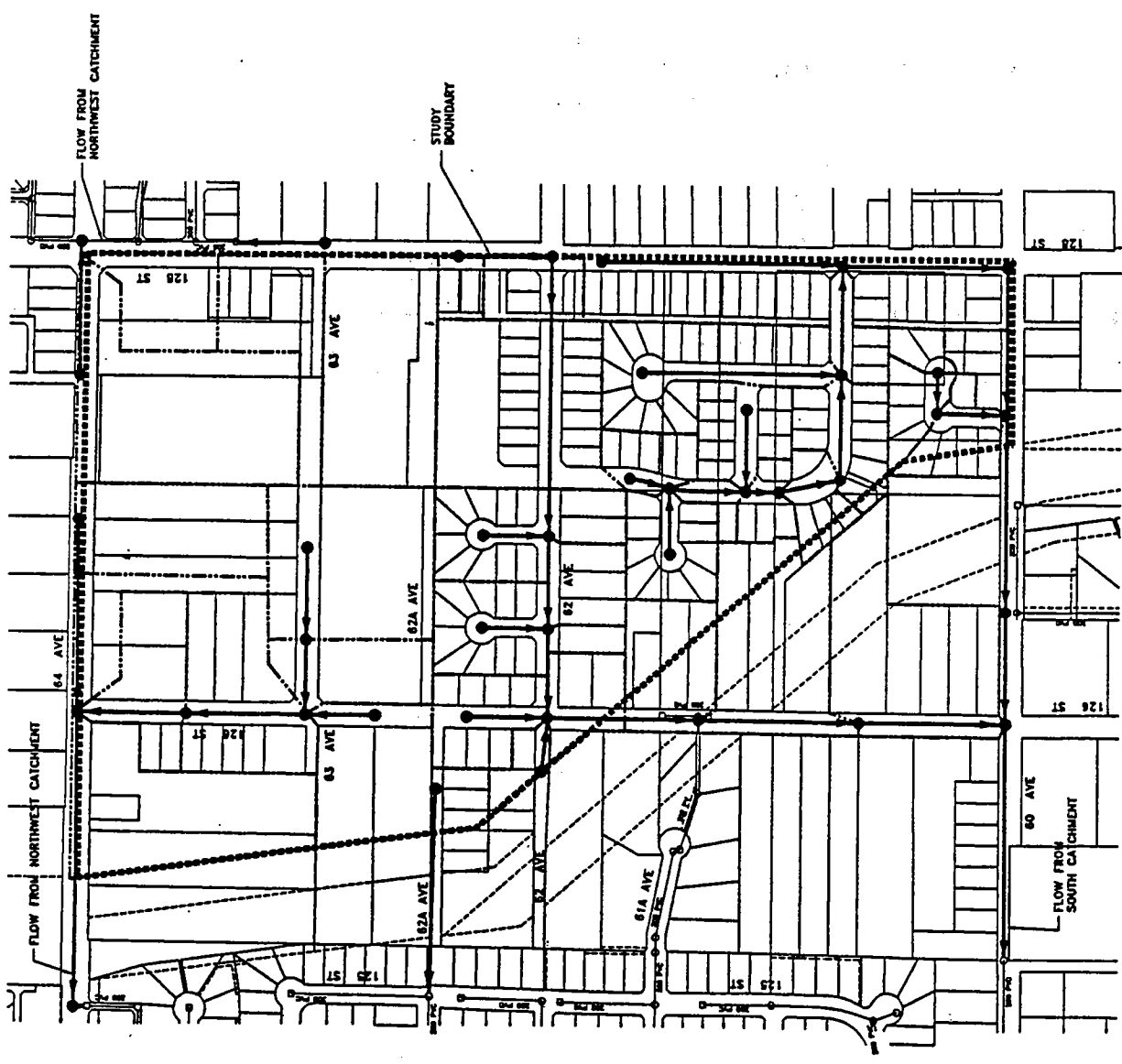


#### 4.5 Hydro, Telephone, Cable and Streetlighting

All extensions of the utility systems into the study area will be located underground as required by the City's Subdivision Control Bylaw. Ornamental streetlighting will be provided by developers on all streets.

Further details on utilities are incorporated in Appendix 2.





- LEGEND**
- STUDY BOUNDARY
  - CATCHMENT BOUNDARY
  - EXISTING SANITARY SEWER
  - PROPOSED SANITARY SEWER

FIGURE 10

PROPOSED SANITARY SEWERS

NEIGHBOURHOOD CONCEPT PLAN  
 West Newton, Neighbourhood 3  
 City of Surrey

Scale: 0, 50, 100, 200

North Arrow

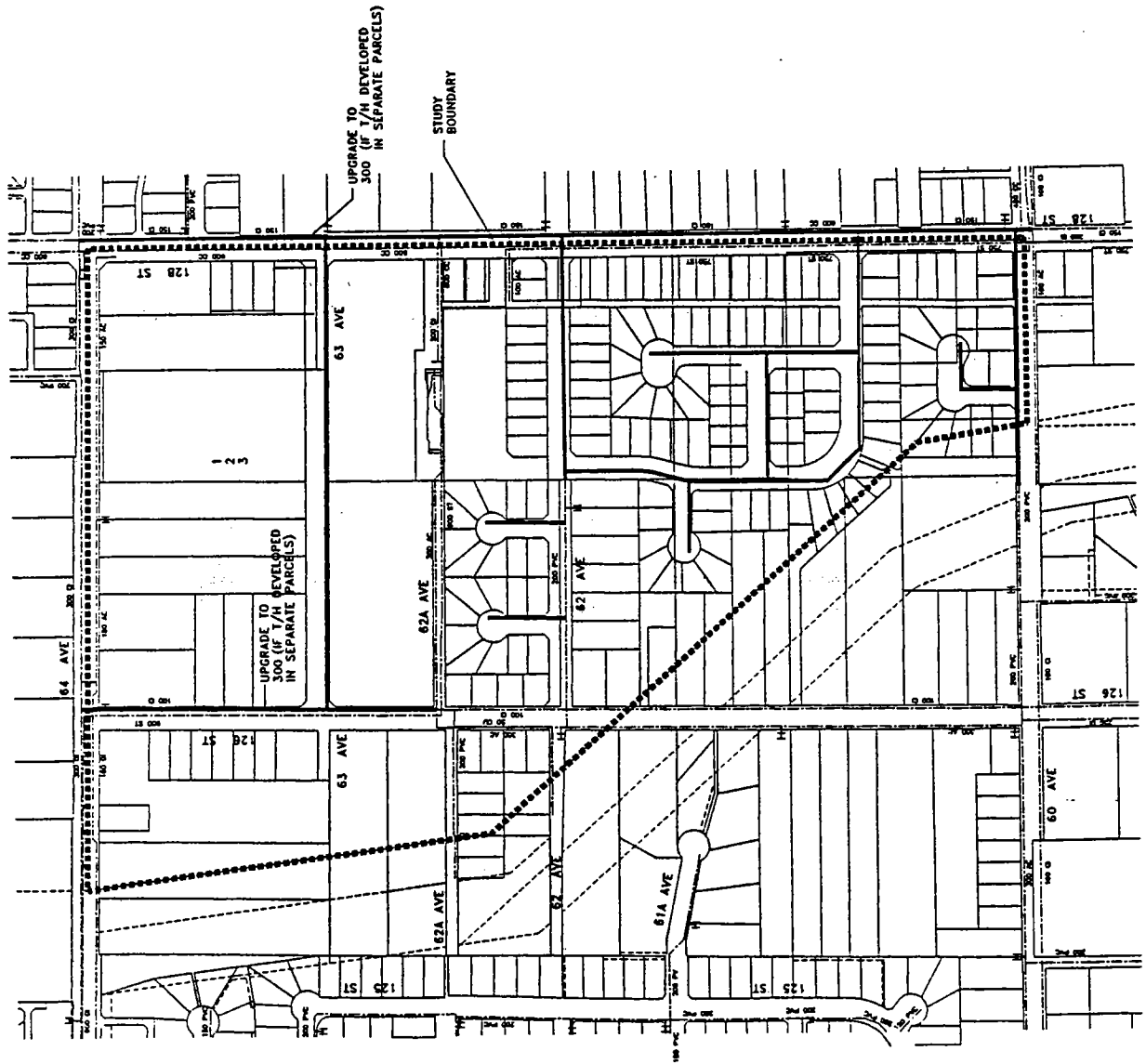


FIGURE 11

PROPOSED WATERMANS

**NEIGHBOURHOOD CONCEPT PLAN**  
 West Newton, Neighbourhood 3  
 City of Surrey





## 5.0 FINANCIAL IMPLICATIONS AND AMENITY COST SHARING

A critical consideration in the gradual implementation of the NCP is equity between property owners. A concerted effort has been made to maximize development yields over each property while adhering to the planning design principles. In order for development to proceed the City must also be satisfied that utility improvements and expansion will occur in accord with the Plan, and in addition the burden of other costs associated with new residents in the area must be dealt with. Of particular importance are general costs associated with improving community services in order to cope with the added population. This is dealt with in the following section.

### 5.1 Amenity Considerations

New growth in Newton will place an added strain on protective and social services in the City. While it is recognized that new development will also yield benefits (through added tax revenue, new facilities, economic growth), some of the direct burden of growth is proposed to be dealt with on an equitable basis through a financial contribution based on each new housing unit or lot. This includes consideration of park improvements, fire protection, library services, and police protection. To allow development to proceed expeditiously the owners of the NCP area are prepared to front end a contribution towards these costs, based on the formula described below. The financial contribution would be payable upon rezoning or subdivision approval.

### 5.2 Calculation of Amenity Costs

Some basic data on the capital and associated costs related to amenities have been provided by Surrey as part of the Local Area Plan calculations. This data has been considered in arriving at the owner contributions towards development of needed infrastructure to serve development in the NCP area.

#### 5.2.1 Park Facilities

For development of the park at 62 Avenue and 128 Street staff from Surrey parks and recreation have indicated a preference for a soccer field and baseball diamond. However, facilities such as a soccer field are not practical given the load-bearing capacity of the reservoirs, and can not be accommodated within the remaining park area. It is therefore proposed that the "GVRD portion" of the park be provided with 4 tennis courts, and a small paved area with a basketball hoop. These facilities are found in many neighbourhood parks, and will provide an important amenity to the local neighbourhood. These uses are also compatible with the GVRD water reservoir, and are accepted in principle.

It is desirable to also include an allowance for development of the remaining park area. Having a developed park completed shortly after building of new residences will also aid the marketing of housing units in the NCP area which benefit from this immediate amenity. In many new residential areas, parks are

provided years after housing construction due to financial constraints. The owner contribution to park development should greatly accelerate this process.

It is proposed that the remaining park area would consist of passive recreation facilities and an adventure play area to serve neighbourhood children. The proposed adventure playground would occupy about 1/2 acre and include playground equipment such as slide(s), climbing nets and platforms and similar equipment. Equipment capital costs are estimated at \$25,000, while base preparation, including edging materials, landscaping, access pathways and a seating area will amount to an additional \$75,000. Total playground costs are \$100,000.

Development cost of 4 tennis courts are approximately \$30,000 per court, reflecting the fact that courts can be built on the reservoir deck. An additional allowance of \$20,000 is provided for a roughly 20 x 30 ft. paved basketball play area, for a total cost of \$140,000. The combined capital cost of the passive recreation/adventure playground and tennis courts is \$240,000.

A total of 429 new housing units have been projected. The cost contribution per unit will be  $\$240,000/429 = \$559.44$ .

The owners of the NCP area would thus contribute a total of \$559.44 per unit for park and sports facilities upon rezoning or subdivision.

Given the significant financial contribution to tennis courts, owners in the neighbourhood are desirous of exploring the possibility of 2 of the courts being allocated to a community association for reserved or preferential play times.

### 5.2.2 Fire Protection

Fire Hall #11 serves the neighbourhood. This Hall is situated just north of 60 Avenue and east of 128 Street. The fire department has calculated that based on overall capital cost projections, the cost per dwelling unit of providing improved fire protection in Newton is:

- \$150 per single-family dwelling unit
- \$250 per multiple-family apartment unit including an allowance for an aerial device

Since aerial devices are also required to serve townhouses, the "apartment unit" charge will apply to such housing.

The appropriate contribution per dwelling unit will be made in order to accommodate long-term fire fighting capacity in the neighbourhood.

### 5.2.3 Library

Provision has been made for a new library to serve the West Newton region. This facility is to be constructed as part of the Penreal project on Scott Road. It is understood that approximately 7,000 to 7,500 square feet of building space will be made available. Since this new facility is intended to serve West Newton, no

further capital improvements are required. New residents also generate an added demand for books. According to the Surrey Public Library, this amounts to 1.5 items per capita at \$25.00 per item. Based on the projected new population at an average of 3.0 people per unit, this equates to \$112.50 per dwelling unit.

#### 5.2.4 Police Protection

It is understood that the RCMP is contemplating development of a sub-office to be located in a proposed project to be built at Scott Road near No. 10 highway. This office will be about 500 square feet in area and is assumed to serve all of West Newton, or a population of 19,458<sup>1</sup>. Assuming capital costs of roughly \$130/sq. feet, total costs amount to \$65,000. With the NCP area representing 7% of the sub-office service area, it is reasonable for the owners to contribute a cost share proportionate to the overall service population. This amounts to \$4550. On a per-unit basis, the cost contribution is thus \$10.60 per new dwelling unit.

#### 5.2.5 Other Community Facilities

The Local Area Plan makes provision for a community and social services facility outside this neighbourhood, in a location north of 64 Avenue. In the Local Area Plan it is observed that a need exists for a space for community group meetings and a centre for community activity. We believe this need is best met in the location identified in the Area Plan. This

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<sup>1</sup>At this stage, no clarification has been received on the service area

proposed facility would be designed to serve the entire Area Plan service area. It might include space for club meetings, workout rooms, and should include a day care facility and change rooms for the proposed adjacent park. This would then act as a focal point for community services throughout the West Newton area providing both social support and recreational needs. The Surrey Parks and Recreation Department has suggested development of a 300m<sup>2</sup> community building which would serve both this neighbourhood and the one north of 64 Avenue. Total construction cost is estimated at \$470,000 to be shared between the two neighbourhoods and the City. Thus, the two neighbourhoods would contribute \$235,000 of the total estimated cost. This cost would be shared on the basis of 1400 units within the combined neighbourhoods, thus  $\$235,000 \div 1400 = \$168.00$  per unit.

#### 5.3 Affordable Housing

In addition to the identified amenity contribution amounts the City has a policy which requires that developers contribute \$750 per single-family or multiple-family unit towards the provision of affordable housing, unless specific allowance is made within the neighbourhood for affordable housing. Since no opportunity exists to include affordable housing in the relatively small NCP area, owners within the NCP expect to contribute the cost of \$750 per dwelling unit. This amount will be in addition to the earlier identified amenity contributions.



#### 5.4 Total Financial Cost Contribution

The foregoing information results in the following "soft service" costs to be contributed by NCP property owners in the zoning and subdivision stage (roads and utilities, which are not detailed in this section, would constitute "hard services"). The total financial contribution is proposed to be \$1850.54 per new single-family dwelling unit, and \$1950.54 per multiple-family dwelling unit. This includes both the identified amenity amounts, as well as the \$750.00 per unit affordable housing contribution. Details are summarized in Table 5 - 1.

Local owners are concerned that the amenity contribution they provide be spent as indicated. For this reason it is imperative that Surrey establish reserve funds which specifically allocates monies towards the indicated services as well as to the general locations specified. With the exception of the affordable housing contribution, it is clearly intended that amenities be provided to enhance the services provided in West Newton. The timing at which amenities are to be provided is reviewed in Section 6.2.

**Table 5-1**  
**TOTAL FINANCIAL CONTRIBUTION**

ITEM	NATURE OF IMPROVEMENT	NCP PER UNIT CONTRIBUTION
Parks and Recreation	4 tennis courts, basketball practice area and adventure playground	\$559.44
Fire Protection	allowance for fire fighting improvements	\$150.00 for s. f. unit \$250.00 for m.f. unit
Library	no capital improvements, but allowance for new acquisition items	\$112.50
Policing	sub-office, capital cost	\$10.60
Community Building	allowance towards new building with meeting rooms and community day care (shared between neighbourhoods and City)	\$168.00
TOTAL "AMENITY" CONTRIBUTION	contribution per new dwelling unit	\$1000.54 per s.f. unit \$1100.54 per m.f. unit
Affordable Housing	contribution towards affordable housing	\$750.00
TOTAL FINANCIAL CONTRIBUTION	contribution per new dwelling unit	\$1850.54 per s.f. unit; \$1950.54 per m.f. unit



## 6.0. DEVELOPMENT STAGING

Consideration has also been given to the desirability of staging development, to allow for progressive phasing of utility services. In reviewing the engineering and planning ramifications, it became apparent that the small size of this neighbourhood and the proximity of trunk services makes staging of utilities impractical. Some off-site improvements to sanitary sewers may be triggered by development, however, this should be accommodated through Surrey's capital development program. There might be a need to accelerate some capital expenditures. Other improvements such as the detention ponds for storm drainage are DCC expenditures, and timing would be determined by the City.

One issue that should be considered in development is the need to avoid the creation of "locked in" parcels. This can be dealt with through the zoning and subdivision process, but given parcel sizes in this NCP area, it is unlikely to be a problem for most of the area. Some concern does exist with respect to properties within the area designated for townhousing. To avoid costs being "loaded" on smaller properties fronting proposed 63 Avenue, recommendations for consolidating parcels as a way to equalize road construction costs are incorporated in the design guidelines for the RM-15 Zone, included in the Appendix.

### 6.1 Phasing of Services

Other than a logical progression for development which avoids isolated urbanized areas, provision of services is generally not considered to be a development constraint. As a result, phasing of development is not generally dictated by off-site utility upgrading requirements. (Further comments on staging are found in Appendix 2.)

### 6.2 Development of Amenities

As the owners contribute towards the provision of amenities, some threshold is required to determine at what stage amenities are actually developed. For many of the services, it involves an augmentation of already established services, such as policing, fire protection, the library and similar amenities. Thus, no specific "implementation" schedule is required. For parks, early development is desirable. Based on discussions with Surrey Parks and Recreation, it is recommended that park construction occur at an appropriate stage as determined by Parks and Recreation.

It is recommended that the City consider advancing the upgrading of 128 Street from 60 to 64 Avenues, however, it is not expected that the upgrading would become a development constraint.



## 7.0. GENERAL IMPLEMENTATION

### 7.1 NCP Implementation

In order for the owners to be able to proceed with rezoning and subdivision the following is still required:

- Council review and approval of this NCP by resolution (first for the Stage 1 report, then the Stage 2 report).

Overall implementation of this project will be greatly facilitated by the expressed interest of many of the larger holding property owners to proceed cooperatively with the single-family housing concept. This permits an optimum form of development, improves yields and road patterns and also allows for better equity. In general and as outlined at the Steering Committee meetings, for cooperative development to proceed (a number of the owners with single-family parcels propose to proceed on this basis, for an area comprising up to 94 single-family lots) the following general steps are desirable:

1. For each owner in the area to be developed on a cooperative or joint basis, the relative percentage of lot area to the total lot area of all owners participating in the cooperative venture is determined. This percentage number determines the proportion of interest of each participant in the overall subdividable scheme.
2. On the basis of the concept plan in this NCP the maximum yield for each participating parcel is established. This yield reflects the density designation and lotting plan as established in the NCP.
3. The percentage interest of each participant with respect to the overall subdividable area is calculated, and the result is expressed in the percentage of proposed lots assigned to the participant.
4. This percentage of lots often yields a fractional amount. For planning and development purposes fractions are rounded to the nearest whole or half number. For example if the calculated yield is 6.78 lots, the participant receives 7 lots. If the number is 6.18 lots, the number is rounded to 6 lots. If the number is 6.54 lots, the rounded number is 6.5 lots. Upon final subdivision, for half lots, ownership can be shared or one owner can buy the half share of another owner to obtain a full parcel.
5. Upon subdivision (and more informally as occurred during the NCP process) a plan is prepared identifying the proposed distribution of lots on the basis of the relative share percentages. Every effort will be made to assign lots in the same area as the original parent parcel. (Some financial

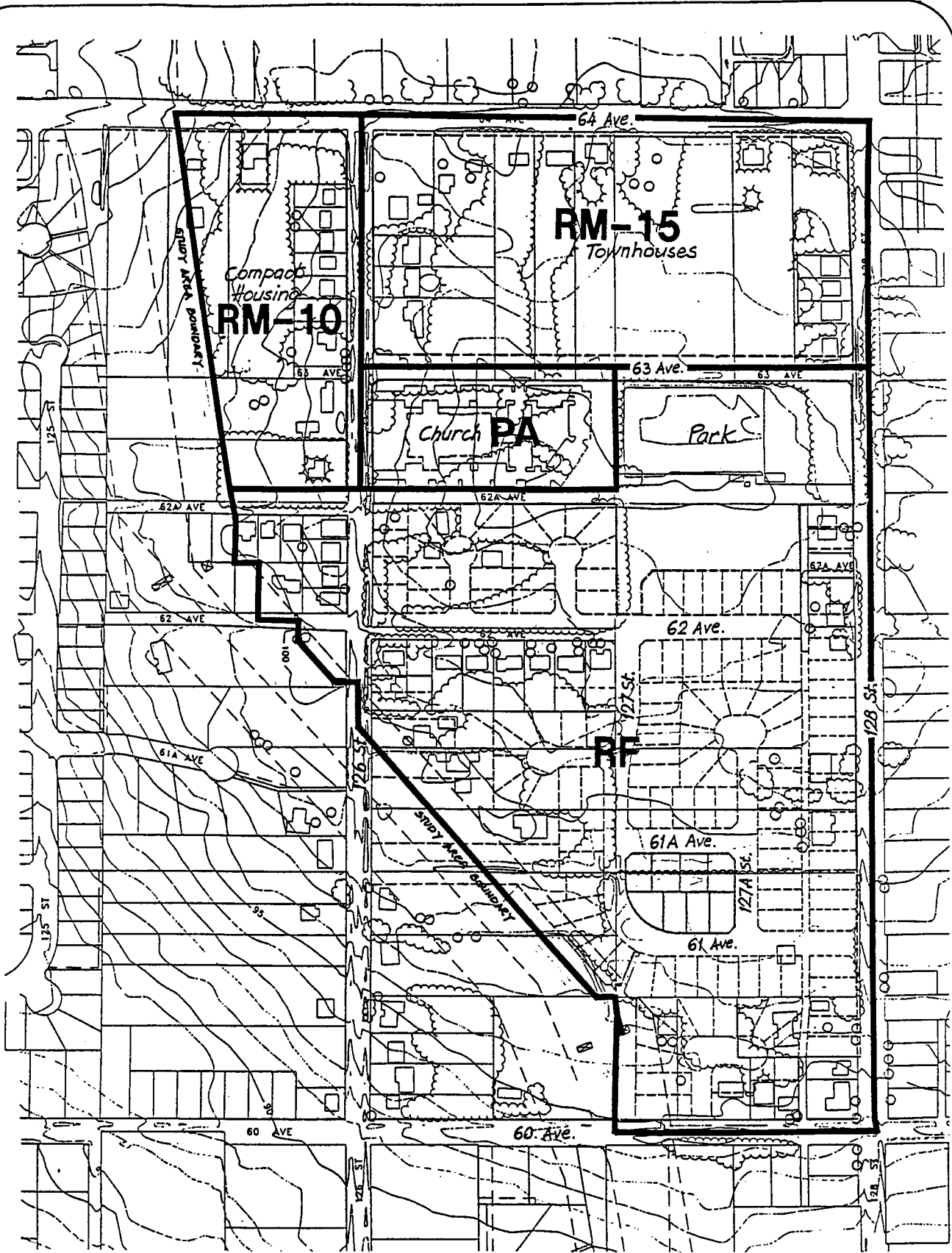
recognition may also be required to actual parcel sizes, as not all parcels given location and easements, will be of identical size).

6. It is suggested that development costs will be shared on the same percentage basis as the assignment of lots. If for example an owner gains 8% of all the lots, the respective development costs would also be 8% of the total development cost.
7. Amenity costs, park land contributions and similar per lot costs charged by Surrey will be based on the number of lots assigned to the participant. For example if the amenity costs are \$1500 per lot, and an owner is assigned 8 lots, this owner would pay amenity costs on the basis of  $8 \times \$1500 = \$12,000$ . These costs will be payable upon subdivision.
8. The subdivision application should be made on behalf of all of the participating owners. Surrey can then process the application, and upon registration of the final subdivision plan, ownership of the new parcels is allocated to each participant on the basis of the lots as identified on the overall concept plan, and the agreed to preliminary plan of subdivision. Again, subdivision and related costs can be assigned on the basis of the percentage or lot interest of each of the participants.

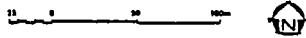
To facilitate approval processing, it is recommended that rezoning for the single-family areas proceed on a "block" application basis, possibly initiated by the City. This recognizes the owners efforts in cooperating on the NCP, and allows the owners to proceed with their subdivision applications.

## 7.2 Zoning Plan

Future development in this NCP area is to be in overall compliance with the Zoning Plan as illustrated by *Figure 12*. It includes the most appropriate zoning classifications as noted in the Surrey Zoning Bylaw (as of early 1995), which reflect the lotting and land use designations included in this document.



NEIGHBOURHOOD CONCEPT PLAN  
 West Newton, Neighbourhood 3  
 City of Surrey



**PROPOSED ZONING**

- RF SINGLE FAMILY RESIDENTIAL
- RM MULTI-FAMILY RESIDENTIAL
- PA PUBLIC USE/INSTITUTIONAL

FIGURE  
 12





# WEST NEWTON NEIGHBOURHOOD 3

## Neighbourhood Concept Plan

### Appendices

July, 1995

Prepared for:  
Owners and  
City of Surrey

**uma**

**APPENDIX 1**

**MODEL BUILDING DESIGN GUIDELINES**

- A. Single-Family Areas (RF Zone) 14 pages**
- B. Compact Housing Areas (RM - 10 Zone), and Townhouse Area (RM - 15 Zone) 5 pages**

## THE CITY OF SURREY

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# MODEL BUILDING DESIGN GUIDELINES

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The model building design guidelines for the single-family areas were prepared by the City of Surrey and are intended to apply to all new residential development within the proposed RF Zone (Single-family Housing) for the West Newton Neighbourhood 3 area, covered by this NCP. The guidelines will also apply to RM-10 zone properties as identified later in separate standards. The following sections include design guidelines for the:

- RF Zone
- RM - 10 Zone
- RM - 15 Zone

### *Important:*

*The guidelines are to be registered as a Statutory Building Scheme under Section 216 of the Land Title Act. The property owner or developer shall retain a consultant to review proposed housing design with Consultant recommendations to be followed by the builder.*

These guidelines provide minimum standards, and may be expanded on by individual owners or developers.

A. SINGLE-FAMILY AREAS (RF ZONE)

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## 1.0 PURPOSE OF THE BUILDING DESIGN GUIDELINES

The following Model Design Guidelines have been prepared as a model or guide to ensure that each house built and yard improved in the subdivision enhances the overall appearance and quality of the neighbourhood. These design guidelines will ensure:

- high quality construction standards;
- integrated streetscape; and
- distinctive home designs and continuity throughout the community.

The objective of these Guidelines is not to make every house look the same but rather to encourage good design integration, harmony, and quality detailing and finishes. While doing this, the Guidelines allow opportunity for personal touches and differences that add richness to the streetscape and make a house a home.

## 2.0 ENFORCEMENT OF THE GUIDELINES

The Design Guidelines are a tool at the disposal of the developer, builder and the future lot owner. To be effective, these Guidelines must form part of a Statutory Building Scheme to be registered under Section 216 of the Land Title Act.

There shall not be constructed, placed, erected or maintained on any lot any dwelling, building or other improvements whatsoever unless and until plans and specifications thereof showing compliance in all respects with these restrictions and showing elevations, sitings, size, colour scheme and all materials to be used have been submitted to and approved in writing by the Developer or by his authorized agent (Design Consultant) who shall have the right and power to approve or reject same in accordance with these guidelines.

To ensure the Design Guidelines are adhered to, a \$2,000 compliance fee is to be paid to the Developer prior to preliminary approval of the house plans. This fee will be returned after a building permit for the house has been obtained from the City.

The Design Guidelines supplement Surrey's by-laws and, therefore, must be used together with all City by-laws and other relevant regulations.

Before buying final house plans it is strongly recommended that builders and/or lot owners first read these Design Guidelines. Then to make sure that the proposed house is compatible with these Guidelines and nearby homes, **builders and/or lot owners must contact the Consultant retained by the Developer with a preliminary sketch or copy from a plan book and with proposed colours and finishes.**

Before applying for a building permit from the City of Surrey, builders and/or lot owners must submit to the Consultant for preliminary approval:

- two sets of house plans which include all four elevations, and a site plan showing the house on the lot at a 1:250 scale; and
- samples of colours and materials of the exterior finishes.

This information, along with a written approval, will be returned within two working days. The builder is obliged to follow the recommendations of the Consultant. Only plans displaying the Consultant's approval stamp will be submitted to the Surrey Building Department for permit.

In all cases where major revisions or refusal of the home is involved, the builder will be given an opportunity to meet and discuss the proposed revisions before a formal request for changes or an outright refusal of the home is issued.

Once a plan is approved and bears the stamp of approval, any subsequent changes must be approved in writing by the Consultant. A re-approval fee may be charged to the lot owner/builder requesting the changes. After the house and front yard landscaping is completed, it will be inspected by the Consultant to ensure that the guidelines have been adhered to. If found satisfactory, the compliance fee will be returned.

Exterior changes made to the house without the written approval of the Consultant will affect the return of the deposit to the builder. There will be a minimum charge of \$50.00 for alterations to the approved exterior or colour of the house.

### 3.0 GUIDELINES FOR THE LOT

#### 3.1 Siting and Setbacks

The siting of each house shall take into consideration the natural characteristics of the lot, existing tree cover and the relationship to the street and neighbouring houses. Over view and over shadowing neighbouring houses and yards shall be avoided as much as possible.

Minimum building setbacks are outlined in the City of Surrey's Zoning By-law.

It is the owner/builder's responsibility to identify the location of easements and rights-of-way and to comply with the setback requirements established by the Consultant and the City of Surrey. The cost of repairing sodded easements or rights-of-way, if disturbed by the builder, will be charged to the property owner.

To create an interesting streetscape and maximize privacy, the Consultant has the right to establish specific setback requirements on an individual basis which may be more stringent than the Zoning By-law during the design approval process.

Yards and setbacks of accessory buildings shall comply with the requirements set out by the Zoning By-law.

### 3.2 House Sizes and Types

To discourage the conversion of homes to include illegal suites, houses will not be permitted to have a second kitchen or food preparation area or plans which would encourage this conversion.

**TWO STOREY HOMES:** Two storey homes must have a finished living room and kitchen on the main floor (ground level); none will be accepted on the second floor. The majority of bedrooms must be located on the second floor.

**SPLIT LEVEL HOMES:** The majority of bedrooms are to be on the upper most floor.

**RANCHERS:**

**BASEMENT ENTRY HOMES:** Basement entry homes which have the exterior facade of a conventional 2-storey home, with the kitchen and living room on the second floor, are not permitted.

**MULTI-LEVEL HOMES:** Multi-level homes shall have the living room and kitchen on the ground floor and a majority of bedrooms on the second floor. Conventional basements are permitted provided they are not apparent on the front facade. There must be good connectivity between all the floors so that the entire house can conveniently function as a single family dwelling. Basement windows shall not be allowed above grade on street fronting elevations except where proven necessary under Building or Fire Code regulations.

### 3.3 Lot Grading

Houses are to be designed to respond to natural grading conditions and minimum building elevation requirements set by the City. Retaining walls shall be avoided wherever possible.

Retaining walls, where unavoidable, will be limited to an exposed height of no more than 1.2m (4 feet). Any exposed concrete over 0.6m (2 feet) in height shall be architecturally treated. All retaining walls and their foundations, including drainage pipes, are to be within property lines so as not to cause any encroachment on the neighbouring lot.



The builder is responsible to finish the lot grading in accordance with the lot grading plan approved by the City. Rough lot grading will be accomplished by the Developer prior to building permits being issued.

The owner/builder is responsible to ensure that foundation excavations are filled back and that excess soil is removed from the site to an approved disposal site after construction and that landscaping and other site changes do not interrupt the drainage pattern.

#### 4.0 GUIDELINES FOR THE HOUSE

##### 4.1 Exterior Design

An overall standard of quality in the community will be maintained through variation on individual house designs, repetition of some architectural elements and use of a uniform quality of materials.

Special attention to consistency in the exterior treatment of the house is necessary. Detailing which is important to the design's integrity is considered essential and should not be omitted.

Specific exterior design details:

- i. In general, materials used on the front of the house should be used on all other faces of the building.
- ii. Stucco, brick and cedar siding or combinations of these materials are preferred. If stucco is used, it shall have a sand float finish. Vinyl siding in natural pastel tones may be permitted if accompanied by cedar trim in a complementary color.
- iii. Wood trimboards 10 cm (1/2") to 15 cm (6") wide shall be used around all applicable windows and doorways. Muntin bars on windows are recommended. Corner mouldings and other architectural elements used on the front of the house shall be used on all other faces of the building. Note: trimboards when applied to a stucco surface, should be sealed and painted on all sides and edges to prevent discoloration from leeching during the rainy season.
- iv. False front treatments and over embellishment of the front entrance shall be avoided. No balconies on the front or side elevations of the house shall be permitted. Rear balconies on the second floor level are limited to 8 feet in width from the building face.
- v. Accent veneers such as brick or stone must turn the corner and extend a minimum of 1.2 metres (4 feet) or meet the chimney. The colour and pattern for any brick or stone veneers must blend with the siding. All brick to be standard or metric size with grey mortar. The bricks or stones shall be neutral earth tone and even-toned. Strong reds, black or white are not recommended.

- vi. Chimneys and accent veneers must match. All chimneys must be encased in stone or brick. The use of concrete block as an exterior finish is not permitted. All exterior chimneys are to be continuous to grade with a foundation.  
  
Decorative (corbelled) caps are encouraged.
- vii. No exposed concrete block is permitted. Exposed concrete foundation walls are not to exceed 0.45 metres (18 in.) in height.
- viii. Siding is to be applied either horizontally or vertically and in the same direction on all elevations.
- ix. Fascia boards are required in a color complementary to the siding.
- x. Up and down bay window shall not be permitted on the front elevation.
- xi. Multi-faceted windows and carousel'd roofs shall not be permitted.
- xii. Front doors will have raised panels of solid construction painted to compliment. Front doors shall be prominently featured and provide good lighting. Side entry doors are not permitted.
- xiii. The building facade should be clean and uncluttered.
- xiv. No castellated railings shall be permitted.
- xv. Window openings shall be of a consistent geometrical shape.

#### 4.2 House Colour

In general, the appearance of quality in the development will be maintained by not using bright, garish colours. Only solid stains on cedar siding with blending or contrasting trim are acceptable. Natural and pastel colours are recommended for stucco. Pure white is not acceptable.

Use of primary colours are only permitted as contrasting trim. Adjacent homes (in any direction) may not use the same colour schemes. This will be assured during the approval process by the Consultant.

#### 4.3 Roof

Cedar shake or shingle is the recommended roofing material. Clay or concrete tiles or other approved materials will only be accepted in solid gray, black or beige tones. The roof pitch must be a minimum of 5:12 and a constant roof pitch on any one house is desirable. Roof slopes shall be designed to reduce the apparent mass of both the downhill and uphill sides of the house.

All roof stacks, flashings, etc., are to be painted to match roof colour. Gutters, rainwater leaders and soffits are to be painted to match trim colour or selected in a compatible colour if pre-finished. Eavestroughs may be concealed behind built-up or layered fascia boards. Surface gutters shall match trim colour and provide built-up or layered fascia boards.

#### 4.4 Driveways and Garages

Driveways shall be situated to take advantage of grade and street orientation. Exposed aggregate concrete, paving stones or a combination of both materials for driveways is mandatory. Front entry sidewalks shall be of the same material as the driveways.

Some lots may have specific driveway and garage requirements due to servicing and streetlights. It is the builder/owners responsibility to ensure that driveway locations do not interfere with services or streetlights. Wherever possible, the Consultant will endeavour to site driveways to maximize the appearance of open space in the community.

All garages must be double and be constructed in the same materials and style as the house. If a third garage door is provided, it must be stepped back at least 0.9 metre (3 feet). A garage may not extend toward the street more than half its depth from the front of the house. This also applies to attached lane access garages. Detached garages which complement the house will be considered. Garage doors shall have raised panels to complement front entry doors.

All garages must have closing doors to ensure that stored household belongings are not visible from the street. Aluminum doors shall not be used. No carports are allowed. Side entry or rear entry garages are encouraged.

Garage and driveway location must be approved by the Consultant to ensure compatibility with adjacent houses.

#### 4.5 Building Height and Shape

Building height is governed by the Zoning By-law which restricts the principal building to a maximum height of 10 metres (33 feet). Additional height restrictions may apply to some lots to ensure that the view is maintained for neighbours.

The Design Consultant will consider the compatibility of the height, massing and siting of each house submitted for approval as it relates to the character of neighbouring houses. As a general guide, neighbouring houses should be so designed as to avoid a "canyon" effect and the roof lines along a street should have a smooth flowing effect rather than an uncoordinated jagged effect.

Special height and massing treatment is required for corner lots.

To take advantage of street views and to soften the visual impact:

- i. Houses on corner lots shall display varied roof heights along each flanking street to add visual interest to the streetscape, and shall have an exterior appearance which avoids blank walls along either flanking street;
- ii. Houses on corner lots shall be designed to face both streets with roof and wall elements that turn the exposed corner. The opportunity to have the driveway on one side and the front entry on the other should be considered;
- iii. Roof lines shall step up or down to adjacent homes to provide a flowing streetscape.

## 5.0 GUIDELINES FOR THE STREETScape

### 5.1 Repetition of House Plans

No dwelling may be erected within 55 metres (180 ft.) of any structure of a similar exterior design.

### 5.2 Landscaping

To enhance a settled appearance in the neighbourhood, the developer requires the owner/builder to complete front yard landscaping within 60 days of completion of house construction unless weather conditions make it impossible to do so.

All street fronting yard areas shall be landscaped with trees, lawns, shrubs and flower beds. Lawn only is not adequate.

All street fronting and side yard areas shall be landscaped concurrently with or immediately following house construction.

Street trees are to be supplied and planted on the boulevard in front of every lot by the lot purchaser or his builder. Street boulevards shall also be covered with lawn by the purchaser/builder at the same time as front yard landscaping is carried out.

Side yards and rear yards shall be cleaned and graded within 60 days of completion of house construction, and prior to final inspection.

### 5.3 Fencing

Ornamental screen shrubbery - either broad leaf evergreen or coniferous - is a recommended alternative to fencing. Chain-linked fence shall not be permitted.

### 5.4 Recreational Equipment and Accessory Buildings

Trailers, boats, commercial vehicles, recreational equipment and other similar objects on a lot are required to be stored inside the dwelling or behind fencing or screening. Storage of these objects is not allowed in the front yard.

Accessory buildings are restricted to the rear yard behind fencing or screening. Only one accessory building is allowed.

### 5.5 Signage

Signs erected by a purchaser or agent may not be larger than 0.6m x 0.9m (2' x 3'). Only the developer or the developer's agent may erect larger signs. Only one "For Sale" sign may be placed for each residence.

## 5.6 Protection of Curb, Sidewalk, and Utilities

The builder is responsible to repair any damage to curb, sidewalk, roadways, swales or service connections as a result of the house construction. The builder should inspect the lot prior to construction and inform the Consultant and the Permits & Licenses Department of any existing damage. Once the house is constructed, the lot and adjacent services will be inspected to ensure that any and all damage is repaired. Should the builder fail to make the necessary repairs, then the Developer will do so and deduct the costs from the deposit.

## 5.7 Appearance During Construction

The builder is required to keep the lot, sidewalk, curb, and street clean and orderly during construction. There shall be no burning of garbage.

# 6.0 SPECIAL LOT RESTRICTIONS

## 6.1 Drainage Easements and Rights-of-Way

Builders purchasing lots encumbered with drainage easements or rights-of-way must pay special attention to completed swales and lot grading in order to maintain established overland flows. Special precautions shall be taken during construction regarding ground and surface runoff. Builders found negligent shall be charged for any clean-ups carried out by the Developer.

## 6.2 Tree Preservation

Special efforts has been made to retain the existing trees with respect to the Lands on any lot thereof, identified as "Trees to be Preserved" on the Tree Location Plan, a copy of which Plan is attached hereto and forming part of this Building Scheme as Schedule "1". The Developer shall provide the purchaser of each lot containing any trees with a copy of the Tree Location Plan.

- (a) No building shall be constructed on the Lands which would require the removal of any of those trees identified to be preserved on the Tree Location Plan.
- (b) No tree identified on the Tree Location Plan shall be cut down or removed without first obtaining a written recommendation by an I.S.A. (International Society of Arborists) accredited arborist or other tree specialist approved by the City, stating that the tree is diseased and/or hazardous and should be removed and providing such certification to the City; or without first applying to the City for a Tree Cutting Permit.

It will be at the discretion of the City to either grant or deny any such Permit.

It shall be the sole responsibility of the lot purchaser/owner to employ the appropriate professional person to assess the tree. The City retains the right to require that the Covenantor replace any removed tree with two other trees elsewhere on the lands. The replacement of trees shall be 3 metres tall if coniferous, or 5 cm caliper if deciduous, and meet all requirements of the latest edition of the "British Columbia Landscape Standards," published jointly by the British Columbia Society of Landscape Architects and British Columbia Nursery Trades Association.

- (c) The preserved trees on the Lands shall be maintained in accordance with reasonable arborist's practice.

## 7.0 CONCLUSION

### 7.1 Severability

If any provision herein is determined to be void or unenforceable in whole or in part, it shall not be deemed to affect or impair the enforceability or validity of any other provision or any part hereof.

### 7.2 Liability

The developer and its designated Consultant assume no responsibility for the accuracy of the information provided or for any losses or damages resulting from its use.

Nothing contained within these guidelines shall impose any liability on the developer for damages resulting from structural defects in any structure erected on any lot with approval, nor any responsibility in connection with the site selected for any structure by any subsequent owner nor for the determination of lot boundaries.

1. Application: (Name, address, phone nbr. and signature of applicant)

\_\_\_\_\_  
Authorized Agent

2. Parcel Identifier and Legal Description of Land:  
(PID) (Legal Description)

No PID Lot (Except: Part on Plan \_\_\_\_\_)  
Sec Tp NWD Plan

3. Nature of Interest: Document Reference Person Entitled to Interest  
Description (page & Paragraph)

Section 215 Covenant	Pages 3 - 4	Transferee
Building Scheme	Pages 5 to 14	Transferor

4. Terms: Part two of this instrument consists of (select one only)

- (a) Filed Standard Charge Terms  D.F. No.  
(b) Express Charge Terms  Annexed as Part 2  
(c) Release  There is no Part 2 of this instrument

A selection of (a) includes any additional or modified terms referred to in Item 7 or in a schedule annexed to this instrument if (c) is selected, the charge in Item 3 is released or discharged as a charge on the land described in Item 2.

5. Transferor(s):

Surrey, B.C.,

6. Transferee(s): (including occupation(s), postal address(es) and postal code(s))

CITY OF SURREY, a Municipal Corporation having its offices at 14245 - 56th Avenue,  
Surrey, British Columbia, V3W 1J2

7. Additional or Modified Terms: N/A

8. EXECUTION(S)

This instrument creates, assigns, modifies, enlarges, discharges or governs the priority of the interest(s) described in Item 3 and the Transferors and every other signatory agree to be bound by this instrument, and acknowledge(s) receipt of a true copy of the filed standard charge terms, if any.

Officer Signature(s)

Execution Date

Transferor/Borrowers/Party  
Signature

Y / M / D

\_\_\_\_\_

\_\_\_/\_\_\_/\_\_\_/

\_\_\_\_\_  
\_\_\_\_\_

CITY OF SURREY by its  
authorized signatories:

\_\_\_\_\_

\_\_\_/\_\_\_/\_\_\_/

\_\_\_\_\_  
Mayor - Robert Bose

\_\_\_\_\_  
Clerk - Donna Kenny

\_\_\_\_\_  
SIGNATURE OF APPROVING OFFICER  
FOR CITY OF SURREY

OFFICER CERTIFICATION:

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the Evidence Act R.S.B.C. 1979, c.116, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the Land Title Act.



TERMS OF INSTRUMENT - PART 2  
Section 215 Covenant  
Re: Building Schemes

---

BETWEEN:

(hereinafter referred to as the "Covenantor")

OF THE FIRST PART

AND:

CITY OF SURREY, a Municipal Corporation having its offices at  
14245 - 56th Avenue, Surrey, B.C., V3A 3X1

(hereinafter referred to as "Surrey")

OF THE SECOND PART

WHEREAS:

A. The Covenantor is the registered owner in fee-simple of those lands and premises lying in the City of Surrey, in the Province of British Columbia, and more particularly described as:

No PID  
Lot (Except: Part on Plan \_\_\_\_\_)  
Sec Tp  
NWD  
Plan

(hereinafter called "the said lands")

B. By the provisions of Section 215 of the *Land Title Act* R.S.B.C. 1979, Chapter 219 and amendments thereto, a covenant, whether of a negative or positive nature, in respect of the use of land or, in respect of a building constructed or erected on land, in favour of the Municipality of Surrey, may be registered as a charge against the title to that land and is enforceable against the Covenantor and his successors in title, even if the covenant is not annexed land owned by Surrey.

C. It is the intention of the Covenantor to construct buildings on the land in accordance with a building scheme registered under Section 216 of the *Land Title Act* and it is the desire of the parties herein to register the building scheme as a charge against the title and enforceable by Surrey, the receipt and sufficiency whereof is hereby acknowledged, the parties hereto covenant and agree with each other as follows:

NOW THEREFORE THIS AGREEMENT WITNESSES THAT pursuant to Section 215 of the *Land Title Act*, and in consideration of the premises and the mutual covenants and agreements contained herein and the sum of One Dollar (\$1.00) now paid to the Covenantor by Surrey, the

receipt and sufficiency whereof is hereby acknowledged, the parties hereto covenant and agree with each other as follows:

1. The Covenantor covenants and agrees with Surrey that it shall not construct any buildings or structures upon the said lands except in accordance with the building scheme which is attached to and forms part of this Agreement as Schedule "A".
2. The Covenantor covenants and agrees with Surrey that:
  - a) no building, fence, foundation, excavation, well or structure shall be made, placed, erected or maintained on any portion of the said lands except in accordance with Schedule "A";
  - b) the Covenantor shall not do or knowingly permit to be done, any act or thing which will permit or allow construction to occur contrary to the terms and conditions of Schedule "A";
  - c) the Covenantor shall not alter, convert or reconstruct any building or structure on the said lands so as to create an additional dwelling unit, secondary suite or any kind whether used or occupied by the Covenantor or otherwise.
3. The Covenantor hereby covenants and agrees with Surrey to save Surrey harmless and indemnify Surrey from any claims, liabilities, obligations and costs arising out of the breach or default of anything in this Agreement occurring while the Covenantor is owner of the said lands.
4. The Covenantor agrees to obtain from any prospective purchaser, leaseholder, tenant or other transferee of any right in the said lands, an agreement to be bound by the terms of this Agreement and to provide Surrey with a copy of the said Agreement.
5. The parties agree that nothing contained or implied in this Agreement shall prejudice or affect the powers of Surrey in the exercise of its functions under any statute, by-law, order or regulation, all of which may be fully exercised in relation to the said lands as if this Agreement had not been executed.
6. The parties agree that this Agreement and any schedules hereto may only be modified or discharged with the consent of Surrey pursuant to the provisions of Section 215(5) of the *Land Title Act*.
7. The parties agree that they will do such further acts and give such further assurances as necessary to implement the true intent and meaning of this Agreement.
8. It is mutually understood and agreed by and between the parties hereto that this Agreement and the covenants herein contained shall be construed as running with the said lands and shall be binding upon and enure to the benefit of the respective parties hereto, their administrators, personal representatives, successors and assigns.

**B. COMPACT HOUSING AREAS (RM-10 ZONES), AND TOWNHOUSE AREA (RM-15 ZONE)**

**Newton Neighbourhood 3 Concept Plan**

**General Design Guidelines - RM 10 and RM 15**

These guidelines are intended to promote the orderly urban development, and help to define the overall character of this area.

It is recommended that West Newton Neighbourhood #3, be developed as a residential area that is safe, pedestrian oriented, and incorporates natural characteristics of the land while responding to the overall objectives of the West Newton Local Area Plan.

**General Guidelines**

**Site Layout and Circulation. (CPTED)**

- Site plan design should be based on the principles of defensible space which attempt to strengthen territoriality and natural surveillance. The creation of a perceptible edge of the proposed development and channeling of pedestrian movement to predetermined well surveyed points within the complex is recommended.
- A hierarchy of increasingly private zones which define a transition from the public street to semi-private areas and further to private dwellings should be clearly defined within the project.
- Outdoor areas should be divided into visually identifiable zones to encourage adjacent residents to adopt proprietary attitudes toward those spaces. This is particularly important in children play areas. Buildings should be sited to encourage the creation of well-defined outdoor common areas, such as courts and plazas. Efficient and convenient connection between indoor and outdoor recreational/amenity is encouraged.
- Buildings should relate to contours and natural site features. Site layout, building setbacks, unit's design, should respond to the specific site conditions. It should consider, views, slopes, noise, natural amenities, adjacent open spaces, and try to maximize units with southern exposure.
- Visitor parking within the project should be clearly identifiable by the use of decorative pavers or contrasting paving materials. It is recommended that visitor parking areas be broken down into small number of parking spaces and integrated into landscaped areas.
- To reinforce the residential character of the neighborhood, it is recommended that pedestrians oriented lights be provided along internal streets, and should not interfere with the privacy of adjacent residential units.
- Contrasting paving, including color and material, should be used to define the continuity of main pedestrian/bike paths across interior streets or driveways and to reinforce the overall dominance of pedestrians over vehicles. Pedestrian crossings at intersections should also be treated this way.
- The sidewalk pavement should be continuous across the access driveway to garage of a residential unit and should be distinct from the driveway's pavement. This is specially

important in driveways of units that have access from public streets. Units having abutting garages should share one curb let down (driveway access point).

### **Streetscape Character.**

Areas of the project fronting public streets should reinforce the overall identity and character of the Neighborhood. The following recommendations focus on the quality of the streetscape to consolidate its residential character.

- Townhouse units fronting on a single family area across a public street should have a single family character and front onto the street. This character may be achieved by having no more than two units linked in a row and by the treatment of the street frontage in a similar fashion than the units in the SF neighborhood. Private outdoor living areas (outdoor extensions to main habitable rooms) should not be planned toward the street.
- Unless warranted by special character of the street, the number of units linked in a row should not be more than four. In the case of units fronting on a single family residential area across the street the maximum number in a row should be two, and should be designed in a way that resemble a SF house, i.e., symmetrical units are discouraged.
- Yards along public streets should be treated and landscaped similar to front yards of single family residences to achieve integration of the project to the dominant character of the area.
- Landscaped areas along public streets should be continuous, complementary, and help to define a unity of streetscape. Yards abutting any public street should be treated as front yards in a single family residential zone (no fences or low fences with a maximum height of 4 ft.).
- To maintain uniformity and continuity of landscaped front yard areas, fences between sites should not extend beyond the line of the required front set-back. Shrubs and hedges are suggested on the yards abutting a public street to achieve the desired level of privacy on these areas.

### **Buildings Form and Character:**

The design of buildings should achieve architectural harmony, lend visual integration to already built areas, and should not disrupt the overall character of the neighborhood.

- The design of a new project, or the addition to an existing one, should be based on a comprehensive design concept that is compatible with, and reinforces the character of the area and surrounding urban context. It is recommended to create a consistent architectural vocabulary for the area, i.e., coordinated use of dormers, pitched roofs, verandahs, siding, porches, etc.
- To achieve a visual diversity within the project, variations in building height, separations, roof lines and set-backs are suggested. Focal points should be developed at on-site intersections
- Design and alignment of internal driveways should avoid a streetscape dominated by garages, should add visual interest to the project and avoid the "corridor" effect. Garages' doors facing garage doors across a driveway should be avoided.

- The volume of an attached garage should not be the single dominant element of the townhouse units (1/2 of the length of the garage is recommended to be included within the unit main volume).
- Where townhouse units front on and have vehicular access from a public street, not more than 60% of the unit frontage area should be devoted to driveway for the garage. Individual access driveways are not encouraged. Shared driveways should not be wider than 18 feet to minimize interruptions of the landscaped boulevard.
- When the garage is contained within the unit building envelope, it is recommended that not more than 60% of the unit frontage be occupied by garage doors. The creation of attractive entrances, a more lively environment within the complex and meaningful landscaped areas between units is encouraged, i.e., use of balconies, and windows toward roads and/or interior lanes is recommended.

#### **Common Open Spaces, Play Areas and Landscaping:**

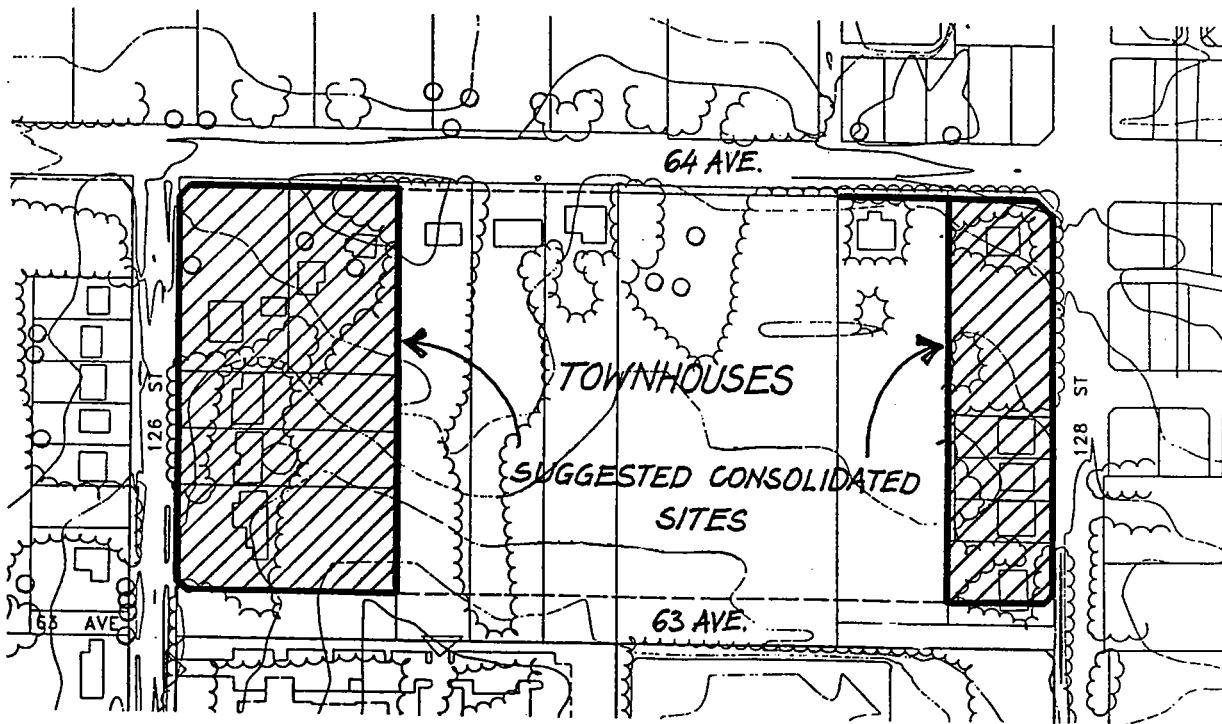
- Central open spaces should provide opportunities for the resident's public gatherings while also defining a landmark at the entrance to the project and along pedestrian paths.
- Within a townhouse project, clear definition of entry zones, common driveways, private parking, sidewalks and access driveway into garages are encouraged. Use of pavers, special surface treatment or other attractive and durable material is desirable in these areas.
- All areas not covered by buildings, structures, parking, circulation, including set-back areas, should be fully landscaped with due consideration and reinforcement of the existing land form or features of the site. Proposed landscaping should include native tree species of adequate size. (25% of the total number of proposed trees is suggested).
- Standard Communal Canada Post mail box units should be integrated into a building that forms part of the project. If a self standing structure is to house the mail boxes, it should also offer weather protection for the users and be built with materials of a quality equivalent to the rest of the buildings. Plain independent self-standing mail boxes are not acceptable.
- Areas for storage of large items (i.e., recreational vehicles) and appurtenances such as satellite dishes should be screened from view from neighbors and public streets. Use of landscaped berms, hedges and evergreens are recommended. Landscaping should also be used to screen utility equipment boxes.
- All outdoor refuse storage areas should be covered and enclosed to improve the overall visual quality of the project and to reduce the nuisance of pests, animals and odors. Use of evergreens is recommended to screen refuse storage and collection areas, and utility equipment
- Picket fences and three board fences, which are associated with the character of a small town are recommended for use in defining semi-public areas and children play areas.
- Play areas for children should be considered within the project. Play areas should be strategically located (preferable in the proximity of the indoor recreation room) and away

from major public roads. Play areas should be overview from as many units as possible, to facilitate casual supervision of the area.

- Play spaces should be small and intimate in scale. They should have a garden-like setting, be defined by a low enclosure to discourage toddlers from wandering off, and facilitate casual supervision. Sitting areas for adults should be considered in the immediate vicinity.
- The development should consider adequate bicycle parking on-grade. Suggested location for this bicycle parking area is in proximity of the play areas/outdoor recreation areas.

### Development Consolidation

- To facilitate development, and to allow for equitable sharing of road costs, no townhouse project for parcels fronting on 126 Street or 128 Street shall be permitted unless most of all existing parcels along these roads are consolidated into one project. This consolidation of projects shall be in substantial compliance with the development implementation sketch below.



## **Tree Preservation**

- Prior to any development undertaking on a site, a tree survey shall be completed by a qualified arborist for the entire project site. This survey shall highlight current tree stands, and identify those trees to be maintained at development completion, to be identified as "Trees to be Preserved" on the Tree Location Plan. The Developer shall provide the purchaser of each strata lot, in the event that the project is developed under the Strata Title Act, with a copy of the Tree Location Plan.
- No building shall be constructed on the Lands which would require the removal of any trees identified to be preserved on the Tree Location Plan.
- No tree identified on the Tree Location Plan shall be cut down or removed without first obtaining a written recommendation by an accredited arborist or other tree specialist approved by the City, stating that the tree is diseased, and or hazardous and should be removed and providing such certification to the City, or without first applying to the City for a Tree Cutting Permit. It will be at the discretion of the City to either grant or deny any such permit.
- The preserved trees on the Lands shall be maintained in accordance with reasonable arborist's practice.
- Any perimeter fencing shall be appropriately screened with landscaping. Perimeter fencing must be screened for at least 50% of its length by landscaping such as trees and shrubs.
- All major landscape areas shall be provided with an underground irrigation system in order to enhance the overall project.
- Any site waste disposal bins shall be completely landscaped and screened within an enclosure no less than 2 metres in height.

## APPENDIX 2

- A. Traffic Information and Analysis of Servicing Improvements** 34 pages
- 1.0 Transportation
  - 2.0 Storm Drainage
  - 3.0 Sanitary Sewer
  - 4.0 Watermains
- B. Contributing Area to Proposed 375mm Diameter Sanitary on Highway 10** 1 page
- Review of Water Distribution Adequacy** 5 pages



## **PART A: TRAFFIC INFORMATION AND ANALYSIS OF SERVICING IMPROVEMENTS**

### **1.0 Transportation**

The following pages provide a set of drawings which detail:

- road hierarchy;
- traffic volume projections;
- intersection controls and intersection laning;
- on-street parking; and
- typical cross-sections and channelization.

The drawings are followed by cost estimates and a transit plan (from B.C. Transit). The drawings and tables augment information included in the main text. The drawings are labelled from Figures T-1 through T-14.

The Summary of Recommended Improvements from the Traffic Impact Study is also included as Table T-4.



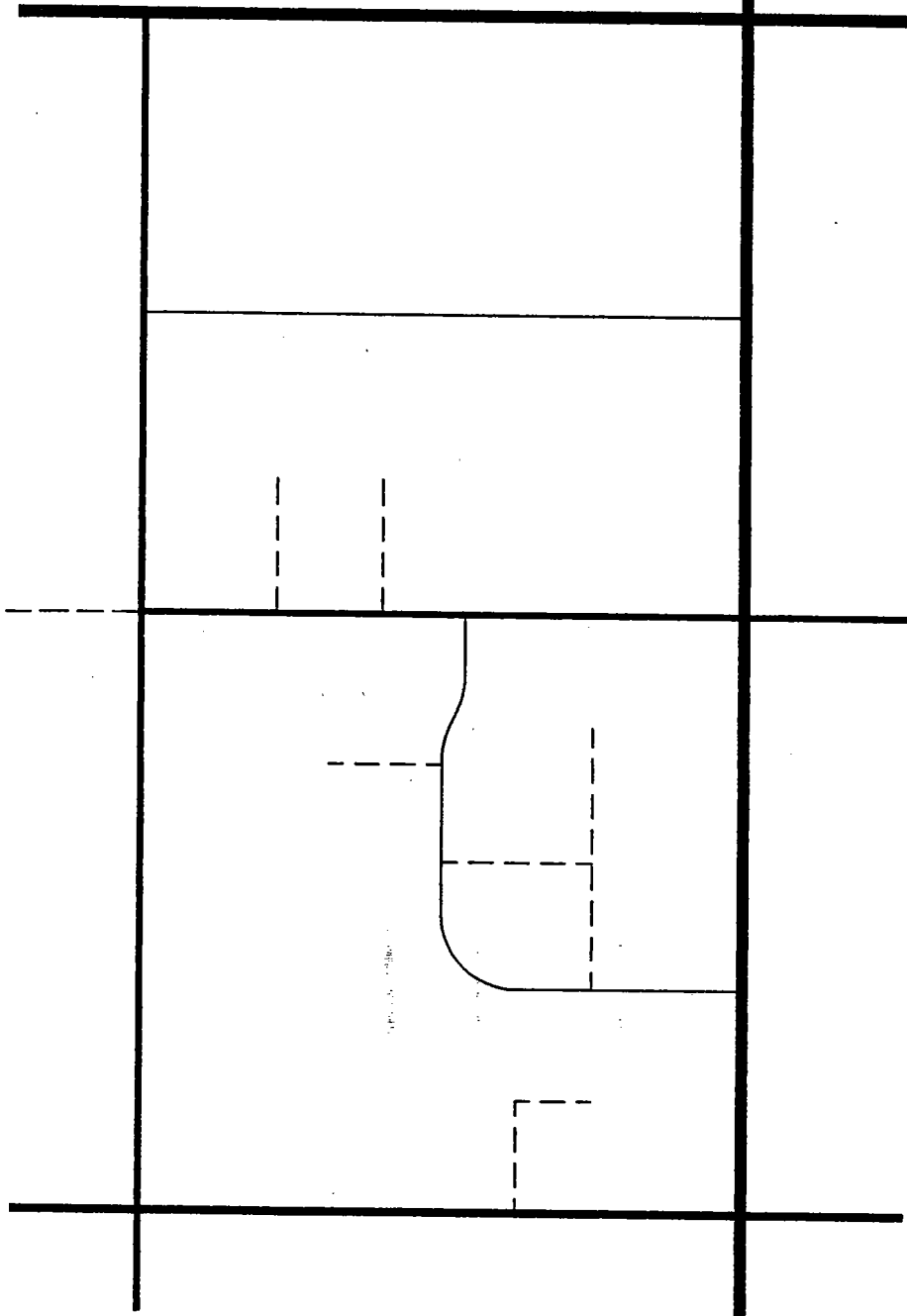
126 STREET

128 STREET

64 AVENUE

62 AVENUE

60 AVENUE



### ROAD HIERARCHY PLAN

- ARTERIAL
- MAJOR COLLECTOR
- MINOR COLLECTOR
- THROUGH LOCAL
- LIMITED LOCAL



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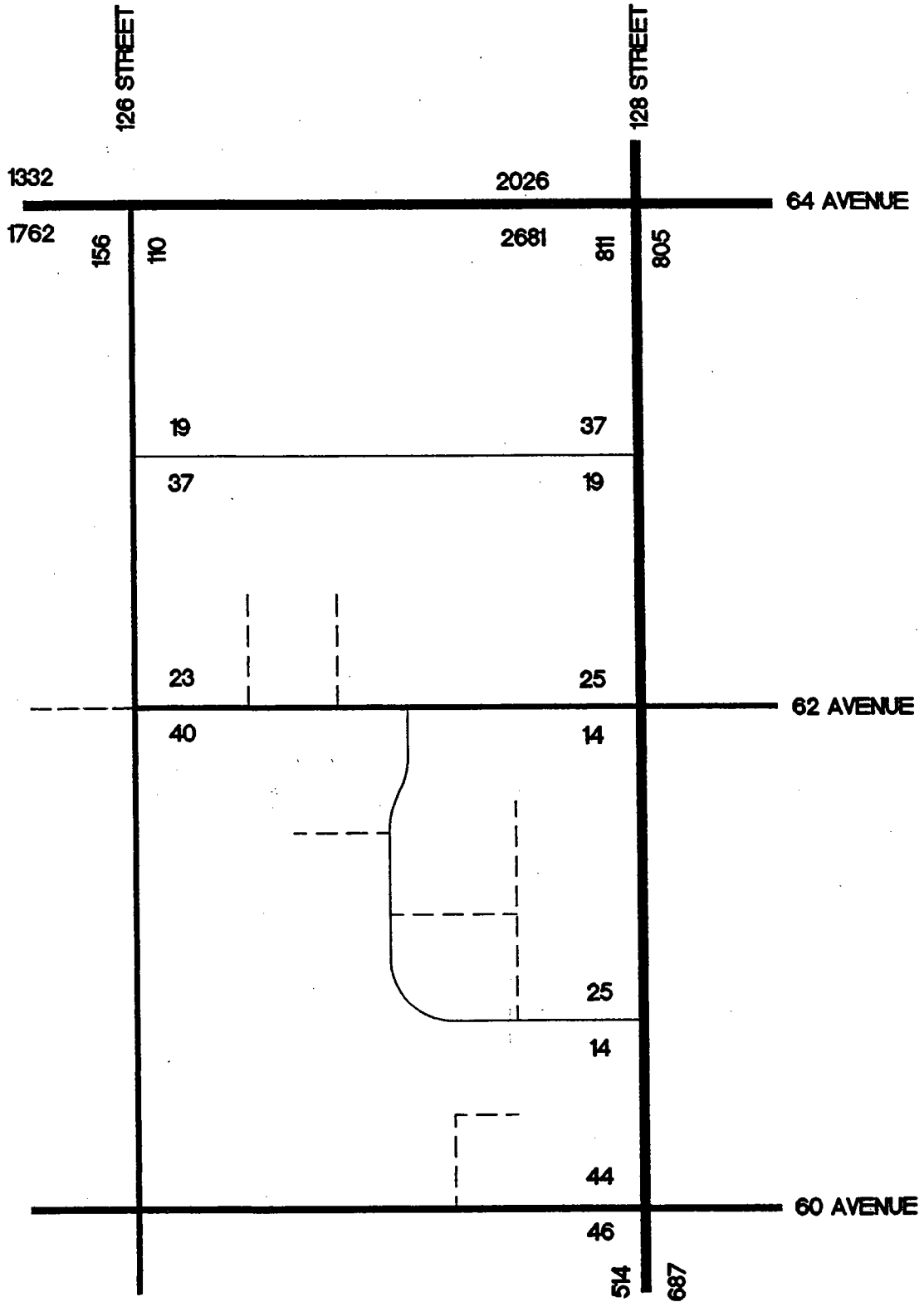
3030 Gilmore Division, Burnaby, B.C.  
V5G 3B4 Telephone: 436-5311

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CITY OF SURREY

95/03/22

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FIGURE T-1



**TRAFFIC VOLUMES 2004 PM PEAK**



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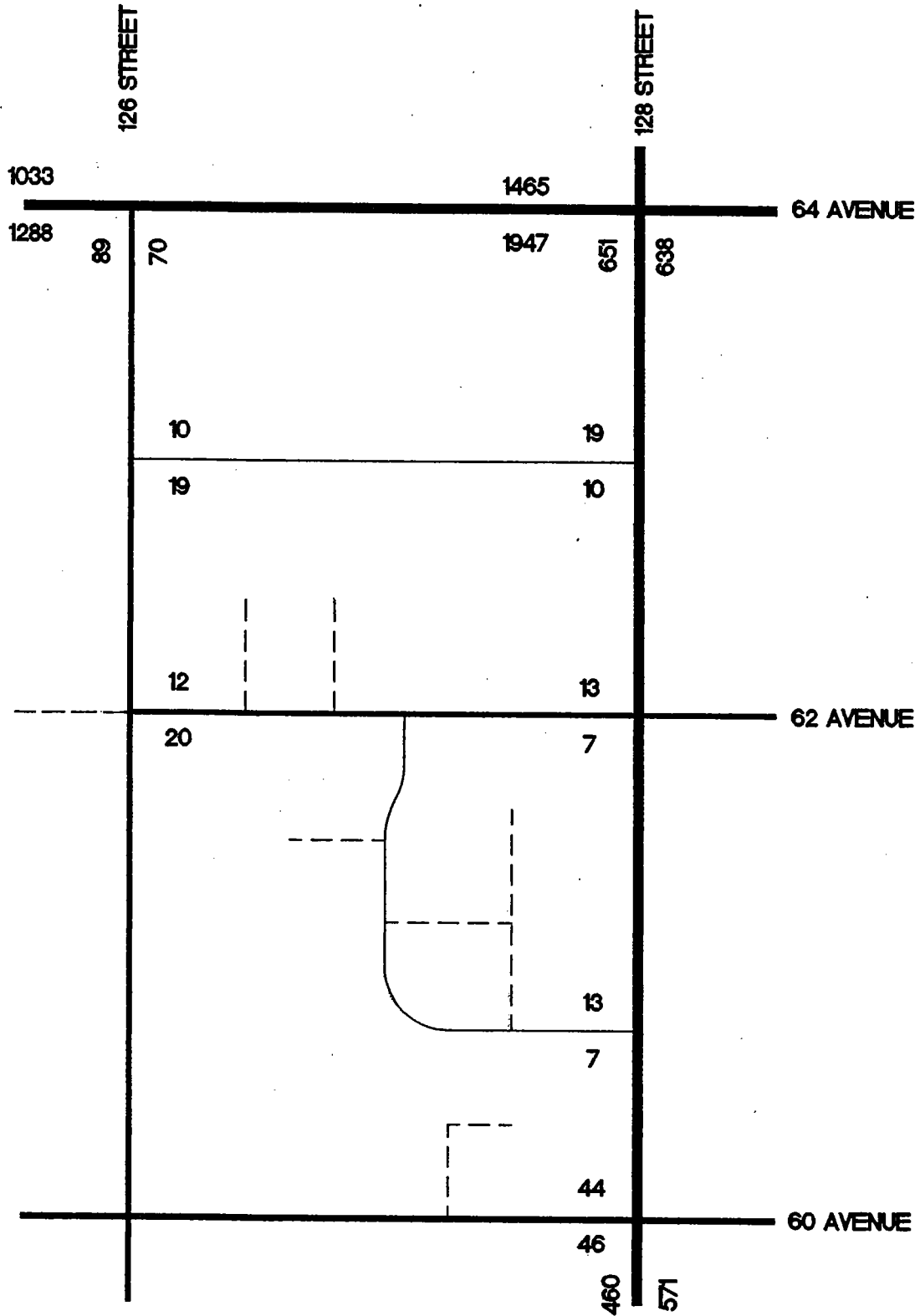
3030 Gilmore Drive, Burnaby, B.C.  
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FIGURE T-2



**TRAFFIC VOLUMES 1999 PM PEAK**



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Northwest Territories

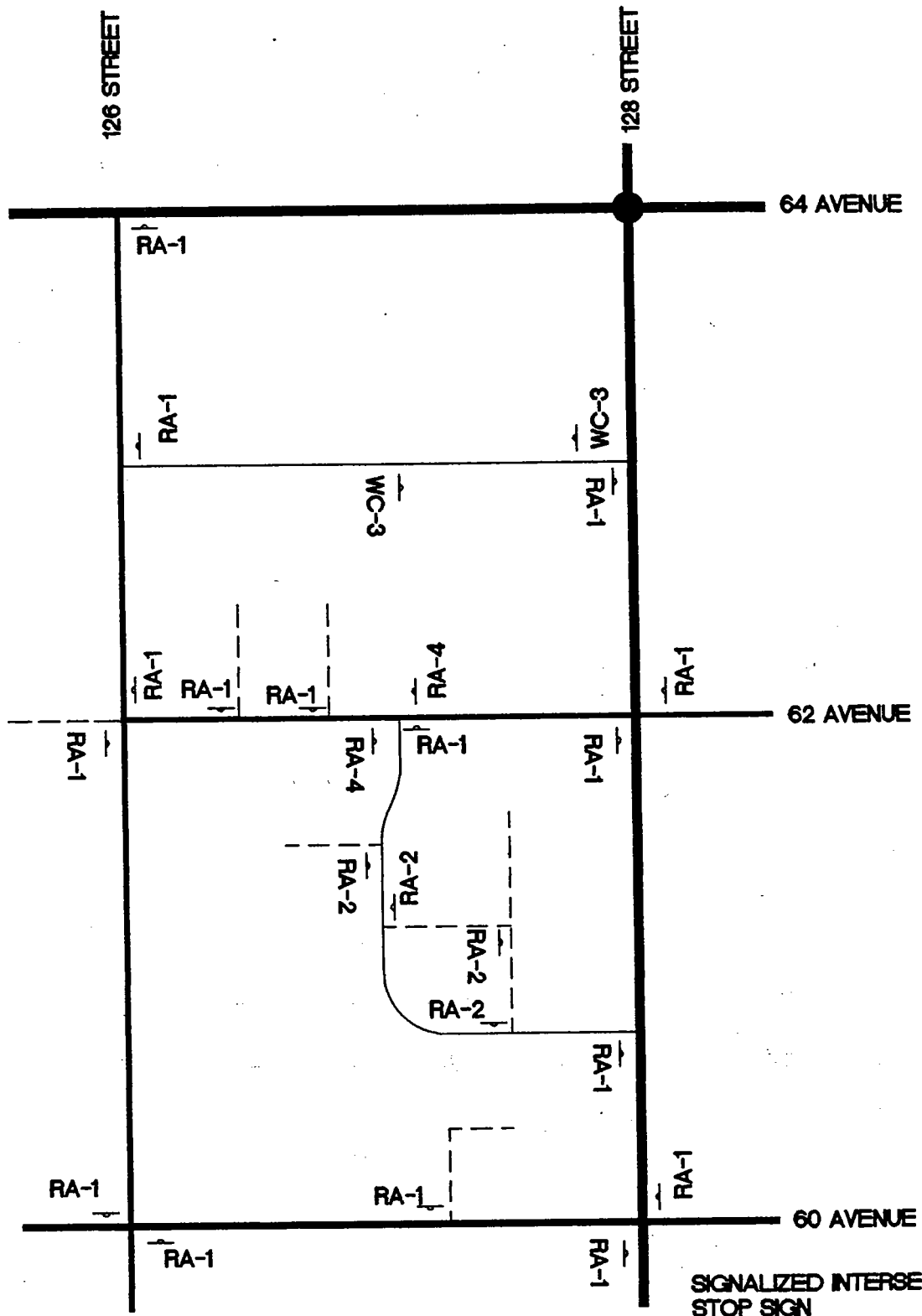
3030 Gilmore Diversion, Burnaby, B.C.  
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FIGURE T-3



SIGNALIZED INTERSECTION ●  
 STOP SIGN  
 YIELD SIGN  
 PED. CROSSING  
 PLAYGROUND AHEAD  
 SIGN NAMES BASED ON THE SIGN NAMES IN THE MUTCD.

RA-1  
 RA-2  
 RA-4  
 WC-3

**INTERSECTION CONTROL PLAN**



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FIGURE T-4

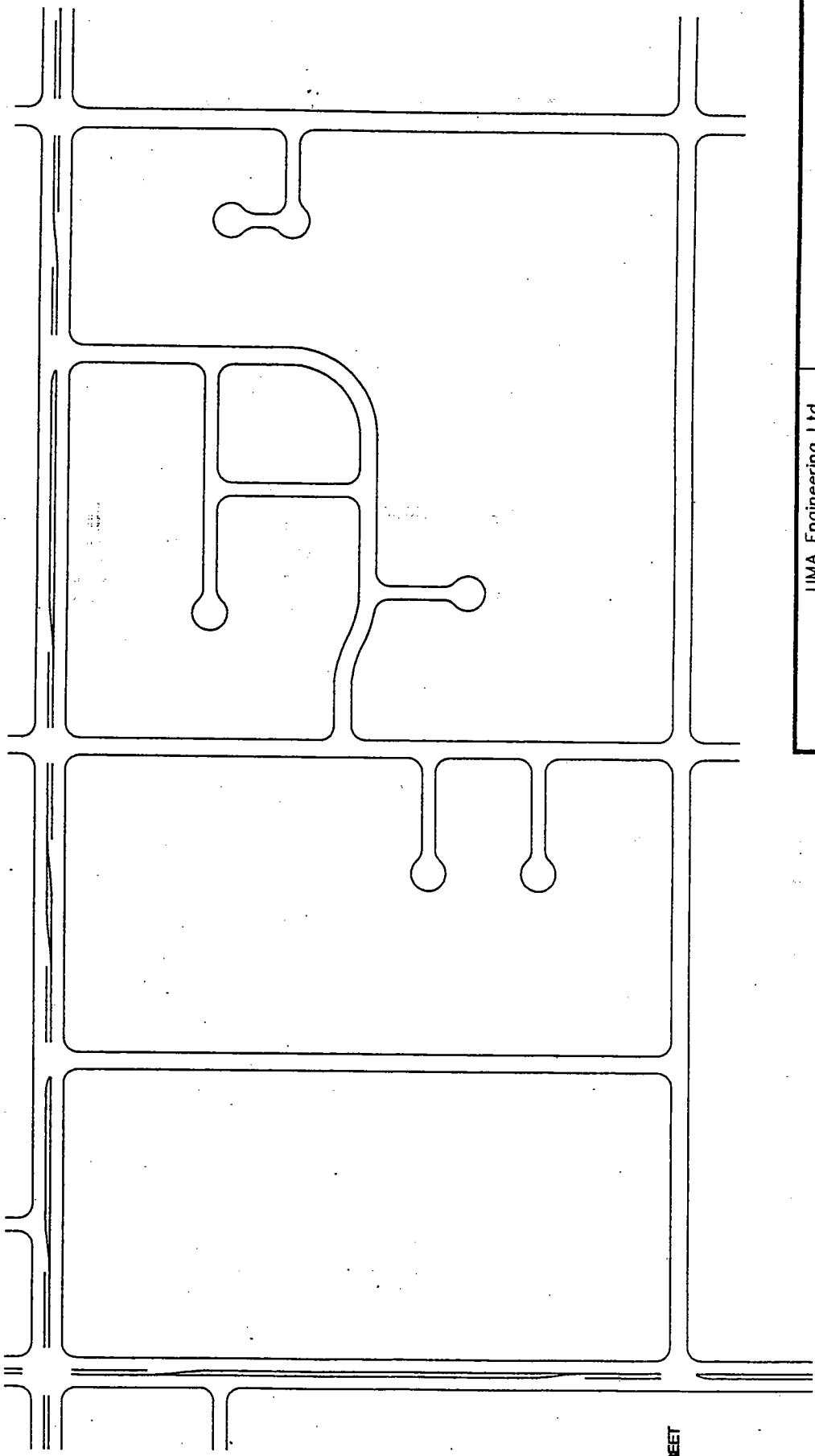
60 AVENUE

62 AVENUE

64 AVENUE

128 STREET

126 STREET



West Newton NCP  
CHANNELIZATION DRAWING

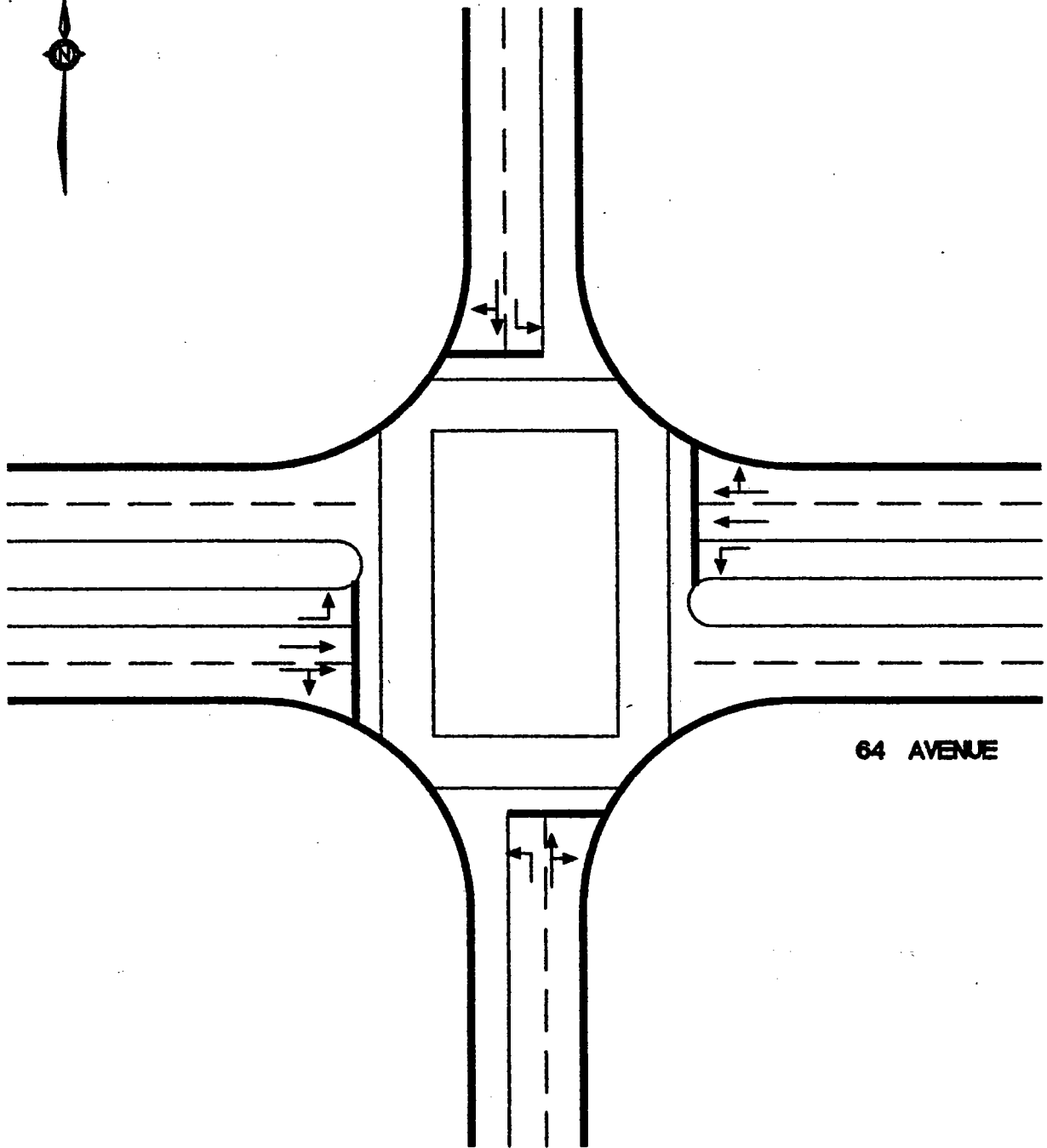
85/03/31 Scale 1"

FIGURE T-5

UMA Engineering Ltd.  
Engineers & Planners

1000 Sheppard Avenue East, Suite 1000  
Toronto, Ontario M2X 1K7  
Tel: (416) 291-1111 Fax: (416) 291-1112





**INTERSECTION LANING - 64 AVENUE AND 128 STREET 1999**



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**Engineers & Planners**

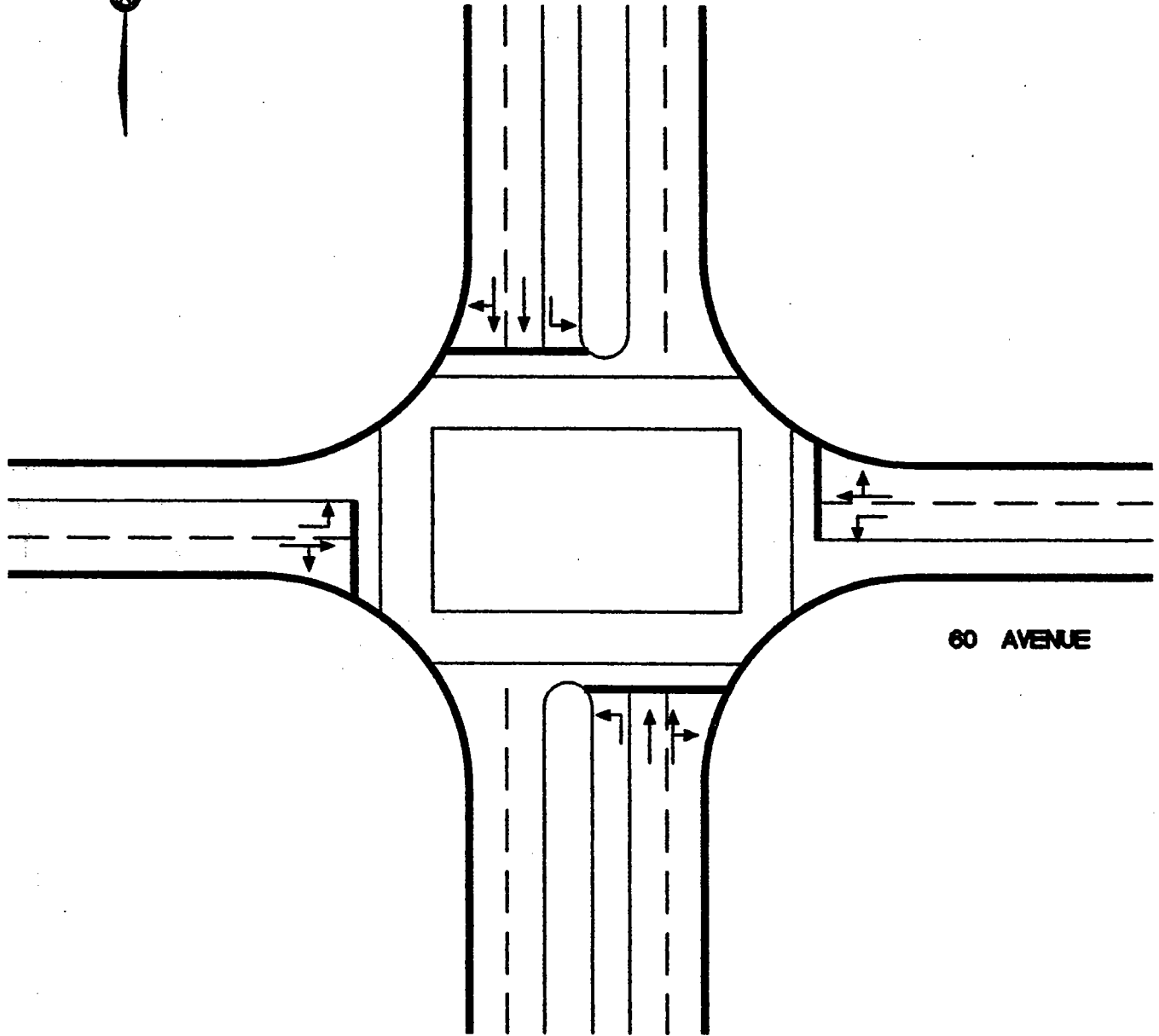
British Columbia Alberta Saskatchewan  
Manitoba Ontario Yukon Territory  
Northwest Territories  
3030 Glenora Drive, Burnaby, B.C.  
V5B 3B4 Telephone 430-5311

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FIGURE T-6



**INTERSECTION LANING - 128 STREET AND 60 AVENUE**

1999 (or beyond)



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V0S 2B4 Telephone: 438-5311

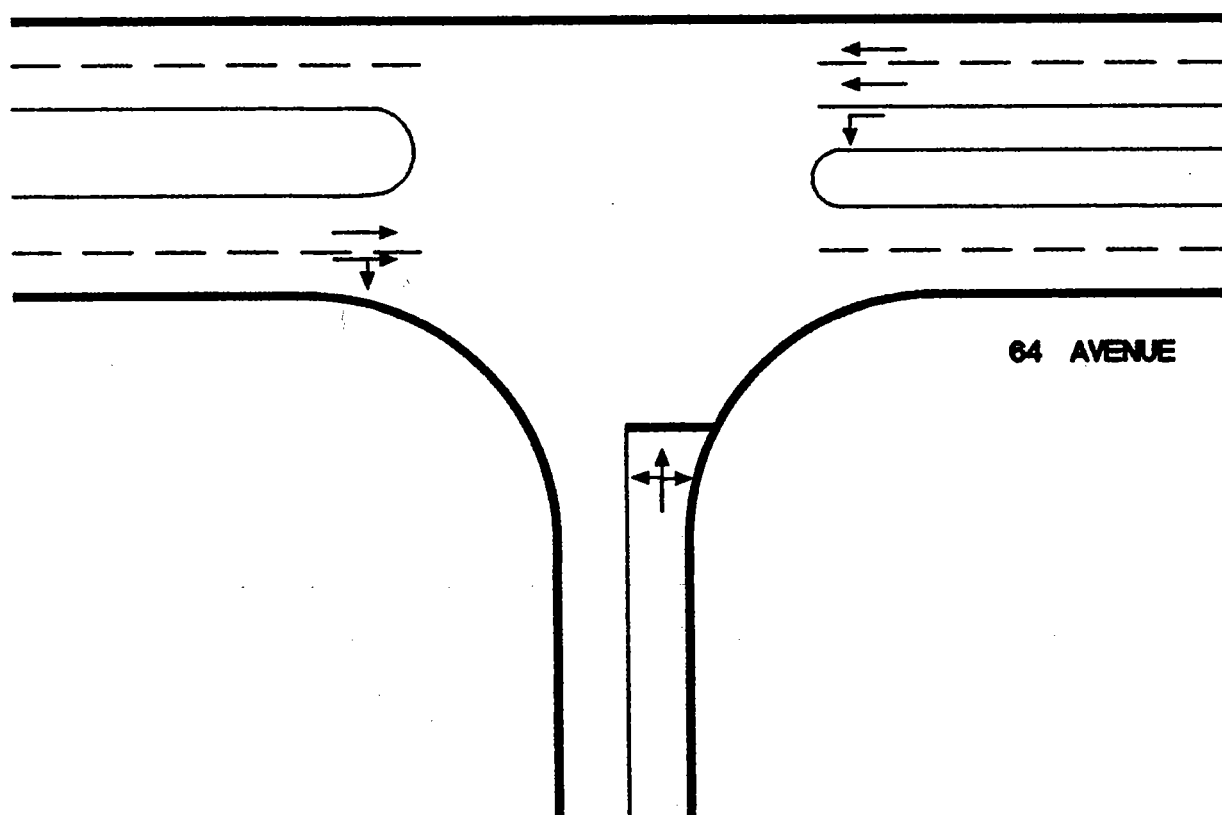
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95/02/21

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FIGURE T-7





**INTERSECTION LANING - 64 AVENUE AND 126 STREET 1995**  
(proposed)



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FIGURE T-8



126 STREET

128 STREET

64 AVENUE

PARK ON EAST SIDE OF ROAD

62 AVENUE

PARK ON SOUTH SIDE OF ROAD

60 AVENUE

PARK ON NORTH SIDE OF ROAD

- NO ON-STREET PARKING ———
- NO PARKING RESTRICTIONS - - -
- PARKING ON ONE SIDE ———

### ON-STREET PARKING PLAN



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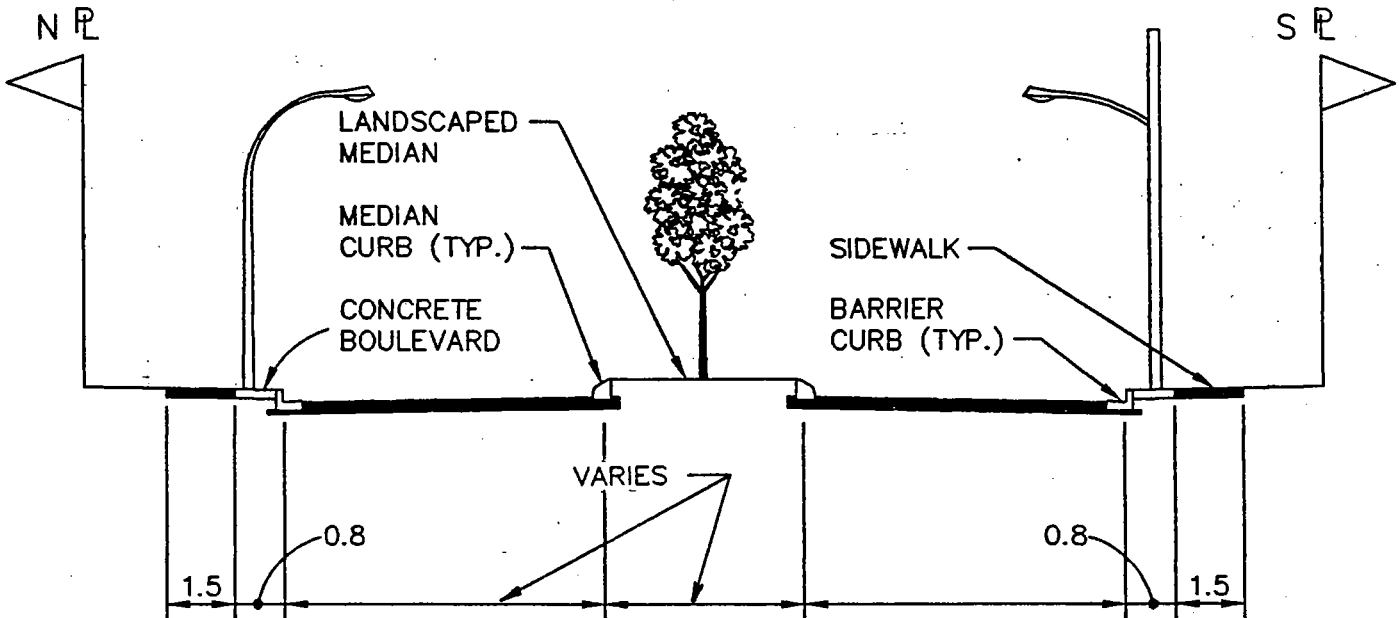
95/03/22

NTS

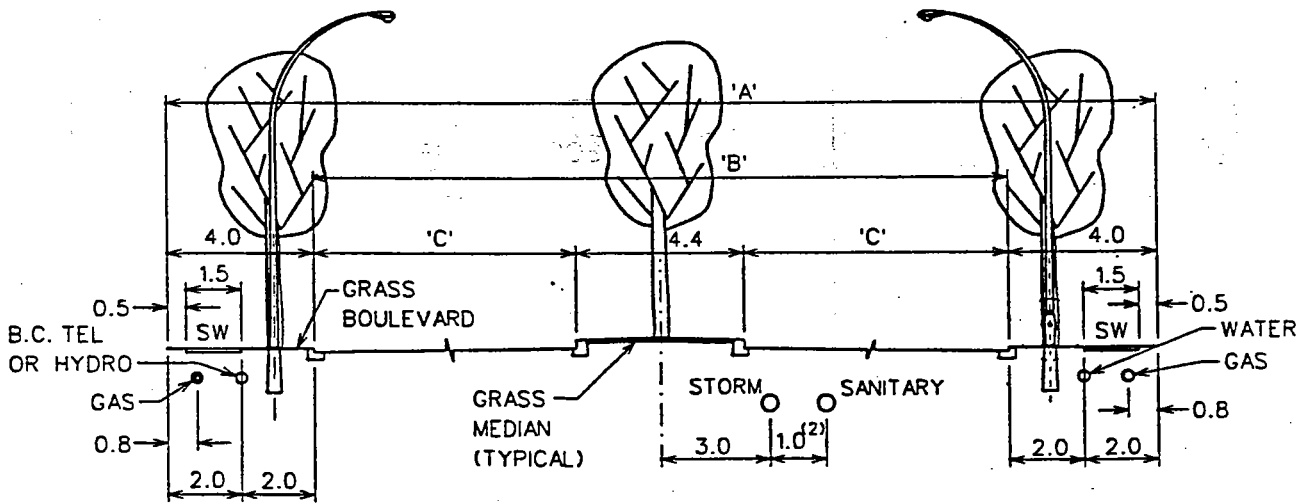
FIGURE T-9

# TYPICAL SECTION - 64th AVENUE

STA 0+999.995 TO 1+200 (UMA DESIGN)



# TYPICAL SECTION - 128th STREET



	'A'	'B'	'C'
4 LANE	27	19	7.3

NOTE: 1) DIMENSIONS SHOWN ARE FOR NEW ROAD CONSTRUCTION. SPECIAL DESIGN CONSIDERATION IS REQUIRED WHEN WIDENING AN EXISTING ARTERIAL ROAD.



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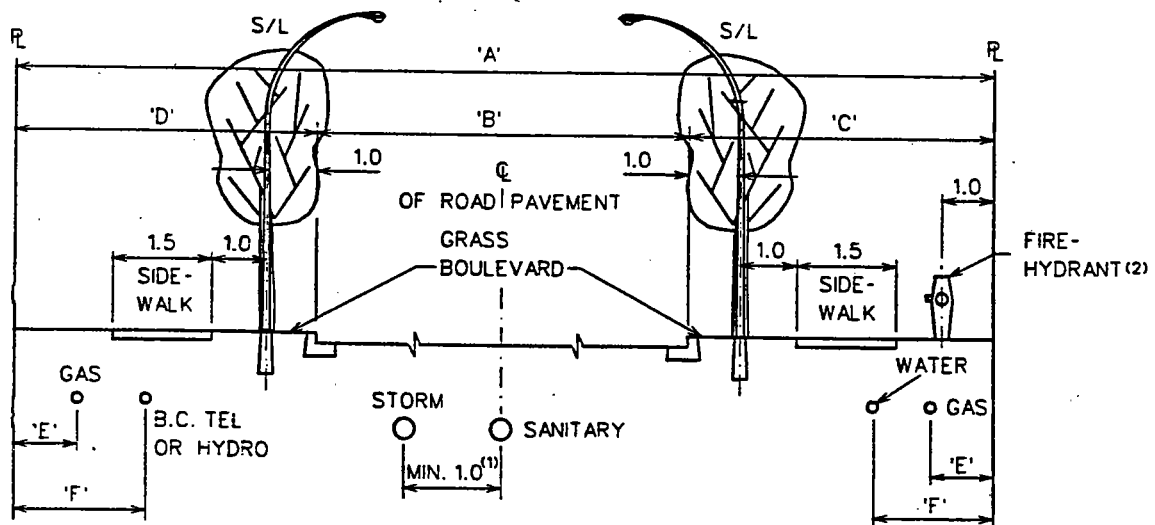
West Newton NCP  
CITY OF SURREY

95/04/04

NTS

FIGURE T-10

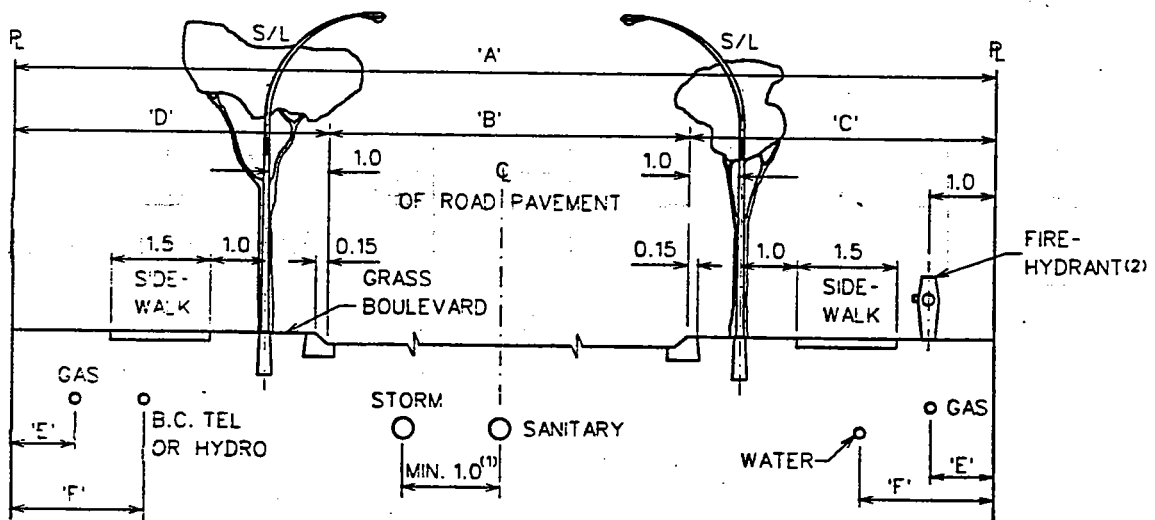
# TYPICAL SECTION - COLLECTOR ROAD



ROADS WITH BARRIER CURB

A	B	No. OF S/WALK	C	D	E	F
20	8.5	0	5.75	5.75	0.8	2
20	11*	0.12	4.5	4.5	0.6	2
20	11**	0.1	4.25	4.75	0.8	2
22	12.2	2.1	4.9	4.9	0.8	2
24	14	2.1	5	5	0.8	2

# TYPICAL SECTION - LOCAL ROAD



ROADS WITH ROLL-OVER CURB

A	B	No. OF S/WALK	C	D	E	F
16.5	8	0	4.25	4.25	0.8	2
20	8.5	1.2	5.75	5.75	0.8	2
20	11*	0.12	4.5	4.5	0.6	1.8
22	11**	0.1	5.5	5.5	0.8	2
22	12.2	2.1	4.9	4.9	0.8	2

NOTE : REFER TO MINIMUM SPACING BETWEEN SEWERS IN THE COMMON TRENCH DRAWING.



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CITY OF SURREY

95/04/04

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FIGURE T-11

# West Newton Bus Routes

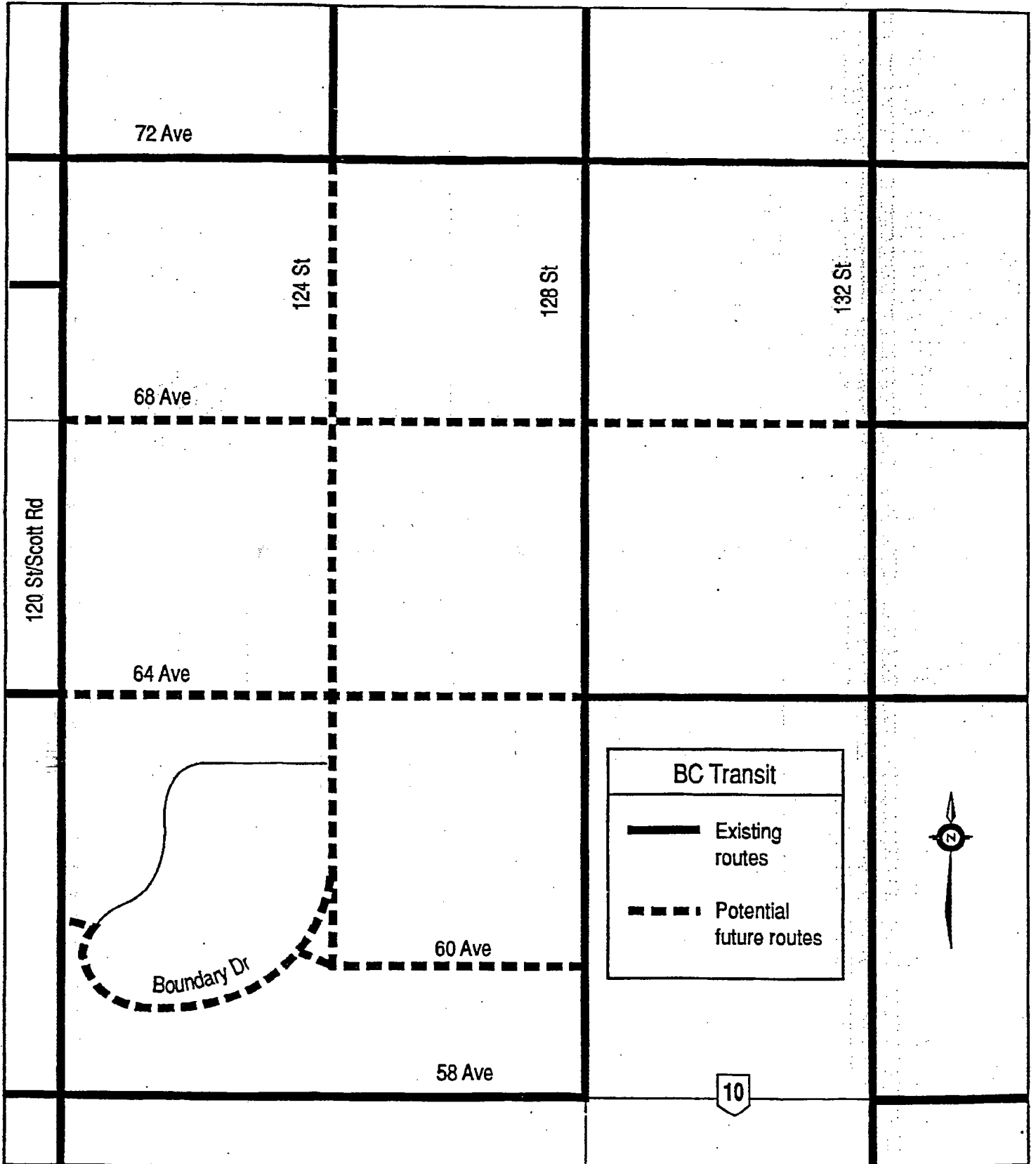
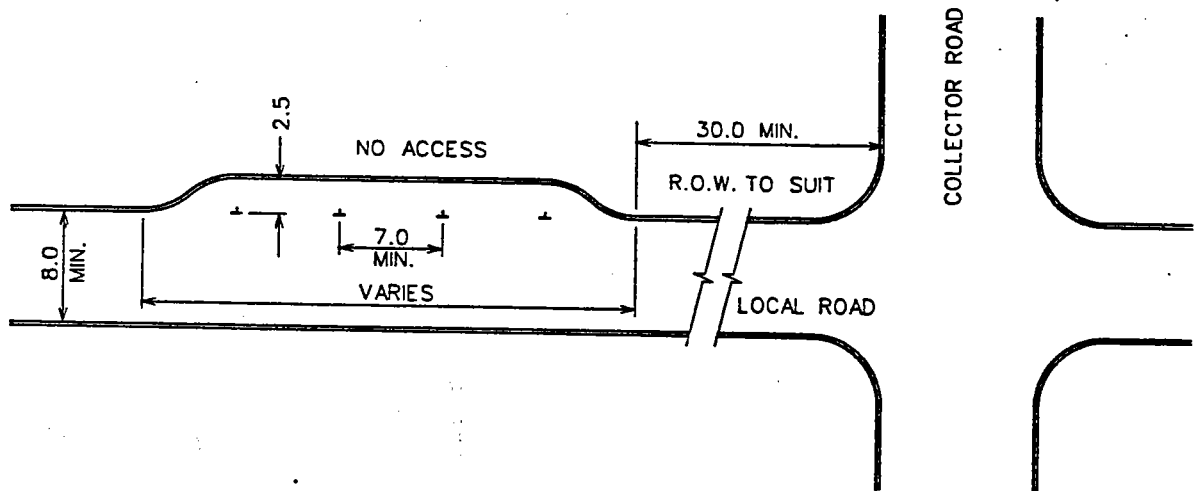


FIGURE T-12



PARALLEL PARKING  
FOR PASSENGER VEHICLES ONLY

ALL DIMENSIONS SHOWN IN METRES  
UNLESS OTHERWISE STATED

TITLE  
TYPICAL ON STREET VISITOR PARKING

3  
2  
1

REVISION DATE

APPROVED



THE CITY OF SURREY

APPROVED

DATE

FEB. 1992

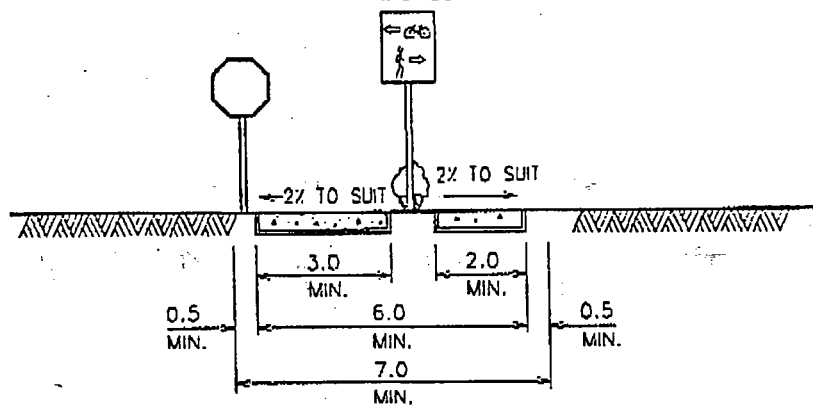
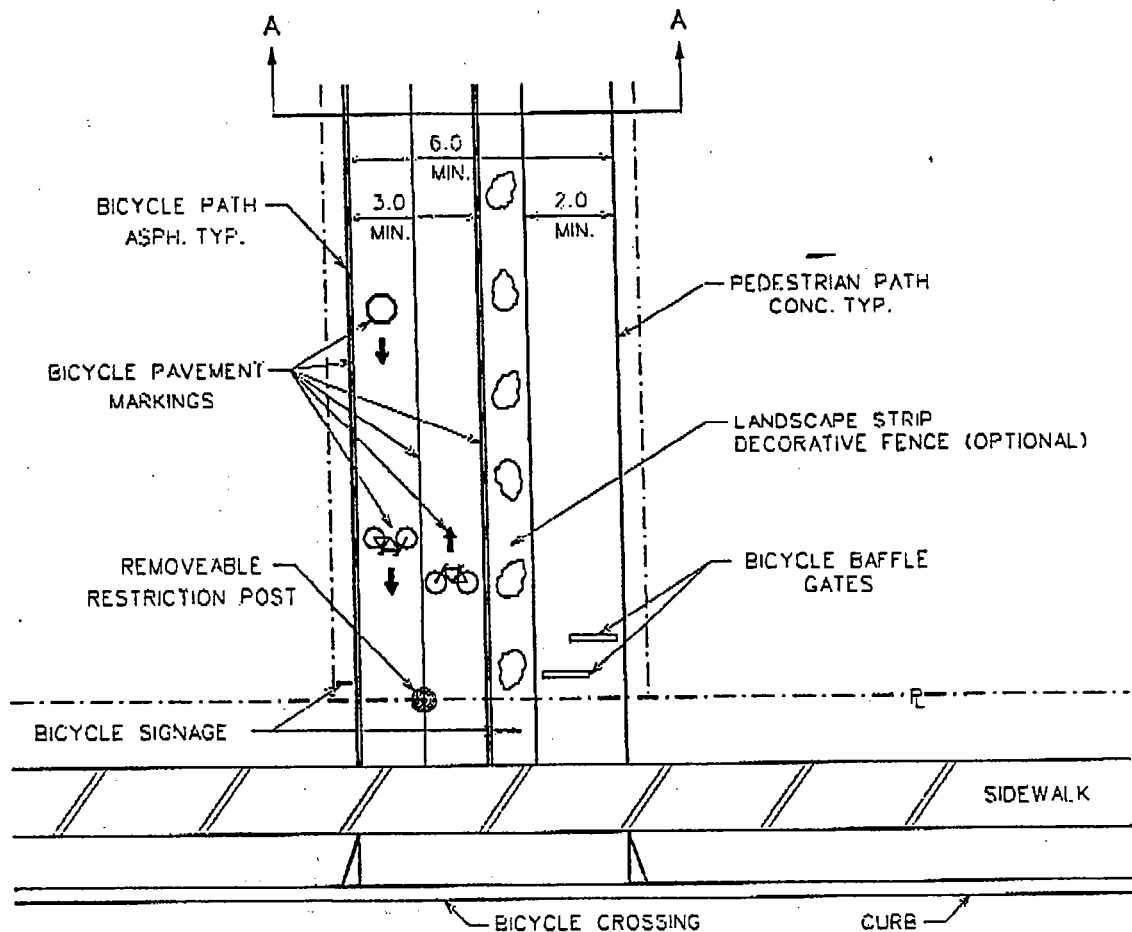
DRAWN BY

SURREY ENGINEERING

DRAWING NUMBER


SSD-R31

FIGURE T-13



SECTION A-A

- NOTE: 1) SEE PAVEMENT MARKING MANUAL FOR ROAD MARKINGS.  
 2) SEE SSD-C7 FOR OPTIONAL DECORATIVE FENCE.  
 3) SEE Dwg-C-11 IN MASTER MUNICIPAL SPECIFICATIONS FOR BICYCLE BAFFLE GATE.  
 4) SEE Dwg C-12 IN MASTER MUNICIPAL SPECIFICATIONS FOR REMOVEABLE RESTRICTION POST.  
 5) SEE RTAC FOR BIKEWAY DESIGN SPECIFICATIONS.  
 6) SEE SSD-C2, SSD-C4 OR PARKS STANDARD FOR LIMESTONE PATHWAYS.  
 7) LIGHTING REQUIRED AS DETERMINED BY THE ENGINEER.

ALL DIMENSIONS SHOWN IN METRES UNLESS OTHERWISE STATED		3		
		2		
TITLE SEPARATED BICYCLE / PEDESTRIAN PATH-WAY		1		
		REVISION DATE	APPROVED	
 THE CITY OF SURREY		APPROVED	DRAWING NUMBER <b>T-14</b>	
		DATE		NOVEMBER 1994
		DRAWN BY		SURREY ENGINEERING

**TABLE - T1**

**62 AVENUE CONSTRUCTION  
FROM 126th STREET TO 128th STREET  
COST ESTIMATE FOR ROADWORKS**

Item	Description	Units	Unit Price	Quantity	Amount	
<b>Roadworks</b>						
1	Clearing & grubbing	LS	\$20,000.00	1	\$20,000.00	
2	Excavation	Cu m	\$10.00	3,000	\$30,000.00	
3	Remove existing pavement	Sq m	\$14.00	1,200	\$16,800.00	
4	Granular fill	tonnes	\$9.00	2,000	\$18,000.00	
5	75mm minus subbase	tonnes	\$9.00	3,200	\$28,800.00	
6	19mm minus base	tonnes	\$13.50	1,100	\$14,850.00	
7	Upper course No. 1 HMAC	tonnes	\$40.00	600	\$24,000.00	
8	Lower course No. 1 HMAC	tonnes	\$37.00	600	\$22,200.00	
9	Tack coat	Sq m	\$0.25	4,500	\$1,125.00	
10	100mm thick concrete sidewalk	Sq m	\$30.00	1,250	\$37,500.00	
11	Concrete barrier curb and gutter	m	\$45.00	850	\$38,250.00	
<b>SUBTOTAL ROADWORKS</b>					<b>\$251,525.00</b>	
<b>Storm Sewers</b>						
1	Side inlet catch basin	Each	\$1,000.00	10	\$10,000.00	
2	200mm dia PVC catchbasin lead	m	\$85.00	70	\$5,950.00	
<b>SUBTOTAL SEWERS</b>					<b>\$15,950.00</b>	
<b>Electrical</b>						
1	Streetlighting	LS	\$30,000.00	1	\$30,000.00	
<b>SUBTOTAL ELECTRICAL</b>					<b>\$30,000.00</b>	
					Construction Contingency (10% of above)	\$29,747.50
					GST on Construction (7% of above)	\$20,823.25
<b>SUBTOTAL CONSTRUCTION COSTS</b>					<b>\$348,045.75</b>	
<b>NONCONTRACT ITEMS</b>						
<b>Landscaping (by Surrey crews)</b>						
1	Boulevard trees	Each	\$300.00	80	\$24,000.00	
2	Tree planter pockets	Each	\$50.00	80	\$4,000.00	
3	GST (7% of above)				\$1,960.00	
4	Overhead (6% of above)				\$1,680.00	
<b>SUBTOTAL LANDSCAPING</b>					<b>\$31,640.00</b>	
<b>Signing &amp; Pavement Markings (by Surrey crews)</b>						
1	Signing & pavement markings	Km	\$5,000.00	0.4	\$2,000.00	
2	GST (7% of above)				\$140.00	
3	Overhead (6% of above)				\$120.00	
<b>SUBTOTAL SIGNING &amp; PAVEMENT MARKING</b>					<b>\$2,260.00</b>	
<b>PROJECT COST</b>					<b>\$381,945.75</b>	



**TABLE - T2**

**60th AVENUE WIDENING  
HALF WIDTH FROM 127A STREET TO 128 STREET  
COST ESTIMATE FOR ROADWORKS**

Item	Description	Units	Unit Price	Quantity	Amount
<b>Roadworks</b>					
1	Clearing & grubbing	LS	\$5,000.00	1	\$5,000.00
2	Excavation	Cu m	\$10.00	1,000	\$10,000.00
3	Remove existing pavement	Sq m	\$14.00	1,200	\$16,800.00
4	Granular fill	tonnes	\$9.00	500	\$4,500.00
5	75mm minus subbase	tonnes	\$9.00	1,100	\$9,900.00
6	19mm minus base	tonnes	\$13.50	400	\$5,400.00
7	Upper course No. 1 HMAc	tonnes	\$40.00	200	\$8,000.00
8	Lower course No. 1 HMAc	tonnes	\$37.00	200	\$7,400.00
9	Tack coat	Sq m	\$0.25	1,500	\$375.00
10	100mm thick concrete sidewalk	Sq m	\$30.00	300	\$9,000.00
11	Concrete barrier curb and gutter	m	\$45.00	200	\$9,000.00
<b>SUBTOTAL ROADWORKS</b>					<b>\$85,375.00</b>
<b>Storm Sewers</b>					
1	Side inlet catch basin	Each	\$1,100.00	4	\$4,400.00
2	200mm dia PVC catchbasin lead	m	\$85.00	40	\$3,400.00
<b>SUBTOTAL SEWERS</b>					<b>\$7,800.00</b>
<b>Electrical</b>					
1	Streetlighting	LS	\$10,000.00	1	\$10,000.00
<b>SUBTOTAL ELECTRICAL</b>					<b>\$10,000.00</b>
					\$10,317.50
					\$7,222.25
<b>SUBTOTAL CONSTRUCTION COSTS</b>					<b>\$120,714.75</b>
<b>NONCONTRACT ITEMS</b>					
<b>Landscaping (by Surrey crews)</b>					
1	Boulevard trees	Each	\$300.00	20	\$6,000.00
2	Tree planter pockets	Each	\$50.00	20	\$1,000.00
3	GST (7% of above)				\$490.00
4	Overhead (6% of above)				\$420.00
<b>SUBTOTAL LANDSCAPING</b>					<b>\$7,910.00</b>
<b>Signing &amp; Pavement Markings (by Surrey crews)</b>					
1	Signing & pavement markings	Km	\$5,000.00	0.2	\$1,000.00
2	GST (7% of above)				\$70.00
3	Overhead (6% of above)				\$60.00
<b>SUBTOTAL SIGNING &amp; PAVEMENT MARKING</b>					<b>\$1,130.00</b>
<b>PROJECT COST</b>					<b>\$129,754.75</b>

**TABLE - T3**

**126th STREET WIDENING  
FROM 64TH AVENUE TO 62 AVENUE  
COST ESTIMATE FOR ROADWORKS**

Item	Description	Units	Unit Price	Quantity	Amount
<b>Roadworks</b>					
1	Clearing & grubbing	LS	\$10,000.00	1	\$10,000.00
2	Excavation	Cu m	\$10.00	2,000	\$20,000.00
3	Remove existing pavement	Sq m	\$14.00	2,400	\$33,600.00
4	Granular fill	tonnes	\$9.00	2,000	\$18,000.00
5	75mm minus subbase	tonnes	\$9.00	2,500	\$22,500.00
6	19mm minus base	tonnes	\$13.50	1,000	\$13,500.00
7	Upper course No. 1 HMAC	tonnes	\$40.00	500	\$20,000.00
8	Lower course No. 1 HMAC	tonnes	\$37.00	500	\$18,500.00
9	Tack coat	Sq m	\$0.25	4,000	\$1,000.00
10	100mm thick concrete sidewalk	Sq m	\$30.00	900	\$27,000.00
11	Concrete barrier curb and gutter	m	\$45.00	600	\$27,000.00
SUBTOTAL ROADWORKS					\$211,100.00
<b>Storm Sewers</b>					
1	Side inlet catch basin	Each	\$1,000.00	8	\$8,000.00
2	200mm dia PVC catchbasin lead	m	\$85.00	60	\$5,100.00
SUBTOTAL SEWERS					\$13,100.00
<b>Electrical</b>					
1	Streetlighting	LS	\$22,000.00	1	\$22,000.00
SUBTOTAL ELECTRICAL					\$22,000.00
Construction Contingency (10% of above)					\$24,620.00
GST on Construction (7% of above)					\$17,234.00
SUBTOTAL CONSTRUCTION COSTS					\$288,054.00
<b>NONCONTRACT ITEMS</b>					
<b>Landscaping (by Surrey crews)</b>					
1	Boulevard trees	Each	\$300.00	60	\$18,000.00
2	Tree planter pockets	Each	\$50.00	60	\$3,000.00
3	GST (7% of above)				\$1,470.00
4	Overhead (6% of above)				\$1,260.00
SUBTOTAL LANDSCAPING					\$23,730.00
<b>Signing &amp; Pavement Markings (by Surrey crews)</b>					
1	Signing & pavement markings	Km	\$5,000.00	0.4	\$2,000.00
2	GST (7% of above)				\$140.00
3	Overhead (6% of above)				\$120.00
SUBTOTAL SIGNING & PAVEMENT MARKING					\$2,260.00
<b>PROJECT COST</b>					<b>\$314,044.00</b>

TABLE T-4

SUMMARY OF RECOMMENDED IMPROVEMENTS  
WEST NEWTON NCP TRAFFIC STUDY

Required for 1994 Traffic	Highways Improvements			Municipal Road Improvements		
	Widenings	New Signals	Intersection Improvements	Widenings	New Signals	Intersection Improvements
		128 Street & Hwy 10 signal (installed in 1995)		64th Avenue from 120 Street to 132 Street	Traffic signal at 124 St. & 64 Ave	66th Avenue & 128 Street (installed in 1995)

Required for 1999 Traffic	Highways Improvements			Municipal Road Improvements		
	Widenings	New Signals	Intersection Improvements	Widenings	New Signals	Intersection Improvements
	Highway 10 from 120 Street to 132 Street	Add nb/sb left turn signals 120 St. & Hwy. 10		128 Street from 64 Avenue to 72 Avenue	128 Street & 68th Avenue	128 Street from Highway 10 to 64 Avenue
		Add NB/SB & EB/WB left turn signals		132 Street from 72 Avenue to 64 Avenue		Add EB & WB left turn signals at 132 Street & 72 Avenue
						Add nb/sb left turn arrow 64 Ave & 120 St.

\* In Surrey's Ten Year Plan

Required for 1999 with NCP Traffic	Highways Improvements			Municipal Road Improvements		
	Widenings	New Signals	Intersection Improvements	Widenings	New Signals	Intersection Improvements

NO NEW LANES OR SIGNALS ARE NEEDED

Required for 2004 Traffic	Highways Improvements			Municipal Road Improvements		
	Widenings	New Signals	Intersection Improvements	Widenings	New Signals	Intersection Improvements
	Add wb left turn lane 120 St. & Highway 10			132 Street from 64th Avenue to Highway 10		66th Avenue & 120 Street

Required for 2004 with NCP Traffic	Highways Improvements			Municipal Road Improvements		
	Widenings	New Signals	Intersection Improvements	Widenings	New Signals	Intersection Improvements

## 2.0 Storm Drainage

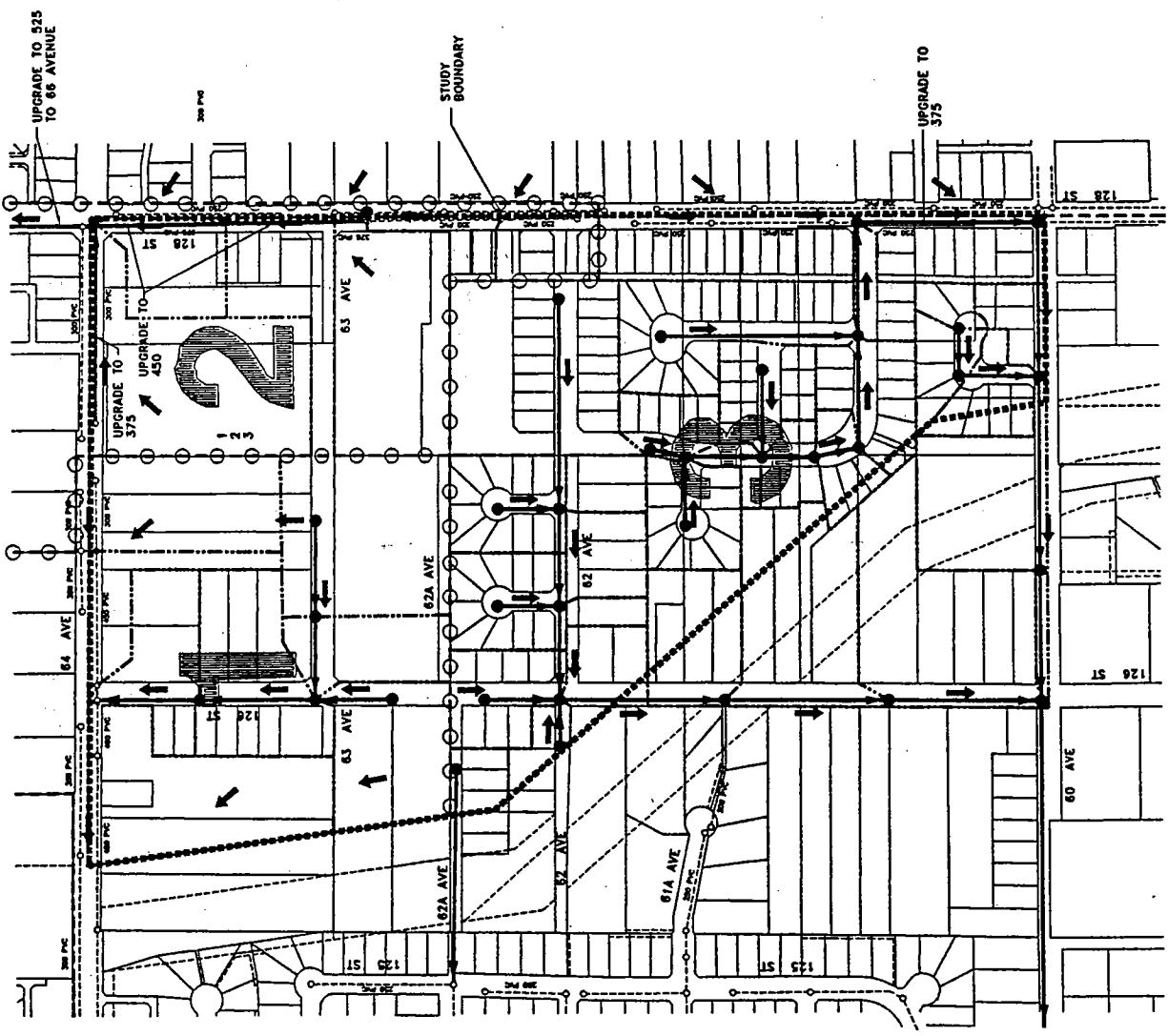
West Newton Sector 3 drains in three directions, and drainage catchment areas were delineated for the study area using digital contour plans obtained from the City (Figure A-1). Catchment Area 1 is the northwest subcatchment approximately 10.4 ha in area which drains west on 64 Avenue. The land uses proposed within this catchment are mainly compact cluster housing and townhouses with a few single-family lots. Catchment Area 2, the northeast subcatchment with an area of approximately 7.7 ha drains to the north to West Newton Sector 2 and is designated for future multi-family townhouses. The majority of the study area lies in Catchment Area 3, approximately 24.9 ha which drains to the south towards Highway 10 and the 128 Street storm sewer system. Single-family lots are proposed within catchment Area 3.

### 2.1 Catchment Area 1

The impact of Catchment Area 1 on the downstream storm sewers to Boundary Park Detention Pond (Figure A-2) was investigated by adding the flow from the catchment to the existing system. Storm sewer as-builts and available stormwater control plans were provided by the City.

Runoff from Catchment Area 1 was calculated using the Rational Method (Table 2-1). The flow was added to the design flows obtained from existing stormwater control plans (Table 2-2). In general, the increase in urban runoff due to proposed land uses for the catchment will not significantly affect the system, however, a few locations should be noted. Just downstream of 64 Avenue at 123A Avenue, the sewer runs along a side yard right-of-way. This pipe was designed to be surcharged under the 100-year condition, and the catchment increases the hydraulic grade line (HGL) by 0.03m. Three pipe sections on Boundary Drive West will be surcharged an amount ranging from 0.16 to 0.33m under the 5-year post-development condition, and the existing surcharge through a small section just upstream of the detention pond will rise slightly (Table 2-2). However, if the full development potential as outlined in the LAP contributing to the catchment is included, the surcharge condition worsens. A drainage servicing strategy will be outlined in the Stage 2 report. Concepts may include alternative routing of post-development flows or possible diversion of a portion of the drainage to Catchment Area 3.

The impact of development from the catchment will be mitigated downstream by the Boundary Park Detention Pond located within Boundary Park Subdivision developed by Genstar Development Company. It is understood that there is sufficient volume in the pond to accept flows from the entire contributing catchment, however, a review of the adequacy of this facility will be completed as part of the Stage 2 work. Should the Boundary Park Detention Pond be found to have insufficient volume, options to expand the facility will be considered.



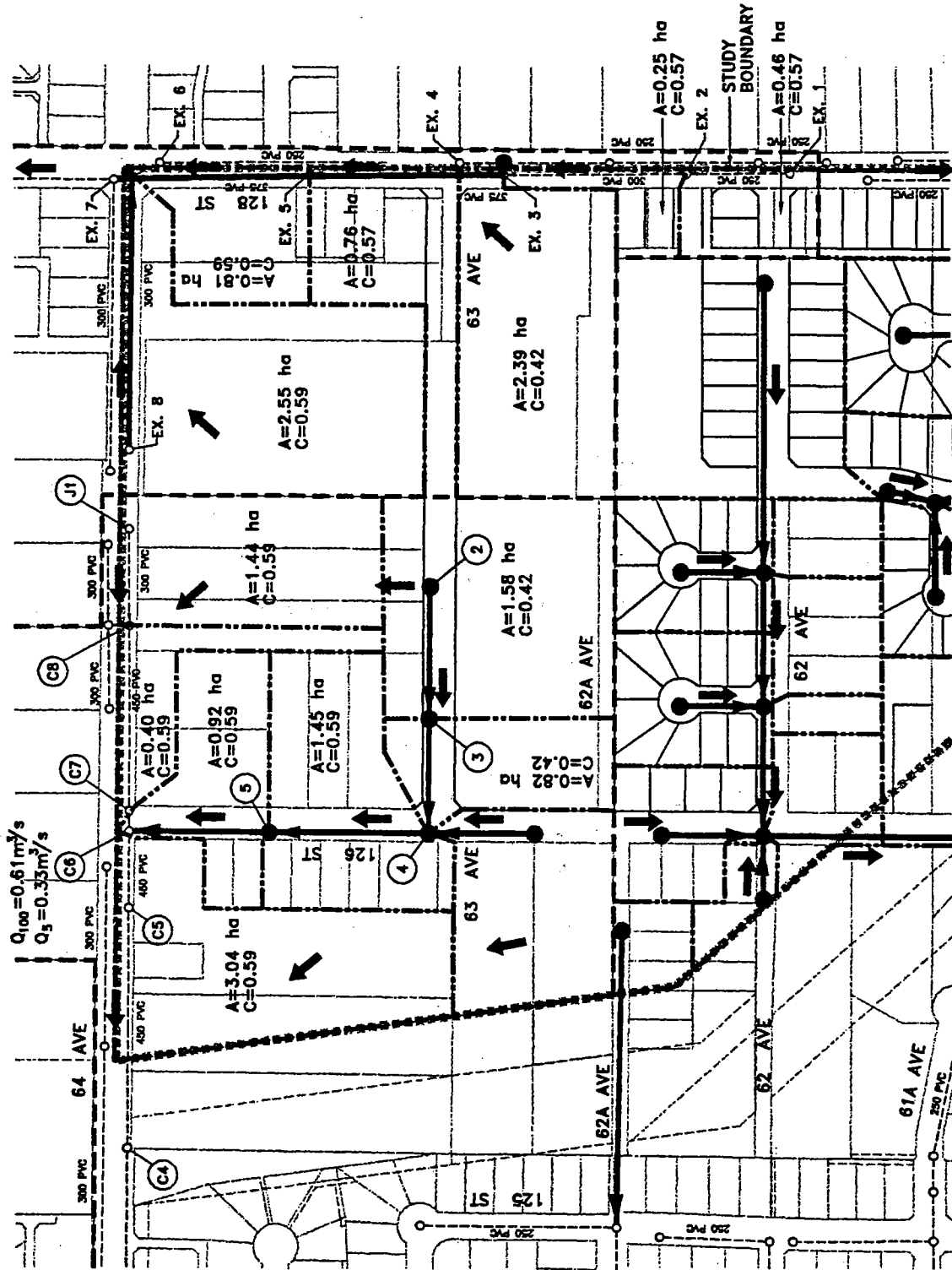
- LEGEND**
- STUDY BOUNDARY
  - DRAINAGE BREAK
  - CATCHMENT BOUNDARY
  - PROPOSED STORM SEWER
  - EXISTING STORM SEWER
  - ← MAJOR FLOW ON SURFACE

FIGURE A-1

**PROPOSED STORM DRAINAGE**

**NEIGHBOURHOOD CONCEPT PLAN**  
 West Newton, Neighbourhood 3  
 City of Surrey

UTMG



**FIGURE A-2**  
**CATCHMENT AREAS 1 AND 2 STORM DRAINAGE**

**NEIGHBOURHOOD CONCEPT PLAN**  
 West Newton, Neighbourhood 3  
 City of Surrey

Scale: 0, 50, 100



Table 2-1 - Runoff Calculations for Catchment Area 1

LOCATION	FR. MH	TO MH	ADDED AREA (ha)	TOTAL AREA (ha)	C	A x C	SUM(A x C)	Tc (min.)	I5 (mm/hr)	I100 (mm/hr)	Q5 (m <sup>3</sup> /s)	Q100 (m <sup>3</sup> /s)	CAPACITY (m <sup>3</sup> /s)	VELOCITY (m/s)	PIPE (mm)	SLOPE (%)	LENGTH (m)	TRAVEL TIME (min.)	100 YEAR FLOW
64 Avenue	J1	C8	1.44	1.44	0.59	0.85	0.85	15.00	32.00	60.00	0.076	0.142	0.097	1.37	EX. 300	1.0	50	0.61	on surface
	C8	C7	0.40	1.84	0.59	1.09	1.09	15.61	31.28	58.62	0.095	0.177	0.202	1.27	EX. 450	0.5	130	1.71	in pipe
63 Avenue	2	3	1.58	1.58	0.42	0.66	0.66	15.00	32.00	60.00	0.059	0.110	0.086	1.22	300	0.8	80	1.09	on surface
	3	4	0.82	2.40	0.42	1.01	1.01	16.09	30.74	57.59	0.086	0.162	0.097	1.37	300	1.0	75	0.91	on surface
126 Street	4	5	1.45	3.85	0.59	0.86	1.87	17.00	29.78	55.76	0.155	0.290	0.175	1.59	375	1.0	105	1.10	on surface
	5	C6	0.92	4.77	0.59	2.41	2.41	18.10	28.73	53.76	0.193	0.360	0.215	1.94	375	1.5	90	0.77	on surface
128 Street	C6	C4	3.04	7.81	0.59	1.79	4.20	18.87	28.05	52.46	0.327	0.610	0.451	2.83	EX. 450	2.5	125	0.73	in pipe

Table 2-2 - Analysis of Storm Sewer System to Boundary Park Detention Pond

LOCATION	FR. MH	TO MH	PIPE (mm)	PIPE MATERIAL	SLOPE (%)	LENGTH (m)	CAPACITY (m <sup>3</sup> /s)	ORIGINAL Q5 (m <sup>3</sup> /s)	ORIGINAL Q100 (m <sup>3</sup> /s)	REVISED Q5 (m <sup>3</sup> /s)	REVISED Q100 (m <sup>3</sup> /s)	FLOW CONDITION (5 year/100 year)	EXPLANATORY REMARKS
Catchment Area 1 64 Avenue (south side)	C5	C4	450	conc	3.45	142.3	0.63	0.04	0.13	0.33	0.61	In pipe/ on roadway	Based on Rational Method from 64 Avenue Upgrading and as-built plans from 64 Avenue Upgrading and as-built plans from 64 Avenue Upgrading and as-built plans from 64 Avenue Upgrading and as-built plans from 64 Avenue Upgrading and as-built plans from IMC Storm Water Control Plan from IMC Storm Water Control Plan from IMC Storm Water Control Plan from IMC Storm Water Control Plan from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans for Ph. 7 of Boundary Park from as-built plans for Ph. 7 of Boundary Park from as-built plans for Ph. 6 of Boundary Park from as-built plans for Ph. 6 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park
	C4	C3	450	conc	2.97	94.9	0.54	0.05	0.13	0.37	0.79	In pipe/ on roadway	
	C3	C2	450	conc	5.12	105.5	0.76	0.07	0.17	0.40	0.83	In pipe/ on roadway	
	C2	C1	450	conc	5.12	62.6	0.76	0.09	0.21	0.42	0.87	In pipe/ on roadway	
	C1	A1	525	conc	1.67	102.3	0.67	0.11	0.25	0.44	0.91	In pipe/ on roadway	
	A1	IMC-D4	750	conc	1.00	47.7	1.31	1.02	1.75	0.77	1.71	In pipe/ additional 0.03m surcharge	
63A Avenue R.O.W.	IMC-D4	IMC-D6	750	conc	0.60	54.8	1.02	1.07	1.84	0.82	1.80	In pipe/ additional 0.03m surcharge	from IMC Storm Water Control Plan from IMC Storm Water Control Plan from IMC Storm Water Control Plan from IMC Storm Water Control Plan from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans for Ph. 7 of Boundary Park from as-built plans for Ph. 7 of Boundary Park from as-built plans for Ph. 6 of Boundary Park from as-built plans for Ph. 6 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park
	IMC-D6	IMC-D7	900	conc	1.52	119.0	2.64	1.12	1.93	0.87	1.89	In pipe/ in pipe	
	IMC-D7	IMC-D8	900	conc	1.26	51.2	2.40	1.13	1.94	0.88	1.80	In pipe/ in pipe	
	IMC-D8	IMC-D9	900	conc	1.23	69.6	2.37	1.13	1.94	0.88	1.80	In pipe/ in pipe	
	IMC-D9	A&M-D5	900	conc	1.08	128.5	2.22	1.08	1.85	1.88	1.90	In pipe/ on roadway	
63 Ave. Boundary Drive West	A&M-D5	A&M-D4	900	conc	1.92	43.3	2.96	1.82	1.85	1.88	1.88	In pipe/ on roadway	from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans for Ph. 7 of Boundary Park from as-built plans for Ph. 7 of Boundary Park from as-built plans for Ph. 6 of Boundary Park from as-built plans for Ph. 6 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park
	A&M-D4	A&M-D3	900	conc	1.82	47.3	2.88	1.82	1.85	1.88	1.88	In pipe/ on roadway	
	A&M-D3	A&M-D2	900	conc	0.96	53.1	2.10	1.85 (assumed)	1.85	1.88	1.88	In pipe/ on roadway	
	A&M-D2	A&M-D1	900	conc	0.84	48.4	1.96	1.71	1.71	2.04	2.04	In pipe/ on roadway	
	A&M-D1	Ph7-Cap	900	conc	0.57	40.5	1.81	1.65	1.71	2.04	2.04	In pipe/ on roadway	
Boundary Drive West	Ph7-Cap	Ph7-D11	900	conc	0.89	51.8	2.02	1.71	1.85	2.15	2.15	0.33m surcharge/ on roadway	from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans produced by Applin & Martin from as-built plans for Ph. 7 of Boundary Park from as-built plans for Ph. 7 of Boundary Park from as-built plans for Ph. 6 of Boundary Park from as-built plans for Ph. 6 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park
	Ph7-D11	Ph7-D10	900	conc	0.68	60.3	1.74	1.85	1.85	2.04	2.04	0.16m surcharge/ on roadway	
	Ph7-D10	Ph6-T1	1050	conc	0.47	73.1	2.21	1.71	1.71	2.15	2.15	In pipe/ on roadway	
	Ph6-T1	Ph6-D1	1050	conc	1.06	18.0	3.32	1.71	1.71	2.15	2.15	In pipe/ on roadway	
	Ph6-D1	Ph5-CO	1050	conc	0.80	35.1	2.88	1.82	1.82	2.15	2.15	In pipe/ on roadway	
Pond Inlet	Ph5-CO	Ph5-D1	1050	conc	1.08	57.3	3.35	1.82	1.82	2.15	2.15	additional 0.03m surcharge/ on roadway	from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park from as-built plans for Ph. 5 of Boundary Park
	Ph5-D1	Ph5-Oil Sep	1050	conc	0.40	30.4	2.05	1.82	1.82	2.18	2.18	In backwater from pond	
	Ph5-Oil Sep	Ph5-Ex	1350	conc	3.35	5.0	11.54	1.85	1.85	2.18	2.18	In backwater from pond	
	Ph5-Ex	Outfall	1350	conc	3.72	47.0	12.16	1.85	1.85	2.18	2.18	In backwater from pond	
	Outfall												



## 2.2 *Catchment Area 2*

Catchment Area 2 drains north to Sector 2 which almost entirely drains to Cougar Creek. As a result, and the contributing catchment area from this NCP is relatively insignificant. Downstream drainage planning to take into account Catchment Area 2 was confirmed with the consultant responsible for preparation of the NCP for West Newton Sector 2.

Using the Rational Method the runoff flows for the 5 and 100 year conditions are  $0.31 \text{ m}^3/\text{s}$  and  $0.59 \text{ m}^3/\text{s}$  respectively (Table 2-3), and the following sections of storm sewer will require upgrading:

- from 300 to 375mm diameter on 64 Avenue west of the intersection with 128 Street;
- from 375 to 450mm diameter on 128 Street from 63A Avenue to north of 64 Avenues; and
- from 450 to 525mm diameter on 128 Street from north of 64 Avenue to 66 Avenue.

## 2.3 *Catchment Area 3*

An expanded drainage analysis for Catchment Area 3 was completed. This area ultimately discharges downstream into Eugene Creek. The objective of the analysis was to determine the most effective stormwater management alternative such that the impact of runoff under the future land use condition on Eugene Creek would be mitigated. From hydrologic modelling results, construction of the community detention facility adjacent to J.T Brown Elementary School will address increased flows expected from development, however, it is understood that Council has recently adopted a new drainage policy. It is not desirable to have ponds adjacent to a school site, and a public consultation process will be required for the siting of future detention facilities. As a result, consideration will be given to a stormwater alternative which involves directing flows through a trunk storm sewer along New McLellan Road, 121A Street, and Hillside Road to the lowland at the bottom of the Eugene Creek ravine as part of Stage 2 work. Acceptance of this alternative will be confirmed with Ministry of Environment.

At present the provision for a pond at the school site is included in the current 10 Year Servicing Plan. The draft report which details the Eugene Creek drainage analysis was previously submitted to the City on 1995 04 03.

## 2.4 *Current 10 Year Servicing Plan*

The current 10 Year Servicing Plan includes allowances for the following drainage projects of relevance to the study area. The projects are summarized in Table 2-4 including the estimated construction cost.

Table 2-3 - Runoff Calculations for Catchment Area 2

LOCATION	FR. MH	TO MH	ADDED AREA (ha)	TOTAL AREA (ha)	C	A x C	SUM(A x C)	Tc (min.)	I5 (mm/hr)	I100 (mm/hr)	Q5 (m <sup>3</sup> /s)	Q100 (m <sup>3</sup> /s)	CAPACITY (m <sup>3</sup> /s)	VELOCITY (m/s)	PIPE (mm)	SLOPE (%)	LENGTH (m)	TRAVEL TIME (min.)	100 YEAR FLOW
128 Street	ex1	ex2		0.46	0.57	0.26	0.26	15.00	32.00	60.00	0.023	0.044	0.043	0.86	ex 250	0.5	70	1.36	In pipe
	ex2	ex3	0.69	1.15	0.57	0.39	0.66	16.36	30.45	57.03	0.055	0.105	0.097	1.37	ex300	1.0	120	1.5	on surf.
	ex3	ex4	0.40	1.55	0.57	0.23	0.88	17.82	28.99	54.25	0.071	0.133	0.175	1.59	ex375	1.0	30	0.31	In pipe
	1	ex4		1.55	0.57	0.88	0.88	15.00	32.00	60.00	0.079	0.147	0.097	1.37	300	1.0	80	0.97	on surf.
64 Avenue	ex4	ex5	0.76	3.86	0.57	0.43	2.20	18.13	28.70	53.70	0.175	0.328	0.175	1.59	ex375	1.0	90	0.94	on surf.
	ex5	ex6	0.81	4.67	0.59	0.48	2.68	19.07	27.88	52.14	0.207	0.388	0.285	1.79	450	1.0	115	1.07	on surf.
128 Street	ex8	ex6	2.55	2.55	0.59	1.50	1.50	15.00	32.00	60.00	0.133	0.250	0.175	1.59	375	1.0	150	1.57	on surf.
	ex6	ex7	0.00	7.22	0.59	4.18	4.18	20.14	27.02	50.50	0.313	0.586	0.349	2.2	450	1.5	15	0.26	on surf.

**Table 2-4**  
**Summary of Drainage Projects in Current 10 Year Servicing Plan**

Ref#	Location	Description	Estimated Cost	Start Before (Year)	Include d in DCCs?
303	125 St. : 60 Ave.	Enclose ditch near J.T. Brown Elementary School	\$35,000	2002	No
3093	125 St. : 59 Ave.	Storage within proposed park	\$390,000	1997	Yes
3144	124A St. : 58 - 60 Ave.	Trunk upgrade	\$200,000	1997	Yes
3208	60 Ave. : 124A - 126 St.	New sewer	\$200,000	1997	Yes
4063	122 St. : 52 - 55 Ave.	Erosion protection of tributary to Mud Bay	\$350,000	1997	Yes

It is recommended that the trunk upgrade (Reference #3144) be revised to 125 Street to service the detention facility adjacent to J.T. Brown Elementary School. As well, consideration should be given to revising the limits of the new sewer construction on 60 Avenue to between 125 Street and the B.C. Hydro right-of-way. With the exception of Reference #303, all other items are growth related and are included in the drainage and stormwater detention Development Cost Charges (DCCs).

### 2.5 *Cost Recovery*

As no downstream improvements are required from Catchment Areas 1 and 2, no off-site costs will be incurred. Items outlined for Catchment Area 3 such as the trunk upgrade and detention pond have been included in the current 10 Year Servicing Plan and will be funded through DCCs. If at the time of development, these facilities are required and have not been constructed, the Developer may construct the works and receive a DCC rebate to the maximum value of the charge. A Latecomer's Agreement could be placed on the remaining portion of costs. The current drainage and stormwater detention DCCs for the proposed zoning designations in the study area are summarized in Table 2-5.

**Table 2-5  
Current Drainage and Stormwater Detention DCCs**

Zoning Designation	Drainage and Stormwater Detention DCC
RF	\$3,190 per lot
PA	\$810/1,000 sq. ft. building
RM-10	\$1,120/dwelling unit
RM-15	\$1,120/dwelling unit

Three lots fronting 62A Avenue west of 126 Street are proposed to be serviced by storm sewer discharging at 125 Street. As this small catchment has no further development potential, it is proposed that the storm sewer be constructed as a local improvement project.

#### *2.6 Phasing Considerations*

Construction of storm sewers to adequately service a development will be the responsibility of each Developer, as required in accordance with the Subdivision Control Bylaw. Requirements at the rezoning stage will include proving out of downstream facilities. It is understood that 30% of development will be allowed to proceed with interim detention before the ultimate facility must be in place.

An area where storm servicing alternatives are dependent on phasing is noted. Two lots fronting 126 Street between 62A and 63 Avenues are proposed to be developed as compact housing. If developed with other similarly zoned lots as one consolidated parcel, it is expected that the internal storm sewer alignment will route flows to 64 Avenue. If developed independently, storm servicing would be provided on 126 Street. As each of these lots drains west, a portion of the site may not be adequately serviced by storm sewers on 126 Street. In this case, the compact housing zone will provide flexibility to cluster homes to drain into 126 Street storm sewers, or the Developer will have to obtain a privately maintained easement to direct flows to 64 Avenue.

### 3.0 Sanitary Sewer

At present, the study area is largely unsewered. Downstream sewers exist to the west on 64 and 61A Avenues as well as to the south on 60 Avenue. Discharge into existing downstream sewers has been proposed at three locations (Figure 10, main text):

- for the northwest catchment area: 64 Avenue at the lane west of 126 Street;
- for the northeast catchment area: 128 Street north of 63 Avenue; and
- for the south catchment area: 60 Avenue west of 126 Street.

For the three catchment areas, the City completed an analysis of the existing downstream sanitary system. The calculated flows were based on the proposed development yield within the NCP and full LAP development potential outside the study area.

For the northwest catchment area, the equivalent population is approximately 420 persons. This area will be serviced by existing sanitary sewers on Boundary Drive East to Boundary Drive South. Flows eventually drain into the trunk sewer in the southwest corner of Boundary Park Subdivision. The system has capacity for an equivalent population of 720 persons. Although the system can accommodate the sanitary flow from the NCP catchment, the remaining capacity could be taken up by areas outside the NCP. Depending on the capacity existing at the time of an application, some improvements may be required. Thus, the remaining sewer capacity will be reviewed at the time of each application.

The northeast catchment is tributary to the existing sewer on 128 Street and 64 Avenue. The downstream system for this area has sufficient capacity to handle the full development flow.

The south catchment and the property at 126 Street and 60 Avenue currently under a rezoning application together will generate sanitary flows for an equivalent population of approximately 900 persons. Although it may be possible to service a portion of the catchment through the sewers in Boundary Park Subdivision, the feasibility of this servicing option is dependent on the remaining system capacity at the time of application, as discussed previously. Some upgrading may be required, or alternative servicing strategies can be implemented. One alternative involves routing flows south on 126 Street to Highway 10 and into the existing sewer south of Highway 10 and into the existing sewer south of Highway 10 on 124A Street. This section has capacity for an equivalent population of approximately 730 persons. A second alternative ties into 123 Street south of Highway 10. Any application which requires an improvement to the existing system but is ultimately tributary to the Highway 10 system will be reviewed to determine the exact requirements at time of the application.

For the servicing alternatives, a 375mm diameter sanitary sewer on Highway 10 will service the south catchment as well as a catchment east of 128 Street within the LAP. The total contributing peak flow at 126 Street and Highway 10 was calculated to be 44 l/s. This sewer is considered a trunk, and it is recommended that this sewer be included in the Ten Year Capital Plan. The flow calculation is included in Appendix 2 - Part B.

### 3.1 Cost Recovery

At the time of each development, adequate downstream capacity will be reviewed. If necessary, sanitary sewer improvements will be required. A 375mm diameter trunk sewer is proposed to be included in the Ten Year Capital Plan. If the sewer has not been constructed when required at the time of an application, the Developer will be required to extend the system. In this case, the Developer will be entitled to a rebate up to the total amount of the applicable sanitary sewer DCCs.

An initial phase of development may possibly proceed without construction of the trunk, provided that adequate downstream capacity is proven. It is understood that discharge at 61A Avenue will not be permitted. Ultimately, construction of sanitary sewer is required on 126 Avenue to 60 Avenue and on 60 Avenue to west of the study area.

The current sanitary sewer DCCs for the proposed zoning designations in the study area are summarized in Table 3-1.

**Table 3-1  
Current Sanitary Sewer DCCs**

Zoning Designation	Sanitary Sewer DCCs
RF	\$900 per lot
PA	\$280/1,000 sq. ft. bldg.
RM-10	\$790 /du
RM-15	\$790 /du

### 3.2 Phasing Considerations

Internally within the NCP, a few areas where sanitary servicing alternatives are dependent on phasing is noted. Two lots fronting 126 Street between 62A and 63 Avenues are proposed to be developed as compact housing. If developed with other similarly zoned lots as one consolidated parcel, it is expected that the internal sanitary sewer alignment will route flows to 64 Avenue. If developed independently, sanitary

servicing would be provided on 126 Street. As each of these lots drains west, a portion of the site may not be adequately serviced by gravity into sanitary sewers on 126 Street. In this case, the compact housing zone will provide flexibility to cluster homes to drain into 126 Street sanitary sewers, or a Developer maintained pump station and forcemain to the gravity sewer will be required. Three lots fronting 62A Avenue west of 126 Street are proposed to be serviced by sanitary sewer discharging at 125 Street. Alternatively, each lot could be serviced by a private pump station and forcemain to discharge into gravity sewers on 126 Street.

**Table 4-2**  
**Current Water DCCs**

Zoning Designation	Water DCCs
RF	\$1,010 per lot
PA	\$330/1,000 sq. ft. building
RM-10	\$910/dwelling unit
RM-15	\$910/dwelling unit



## 4.0 Watermains

The NCP study area is provided with many water supply and distribution facilities. The GVRD Newton Pump Station and Reservoir is located at 62A Avenue and 128 Street. The study area is within the 135 m HGL pressure zone and is well serviced by existing 300mm diameter grid mains on 126 Street from 60 to 62A Avenues, 60 Avenue west of 126 Street, on 64 Avenue, and feeding from the Reservoir on 62A Avenue. Other existing large diameter mains include the 900mm diameter steel main on 62A Avenue, 126 Street, and 64 Avenue and the 600mm and 750mm diameter mains on 128 Street, however it is understood that these mains are not available for supplying the study area. The City's ultimate water grid map shows additional grid mains to be constructed along 60 Avenue and a portion of 128 Street.

Within the NCP, the proposed servicing consists of distribution mains along local roads which will loop into existing mains. A review of the required design flows to service proposed development was completed. The residual pressure was calculated at two critical locations for proposed townhouses (RM-15) at 63 Avenue and approximately 27 Street, and for single family residential (RF) at the 127A Street cul-de-sac. The calculations are included in Appendix 2 - Part B.

While a 200mm diameter main was found to be adequate to provide a fireflow of 120 l/s to the townhouses, the resulting velocity exceeded the 2 m/s maximum. Therefore, for any townhouse development which does not front the 300mm diameter main on 64 Avenue, a 300mm diameter main will have to be extended. Although land assembly is encouraged, each parcel must be fully serviced in the event development proceeds individually. For example, smaller townhouse parcels fronting 126 and 128 Streets will require a 300mm diameter main to be extended from 64 Avenue to the site.

For the single family cul-de-sac, a 200mm diameter main was found to be adequate to provide a fireflow of 60 l/s. Figure 11, main text, shows a schematic of the proposed watermain network including grid improvements. The proposed watermain system is adequate to meet domestic and fireflow demands generated by the proposed land uses, and the internal watermain network will be constructed by each Developer as required. Oversizing costs, if required, will be paid by the City for proposed grid mains to 300mm diameter. Each Developer will be required to demonstrate that the system as extended will be capable of meeting interim and ultimate fireflow conditions with regard to flow, residual pressure, and velocity in accordance with the City's Design Criteria.

### 4.1 Current 10 Year Servicing Plan

The current 10 Year Servicing Plan includes allowances for the following water supply, major grid, and replacement works of relevance to the study area. The projects are summarized in Table 4-1 including the estimated construction cost.

**Table 4-1  
Summary of Water Projects in Current 10 Year Servicing Plan**

Ref#	Location	Description	Estimated Cost	Start Before	Included in DCCs?
3443	127A St. and 62A Ave.	Newton Pump Station Upsizing	\$35,000	2002	Yes
357	128 St.: 62A to 64 Ave.	200mm diameter	\$35,000	2002	Yes
316	126 St.: 62A to 64 Ave.	Replace 100mm diameter	\$35,000	2002	No
1377	62 Ave.: 126 St. to west	Replace 100mm diameter	\$35,000	2002	No
1385	62A Ave: 126 St. to west	Replace 100mm diameter	\$35,000	2002	No

As discussed previously, References #357 and #316 may require 300mm diameter mains, depending on the application. It is understood that the Developer would construct this main, if required by the proposed development.

With the exception of the 100mm diameter watermain replacements, all other items are growth related and are included in Development Cost Charges (DCCs).

#### *4.2 Cost Recovery and Phasing Considerations*

Each Developer will be required to demonstrate that the system as extended will be capable of meeting interim and ultimate fireflow conditions with regard to flow, residual pressure, and velocity in accordance with the City's Design Criteria. If development precedes construction of the DCC work, the Developer may construct the required watermain, and the City would pay for oversizing costs for proposed grid mains to 300mm diameter.

The current water DCCs for the proposed zoning designations in the study area are summarized in Table 4-2.

## **PART B**

- **Contributing Area to Proposed 375mm Diameter Sanitary on Highway 10**
- **Review of Water Distribution Adequacy**

CONTRIBUTING AREA TO PROPOSED 375 mm  $\phi$   
SANITARY ON HIGHWAY 10

CONTRIBUTING CATCHMENT  
(ACCORDING TO NCP)

AREA	R = 4.9 ha	}	@ 5 units/acre $\dagger$ 3.5 persons/unit
	S 28.0		
	T 9.3		
	V 2.2		
	Q 10.5		@ 1.8 units/acre $\dagger$ 3.5 persons/unit
	P 1.0		@ 10 units/acre $\dagger$ 3.5 persons/unit
	<u>55.9 ha</u>		

R, S, T, V =

$$(4.9 + 28.0 + 9.3 + 2.2 \text{ ha}) \left( \frac{1 \text{ acre}}{.4047 \text{ ha}} \right) = 109.7 \text{ acre}$$

$$(109.7 \text{ acre}) \left( \frac{5 \text{ units}}{\text{ac}} \right) \left( \frac{3.5 \text{ per}}{\text{unit}} \right) = 1,920 \text{ persons}$$

$$Q = (10.5 \text{ ha}) \left( \frac{1 \text{ acre}}{.4047 \text{ ha}} \right) \left( \frac{1.8 \text{ unit}}{\text{ac.}} \right) \left( \frac{3.5 \text{ per}}{\text{unit}} \right) = 163 \text{ persons}$$

$$P = (1.0 \text{ ha}) \left( \frac{1 \text{ acre}}{.4047 \text{ ha}} \right) \left( \frac{10 \text{ unit}}{\text{ac.}} \right) \left( \frac{3.0 \text{ per}}{\text{unit}} \right) = 74 \text{ persons}$$

TOTAL LAP CONTRIBUTION: 2,157

$$Q_p = (2157) \left( \frac{350 \text{ l}}{\text{cap. d}} \right) \left( \frac{1 \text{ day}}{24 \cdot 3600 \text{ s}} \right) \left( \overset{\text{P.F.}}{3.56} \right) + 55.9 \text{ ha} \left( \frac{.1 \text{ l}}{\text{s} \cdot \text{ha}} \right)$$

$$= 36.7 \text{ l/s.}$$

NCP South catchment = 7.2 l/s

$$Q_{\text{TOT}} = 36.7 + 7.2 = 43.9 \text{ l/s}$$

$$= 44 \text{ l/s.}$$



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Client CITY OF SURREY

Design Calculations

Project WEST NEWTON NCP

DATE 1995 07 07

BY

RF

JOB No.

1398-027-00-02

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APPENDIX 2 = PART-B  
REVIEW OF WATER DISTRIBUTION ADEQUACY

HAZEN WILLIAMS EQUATION:

$$V = 1.318 C R^{0.63} S^{0.54}$$

$$Q = 0.279 C D^{2.63} S^{0.54}$$

where  
V = velocity, fps  
R = hydraulic radius, ft  
Q = flow, mgd  
D = diameter, ft

from Surrey Design Criteria Manual:

C = 125 for 250mm diameter & larger  
100 for 200mm diameter & smaller

rewriting eqn:

$$S = \left[ \frac{Q}{0.279 C D^{2.63}} \right]^{(1/0.54)}$$

Design Flow:

Max. day + fireflow

$$Q = \frac{1000 L}{cap \cdot d} + F.F$$

Peak day

$$Q = \frac{2000 L}{cap \cdot d}$$



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Design Calculations

Project WEST NEWTON NCP

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For townhouse site:

Starting point = 300 mm dia. @ 64 Avenue and 126 St.

Available head:  $0.7 (135\text{m}) = 94.5\text{m}$

Required fireflow: (RM-15) 120 l/s

Length of run: 210 m of 200 mm dia. on 126 St. to 63 Ave.  
190 m of 200 mm dia. on 63 Ave. to T/H site  
TOTAL = 400 m

From NCP, total T/H pop. = 570 persons

Max. day + f.f.

$$Q = \left( \frac{1000 \text{ l}}{\text{cap. d}} \right) (570 \text{ per}) \left( \frac{1 \text{ day}}{24 \cdot 3600 \text{ s}} \right) + 120 \text{ l/s}$$
$$= 6.6 + 120$$
$$= 126.6 \text{ l/s}$$

Pk. hour

$$Q = \left( \frac{2000 \text{ l}}{\text{cap. d}} \right) (570 \text{ per.}) \left( \frac{1 \text{ day}}{24 \cdot 3600 \text{ s}} \right)$$
$$= 13.19 \text{ l/s}$$

∴ Max. day + f.f. governs

$$Q = \left( \frac{126.6 \text{ l}}{\text{s}} \right) \left( \frac{24 \cdot 3600 \text{ s}}{\text{day}} \right) \left( \frac{0.2641721 \text{ gal}}{1 \text{ l}} \right)$$
$$= 2.89 \text{ mgd}$$

$$S = \left[ \frac{2.89}{0.279 (100) (.656)^{2.63}} \right]^{(1/54)} = 0.117$$

Head loss over 400 m = 46.79 m

Δ Elevation = 1.8 m



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Design Calculations

Project WEST NEWTON NCP

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∴ Residual Pressure =  $94.5 - 46.79 - 1.8 = 45.9 \text{ m}$

∴ O.K.

Velocity check =

$$V = (1.318)(100) \left( \frac{.656}{4} \right)^{0.63} (0.117)^{0.54}$$

$$= 13.246 \text{ fps}$$

$$= 4.04 \text{ m/s} > 2 \text{ m/s max.}!$$

Therefore, if T/H parcels develop separately, a 300 mm  $\phi$  main is needed to meet velocity requirements. This occurs on:

126 Street from 64 Ave. to 63 Ave.

128 Street from 64 Ave. to 63 Ave.

For single family:

Starting point: 300 mm dia. @ 126 Street and 62 Avenue

Available head =  $0.7 (135 \text{ m}) = 94.5 \text{ m}$

Required fireflow: (RF) 60 L/s

Length of run: 220 m of 200 mm dia. on 62 Ave. to 127 St.  
 175 m of 200 mm dia. on 127 St. to 61A Ave.  
 110 m of 200 mm dia. on 61A Ave. to 127A St.  
 75 m of 200 mm dia. on 127A St. to cul-de-sac  
 TOTAL = 580 m

Max. day + ff.:

$$Q = \left( \frac{1000 \text{ l}}{\text{cap. d}} \right) (10 \text{ units}) \left( \frac{3.5 \text{ per}}{\text{unit}} \right) \left( \frac{1 \text{ day}}{24 \cdot 3600 \text{ s}} \right) + 60 \text{ l/s}$$

$$= 60.4 \text{ l/s}$$

∴ Max. day governs



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$$Q = \left( \frac{60.4 \text{ l}}{\text{s}} \right) \left( \frac{24 \cdot 3600 \text{ s}}{\text{day}} \right) \left( \frac{0.2641721 \text{ gal}}{\text{L}} \right)$$

$$= 1.38 \text{ mgd}$$

$$S = \left[ \frac{1.38}{(0.279)(100)(.656)^{2.63}} \right]^{(1/.54)}$$

$$= 0.0297$$

Headloss over 580m = 17.2m

Δ Elevation = 1.5m

∴ Residual Pressure = 94.5 - 17.2 - 1.5 = 75.7 m ∴ O.K.

Velocity check:  $V = (1.318)(100) \left( \frac{.656}{4} \right)^{0.63} (0.0297)^{0.54}$

$$= 6.31 \text{ fps}$$

$$= 1.92 \text{ m/s} \quad \therefore \text{O.K.}$$



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Design Calculations

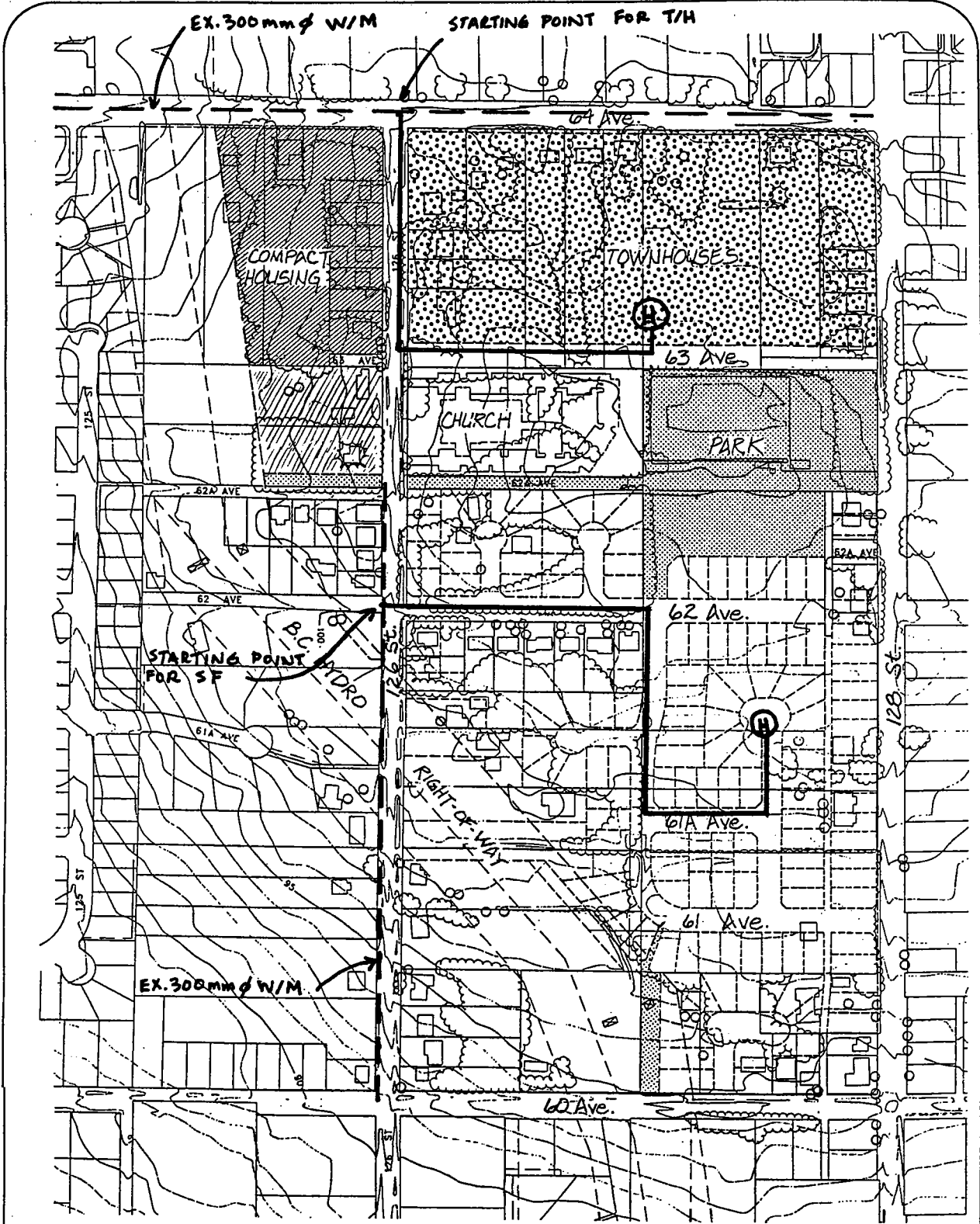
Project WEST NEWTON NCP

DATE 1995 03 22 BY RF

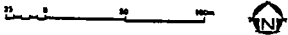
JOB No. 1398-027-00-02

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NEIGHBOURHOOD CONCEPT PLAN  
 West Newton, Neighbourhood 3  
 City of Surrey



**APPENDIX 3**

**Public Meeting Minutes**

## SECTOR 3 WEST NEWTON NEIGHBOURHOOD CONCEPT PLAN

### SUMMARY OF THE JULY 25<sup>TH</sup> PROJECT OPEN HOUSE

---

UMA Engineering Ltd. held a public open house from 7:30 to 9:30 p.m. on Monday, July 25, 1994 at the Newton Athletic Pavilion on 128th Street in Surrey. The purpose of the open house was to give property owners in the study area and other interested City of Surrey residents an opportunity to view and comment on the draft neighbourhood concept plans. Comments received from open house participants will be utilized in the development of the preferred concept plan. A second open house will be held in September to incorporate additional input to the neighbourhood concept plan.

The following is a summary of the open house.

#### **Promotion of the Open House**

An open house notification letter from Onkar Nijjar, Chairperson of the Project Steering Committee, was mailed July 13th to the 13 property owners signed in to the study and to two additional people in the neighbouring area who expressed interest in the project, Marie Cooper and Jeanne Eddington. In addition to the letters, an advertisement for the open house was placed in the Surrey Now paper on July 20th. Several general inquiries were received by UMA Engineering about the project and open house.

#### **Open House Participation**

Tom Becker, Radovan Putnik, Russ Tyson and Janice Howard of UMA Engineering were on hand to oversee the open house and answer participant questions. The Project Steering Committee Chairperson, Onkar Nijjar, other committee members, and David Tam from the City of Surrey Planning and Development Department also attended. Approximately 35 people attended the open house (see attached list), the majority being property owners in the study area.

#### **Input from Open House Participants**

Open house participants were provided with a summary handout outlining the project's planning principles and two concept plans. Comment forms were available for participants to record their questions and comments about the plans. In total, twenty forms were submitted, 75 % from property owners in the study area.

The majority of participants supported the project. Feedback on the comment forms indicated that:

- 10 (53%) of the participants preferred Option B, of which 8 (80%) of these votes were from property owners in the study area;
- 4 (21%) of the participants preferred Option A, with all of these votes from property owners in the study area;
- 5 (26%) of the participants did not choose either option, with 3 (60%) of these votes from property owners in the study area.

Comments submitted in writing by the open house participants included:

**OPTION A:**

- I dislike cluster housing south of 62A Avenue.
- Cluster housing as planned at 8 units per acre is a good option. Utmost consideration should be given to retaining existing trees wherever cluster housing is developed.
- The old houses are really an eyesore. They should come down.
- I support this option with the understanding that I receive 5 lots including my existing house (6122 126th Street). Lot No. 6242 126th Street should be changed from cluster to single-family housing.
- I support this option with the understanding that I receive 7 lots including my existing house (6136 126th Street). Lot No. 6242 126th Street should be changed from cluster to single-family housing.
- There is significant objection to the cluster housing proposals along 126th Street from people who live there now. You cannot just build around them and "landlock" the existing homes. This type of development will change the entire character of the area (i.e. the woodlands will be destroyed). You have to respect the opinions of these residents.
- Rather than surrounding single-family homes with cluster housing and townhouses, you should make the entire area single-family, with no higher density at all. This is a very old country style neighbourhood and should not be wiped out in the name of progress. Let the progress take place in areas where it does not interfere with the character of an existing neighbourhood.

**OPTION B:**

- This option offers a cleaner and tidier layout. The church and B.C. Hydro right-of-way will act as a buffer dividing the single-family homes from the multi-family units. Overall density is also reduced to provide a better environment and traffic flow.
- This option should be higher density because of all the lost land in the B.C. Hydro right-of-way. There will be so much green space available to the owners.
- This option allows maximum building lots which is important considering the rate of growth in Surrey.
- This option is preferable only if the cluster housing and townhouses are inevitable.
- The housing along 126 Street should all be low density - it is a quiet street with little traffic. Higher density housing (i.e. cluster, townhouses) should only be along major streets such as 128th Street and 64th Avenue.
- Should high density housing (i.e. cluster) be placed beside the B.C. Hydro right-of-way when these lines are a known health hazard?
- Where is the density dip?

**OTHER COMMENTS:**

Promotion of the Meeting - 2 people

- There was not enough notification about the meeting. All residents of the study area should be notified, regardless of whether they are contributing to the project. The newspaper ad is helpful, but not all people receive or read all of the Surrey Now paper.

- This appears to be a developer's plan rather than a neighbourhood plan. There is not enough input into the design options from people residing in the area and/or affected by the developments.

#### Schools - 3 people

- What estimates have been prepared for the number of school-age children that these options would contribute to the area? Where will the children go to school? The school at 62nd Avenue and 129th Street is currently full and JT Brown school cannot take them all.

#### Park Area - 2 people

- The so-called 3 ha of "park" is not acceptable - it is owned by the GVRD and is used for water treatment. This is not public open space and is totally misleading. Also, the B.C. Hydro right-of-way is privately owned and does not qualify as open space available to the public for use. Where is the park?
- Does the GVRD have control over the "park" area?

#### Church Property - 2 people

- The proposed church development is totally out of character with the area and is unacceptable. We do not need more paving and sterile architecture. It will also generate too much traffic on a peaceful residential street. There are already two churches within a few blocks. That is enough.
- The church should be placed on a busy street to provide a buffer for residential.

#### Traffic

- Both proposals will increase the area's population too much. Roads will not be able to cope with the extra traffic. 64th Avenue and Highway 10 are already very busy. An accident on either causes a flood of vehicles on 126th Street with horrendous slowdowns at school crossings.

#### Suburban Character

- The existing plan for this area is to be suburban - nothing smaller than 1/2 acre lots to preserve the character (semi-rural) and the extensively treed properties. Neither option pays more than lip service to community values.

#### List of Open House Participants

Tom and Marj Barry	591-2809	6131 128 St., Surrey
A. Y. Byrne	594-3318	6295 126 St., Surrey
Tejinder Cherve	591-1833	14714 84 Ave., Surrey
Marie Cooper	596-7673	5937 124A St., Surrey
D. Corrigan	596-3490	5957 126 St., Surrey V3X 1V9
Brad and Barb Dodd	591-5430	6327 126 St., Surrey V3X 1V1
Nirmal Dosanjh	596-4802	6122 126 St., Surrey
Jerry Folk	594-3240	6362 126 St., Surrey V3X 1T9
Narinder Gill	597-7399	6158 126 St., Surrey V3W 4A1
Ragbir Gurw	599-0689	12619 64 Ave., Surrey

Fred and Rita Hilton	596-5577	6245 126 St., Surrey
Gordon and Vera Lawrence	987-4085	1350 Lynn Valley Road, North Van. V7J 2A
Don McLachlan	585-2368	5927 124A St., Surrey V3X 1X4
Rob Mangat	591-1552	8533 116B St., North Delta V4L 7V1
Shangara Mangat	591-1552	6242 126 St., Surrey
Onkar Nijjar	278-6154	10226 Gilmore Cr., Richmond
Harriet Permut	590-1804	12349 59 Ave., Surrey V3X 1Y1
Erin and Irma Rosenow	591-3076	6231 126 St., Surrey
Neil Schneider	590-5994	6377 126 St., Surrey
Lorne Stapleton	522-4224	6193 126 St., Surrey V3X 1V7
M. Tang	572-7380	7161 121 St., Surrey V3W 1G8
David Tam	572-7380	City of Surrey, Planning and Development

Report Prepared By

**UMA ENGINEERING LTD.**

Janice Howard  
NCP Project, Consultation Facilitator

c.c. - Project Steering Committee Members  
- Consultant Team Members

## SECTOR 3 WEST NEWTON NEIGHBOURHOOD CONCEPT PLAN

### SUMMARY OF THE SEPTEMBER 28<sup>TH</sup> PROJECT OPEN HOUSE

---

UMA Engineering Ltd. held a second project open house from 7:30 to 9:00 p.m. on Wednesday, September 28, 1994 at the Newton Seniors Centre on 70th Avenue in Surrey. The purpose of the open house was to give property owners in the study area and other interested residents an opportunity to view and comment on the revised neighbourhood concept plan. Property owners in the study area also submitted agreement forms indicating whether they support the proposal (support from owners representing 70% of the land area, or 51% of the land owners is required to approve the NCP). Comments received from open house participants will be utilized to revise the concept plan before it is presented to City Staff and Council for final approval.

The following is a summary of the open house activities.

#### **Promotion of the Open House**

An open house notification letter from Onkar Nijjar, Chairperson of the project steering committee, was mailed to the 33 property owners who have paid into the study (directly or upfront by the City). In addition to the letters, a meeting notice card was distributed by Canada Post Admail to 820 homes in the study area, and an advertisement for the open house was placed in the Surrey Now paper on September 21st. Several general inquiries were received by UMA Engineering about the project and open house.

#### **Open House Participation**

Tom Becker, Radovan Putnik and Janice Howard of UMA Engineering were on hand to oversee the open house and answer participant questions. The project steering committee Chairperson, Onkar Nijjar, other committee members, and David Tam from the City of Surrey Planning and Development Department were also present. Approximately 70 people attended the open house, the majority being property owners in the study area.

#### **Open House Discussions**

Project Manger Tom Becker began the open house with a 30 minute overview of the NCP project, covering such topics as:

- City of Surrey requirements for a NCP; the purpose/functions of a NCP
- the process for preparing a NCP
- the objectives of the West Newton NCP
- the composition and role of the West Newton NCP project steering committee, explanation of owner contributions to the project
- land uses in the West Newton Local Area Plan that guide the content of the West Newton NCP
- proposed land use designation in the West Newton NCP and variances from the Local Area Plan
- two proposals to develop community facilities in the West Newton area - a private community hall in the northwest corner of the study area, and a public community facility in the separate NCP area just north of the study area
- potential use and activities in the designated park area

- types of housing to be developed - number of units per type, total units (existing and new), population projections
- Surrey School District plans for future school development in the Boundary Park area
- review of the concept map, including road patterns, open space walkways and stormwater retention ponds
- outline of estimated amenity cost contributions
- level of support required from property owners to approve the plan, requirement of property owners to complete the agreement form for the NCP at the end of the meeting

Following the project overview, Tom Becker answered questions from the audience.

Questions and responses included:

- Q - The high school on 66th Avenue is already overflowing and has many portables. Are any new high schools planned for the West Newton area?  
R - The School District has indicated through discussions for the Local Area Plan and this NCP that there will be adequate provision for schooling in the area.
- Q - You have followed City guidelines to limit excess entrances onto 128th Street, but 126th Street is also a through street that carries a lot of traffic when there is an accident on Highway 10.  
R - Our proposed road patterns reflect what is specified in the Local Area Plan. Any traffic concerns should be raised with the City of Surrey.
- Q - I own 5 acres of land in the area of the BC Hydro corridor and have concerns that the City will divide up this area for open space and leave me with a 25 foot lot.  
R - The long-term objective of the City is to have a green corridor under the Hydro line, but it cannot force owners to negotiate the sale of their land.
- Q - For the townhouse and cluster housing designations, will there be any restrictions enforcing owner occupation in order to avoid problems from rental units?  
R - We have no authority to deal with this issue in the NCP. If strata projects are developed, the strata councils can impose such limitations. The design guidelines in the NCP will specify some design controls (e.g., over single family homes, tree preservation) to help preserve the existing quality of the area.
- Q - How does the NCP address cases where one proposed lot involves two separate land owners?  
R - Many of the lotting and road patterns in the NCP require cooperation from adjacent land owners. This will be resolved during the subdivision approval process. The final NCP and lot yield will be dependent on whether the owners cooperate.
- Q - How and by whom were members of the steering committee selected?  
R - The City has established the selection process but gives property owners the responsibility to carry it out. Those area property owners funding this NCP project had the right to select the committee members. All members of the steering committee are property owners in the study area and are funding the project. Owners not required to pay into the project, or people who are not property owners or residents in the area may not have been consulted about the committee.



- Q - The proposed road along 62 Avenue will add considerable traffic to the area from cars accessing 128th and 126th Streets. Why would you want heavy traffic going by the park area and the single family homes? A better alternative might be to put the through road by the church along 62A or 63rd Avenue to disrupt fewer residences.
  - R - The 62nd Avenue road was proposed as a short, direct access link to the park and 126th/128th Streets. Few homes would front directly on this road. However, we will examine alternative routes based on your comments.
- Q - The concept map show sewer lines placed at the back of properties along 62nd and 62A Avenues. This will influence easement requirements and landscaping potential.
  - R - This is a good point and we will re-examine the location of these sewer lines.

During the question and answer period, a representative from McElhanney made a short presentation on the proposed private community hall on behalf of the proponents for the hall. Tom Becker had previously explained to the meeting participants that the City had sent letters to the NCP project steering committee concerning land use applications for the study area, specifically the private hall proposal. The steering committee had decided against the proposal due to:

- anticipated traffic and noise problems
- commercial areas being more appropriate for this type of facility and parking requirements versus impacting on a neighbouring residential areas
- land use specifications in the Local Area Plan and the impact of the hall development on the cluster housing designated for that area
- the proposal for a community facility in the area immediately north of the study area

The audience responded to the presentation on the private hall proposal with these comments:

- Residents west of the BC Hydro corridor are extremely concerned about the impact the hall parking would have on neighbouring homes (e.g., noise, danger to children).
- The parking lot entrance off of 64th Avenue would be on an incline, making it very dangerous.
- Traffic engineers can assess the impact of hall parking and traffic access onto 64th Avenue.
- If the initial application for this hall was submitted to the City two years ago, why wasn't the facility raised as an issue when the Local Area Plan was developed and land use was being determined? It is too late for the proposal to be brought forward now for inclusion in the NCP project.
- It is impossible to comment on the assembly hall proposal without seeing a plan or model for the building.
- I am in favour of a mix of community facilities in the area. Private facilities can be available for public use during hours not accommodated by public facilities. The hours of operation for private facilities can be controlled to address the needs of neighbouring residents.
- The West Newton NCP project steering committee has talked to residents in the area. We agree that we do not need another community hall in the study area given the traffic problems we already have.

- We should not spend our time at this meeting talking about this one issue. There are other land use issues that need to be discussed.
- Given that the steering committee members are land owners in the study area, they could have a vested interest in turning down the private hall proposal.
- There are differences between the two community facilities proposed. City Council can look at the private facility proposal further.

### **Written Input from Open House Participants**

Open house participants were provided with a summary handout outlining the project's purpose and highlights of the proposed concept plan. Comment forms were available for participants to record their questions and comments about the plans. Twenty-two forms were submitted (at the time that these minutes were prepared), 55% from property owners in the study area.

Feedback submitted in writing by the open house participants about the proposed NCP is outlined below, with the bracketed number indicating the number of people raising each comment.

#### **Proposed Land Uses**

Thirty-two percent of the comment forms submitted stated specific support for the proposed NCP. Other comments on land use included:

- Planning land uses for a large area rather than for separate parcels of land at a time is a good idea and should help develop a better community.
- I support the compact cluster housing proposed for the area west of 126th Street and south of 64th Avenue. (2 comments)
- I would like to see townhomes in the cluster housing area, as they would blend with the 64th Avenue East townhomes. (1 comment)

Four meeting participants stated their disapproval of the proposed NCP, explaining that neighbourhood residents do not want development in this area. Reasons cited included the excess people and traffic, higher density, and removal of trees that will result from the area's development.

#### **Roads/Traffic**

- The road adjoining 128th and 126th Streets should be along 63rd Avenue rather than 62nd Avenue, to take traffic past the church and tennis courts rather than past a playground and homes. (1 comment)
- Examine the potential of using 62A Avenue to connect 126th and 128th Streets, to avoid excess traffic 24 hours a day by residences. It runs by the church and behind the proposed cul-de-sacs. It would not be that difficult to run the road through the park. Other existing parks are divided by roads - examine these. (2 comments)
- The study area is located between two major roads - 64th Avenue and Highway 10. Both are very busy and it is extremely difficult to make a left turn onto them from 126th Street. As density increases and traffic grows on these roads, I question whether the area's other roads (e.g., 126th Street, 60th Avenue) will be able to handle the increased volume, and how the traffic will impact on area residents' quality of life. (2 comments)
- When there is an accident on Highway 10 the traffic is diverted onto 126th Street, causing a constant stream of traffic and extreme danger at the 60th Avenue/126th Street intersection. Many children attending J.T. Brown School are crossing here.

Even with normal traffic there have been several accidents here. Extra traffic on a regular basis cannot be accommodated. (1 comment)

### Open Space

- The West Newton Local Area Plan from 1985 recognized the BC Hydro right-of-way as a linear park. Why are detention ponds proposed for the right-of-way? (1 comment)
- Some information on what is going to happen to the BC Hydro right-of-way should be included in the NCP (i.e., used for greenways and park paths). (1 comment)

### Guidelines

- Design guidelines should be similar to the guidelines used in Boundary Park, an award winning development. Second suites should not be allowed. (1 comment)
- The number of proposed new single family homes is significant. Developments of this size adjacent to an established community should conform to the current community/area quality. Guidelines and restrictions should be developed regarding housing styles and size, yard size/percentage, trees, etc. (1 comment)
- Construction guidelines should include a time limit for completion (i.e., allow 8 months from excavation to completion for a single family house, after which the performance bond is lost). (1 comment)

### Amenity Cost Contributions

- The amenity cost estimates seem far too high. They should be carefully reviewed. (1 comment)
- There should be some contribution by developers for future schools. (1 comment)

### Public Input

- Asking people to indicate whether they live in the study area is irrelevant. All people's comments should be considered important to this planning exercise, no matter where the people live in West Newton. We will all face the impacts from the area's higher densities on traffic, crime, etc. (1 comment)

### The Proposed Private Meeting Hall

Fifty-nine percent of the comment sheets submitted provided additional written feedback on the private meeting hall, all indicating support of the steering committee's decision to turn down the proposal. Reasons for disapproval of the hall included:

- The proposed hall is incompatible with current development immediately west of the proposed site, in Boundary Park (e.g., noise from the parking lot, increased traffic). (4 comments)
- The proposed facility is incompatible with the proposed NCP and the designated cluster housing land use. (3 comments)
- The hall traffic will interfere with 64th Avenue traffic. (2 comments)
- Placement of a paved parking lot in the BC Hydro right-of-way conflicts with the development of a greenway and paths in this area. (2 comments)
- Community needs will be addressed by the public hall proposed for north of 64th Avenue. (2 comments)
- There is a lack of need/suitability for this type of facility in a residential area. (2 comments)
- The NCP alone will increase traffic and density, and any further changes to the plan which increase traffic should not be allowed. (1 comment)

### **Property Owner Support for the Plan**

At the end of the open house, property owners in the study area who are involved in the project (paid in directly or via the City's upfront funding) were asked to complete an agreement form to indicate their support or disagreement with the proposed concept plan. Thirteen forms were submitted by eligible property owners at the time that these minutes were prepared. A tabulation of all agreement forms received will be prepared separately from these minutes.

### **Closing Comments**

Tom Becker concluded the evening by thanking participants of the open house for their attendance and input; members of the Steering Committee for their hard work and dedication to the project on behalf of property owners in the area; and David Tam from the City of Surrey Planning and Development Department for his support and contributions throughout the project.

The next steps in the project and opportunities for further changes to the proposed NCP were also discussed. The Steering Committee will be meeting in early October to review and make any changes to the concept plan based on feedback received at the open house. A draft NCP report will then be submitted to City staff and Council, with all project minutes and comments from the open houses appended for review. The steering committee and UMA Engineering will make any final adjustments to the plan based on feedback from the City, and then submit the final West Newton NCP to Council for approval.

Report Prepared By

**UMA ENGINEERING LTD.**

Janice Howard  
NCP Project, Consultation Facilitator

c.c. - Project Steering Committee Members  
- Consultant Team Members

July 13, 1994

**Re: West Newton Neighbourhood Concept Plan  
July 25th Project Open House**

Dear Owner/Area Resident:

The City of Surrey is conducting a joint project with property owners in the West Newton area bordered by 60th and 64th Avenues and 126th and 128th Streets (see map on reverse) to prepare a conceptual plan for future development of the area.

This Neighbourhood Concept Plan (NCP) project was initiated in early May 1994. A Steering Committee with representatives of property owners from the project area has been established to oversee the project and the work of UMA Engineering Ltd., the firm hired to prepare the concept plan. The City of Surrey is managing the project process and providing planning input as required.

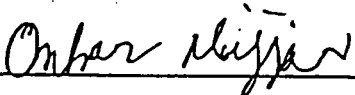
At this point in the project the Project Steering Committee has worked with UMA Engineering to complete an analysis of the project area and prepare preliminary development concept options. The next step in the process is to receive public input to the draft development concepts to ensure that the final Neighbourhood Concept Plan created will address the needs and interests of property owners in and around the project area.

A project open house is scheduled for **Monday, July 25 from 7:30 - 9:30 p.m.** in the meeting room of the Newton Athletic Park Complex, located on 128th Street at 74th Avenue. The draft development concept options will be on display for you to review and provide comments on. Project team members will also be available to answer any questions about the NCP initiative and the draft options.

Feedback received from open house participants will be used by the project planners to select and refine the preferred development concept option. A second project open house will then be held to receive additional feedback from the public on the refined concept before presenting the final Neighbourhood Concept Plan to City staff and council.

Public input is an essential part of this project. I hope that you will take the time to attend the upcoming open houses to share your feedback on the concept options and help the Project Steering Committee prepare an effective development concept plan for this neighbourhood. For further information on the project and open houses, or to forward other names of area residents to be informed of the events, please contact me at 278-6154 or on my pager at 735-1205.

Sincerely,



Onkar Nijjar  
Chairperson, NCP Project Steering Committee

## **PUBLIC OPEN HOUSE**

### **PROPOSED WEST NEWTON NEIGHBOURHOOD CONCEPT PLAN**

The consulting firm of UMA Engineering Ltd. is working with property owners in the West Newton area bordered by 60th and 64th Avenues and 126th and 128th Streets to prepare a conceptual plan for guiding future development.

The Project Steering Committee has worked with the consultants to prepare preliminary development concept options and is now seeking input to the options from area property owners and residents. A project open house is being held to give people an opportunity to review displays of the draft development options, ask questions of the project team, and provide feedback on the proposals. Final approval for the plan will also be required from the City of Surrey.

**Monday, July 25**

**7:30 - 9:30 p.m.**

**Newton Athletic Park Pavillion  
on 128th St. at 74th Ave., Surrey**

*For more information contact:*

**UMA Engineering Ltd.**  
Planning Department  
3030 Gilmore Diversion  
Burnaby, B.C. V5G 3B4  
438-5311



September 16, 1994

**Re: West Newton Neighbourhood Concept Plan  
September 28th Project Open House**

Dear Area Property Owner:

The Project Steering Committee and UMA Engineering have been refining a preferred development concept based on input received from property owners and area residents at the July project open house. They are now seeking your input to the revised concept plan through a second open house:

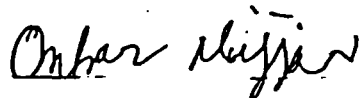
Wednesday, September 28  
7:30 - 9:00 p.m.  
Newton Seniors Centre - Auditorium  
13775 70th Avenue, Surrey

Project team members will be making a presentation on the plan; provide a colour area concept plan, drawings outlining proposed utility services, and data on the number of lots, housing units and density; and answering questions from you about the proposed plan. Property owners in the study area will be requested to indicate the extent of their agreement with the proposed plan through a written form.

Feedback received from open house participants will be used by the project planners to further refine the development concept before presenting the final Neighbourhood Concept Plan to City staff and Council for approval.

I hope that you will take the time to attend the upcoming open house to share your feedback on the concept and help the Project Steering Committee to prepare an effective development concept plan for this West Newton neighbourhood. For further information on the project and open house, please contact me at 278-6154 or on my page at 735-1205.

Sincerely,

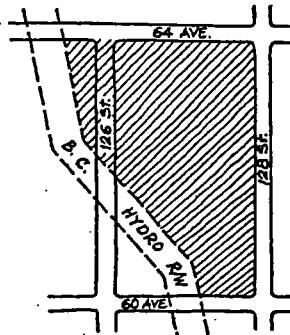


Onkar Nijjar  
Chairperson, NCP Project Steering Committee

# **PUBLIC OPEN HOUSE**

## **PROPOSED WEST NEWTON NEIGHBOURHOOD CONCEPT PLAN**

The consulting firm of UMA Engineering has been working with property owners in the West Newton area outlined below to provide a conceptual plan for guiding future development.



A project open house was held in July to receive public input to preliminary development concept options. The Project Steering Committee and consultants are now holding a second open house to give area property owners and residents an opportunity to review and comment on the refined option. The project team will be providing a presentation and displays on the proposed concept plan, answering questions from meeting participants and collecting written submissions on the proposal. Final approval for the plan will be required from the City of Surrey.

**Wednesday, September 28**  
**7:30 - 9:00 p.m.**  
**Newton Seniors Centre - Auditorium**  
**13775 70th Avenue, Surrey**



*For more information contact:*  
**UMA Engineering Ltd.**  
3030 Gilmore Diversion  
Burnaby, B.C. V5G 3B4  
438-5311



(card format)

MAIL DROP:

**NOTICE**

*To West Newton Area Residents*


*Re: Neighbourhood Concept Plan Project Open House*

You are invited to a public open house to view a proposed concept plan for future development in the West Newton neighbourhood bordered by 60th and 64th Avenues and 126th and 128th Streets (see the reverse for a study area map). The open house will be held:

**Wednesday, September 28, 1994 - 7:30 to 9:00 pm**  
**Newton Seniors Centre - Auditorium**  
**13775 70th Avenue, Surrey**

This Neighbourhood Concept Plan (NCP) project is a joint initiative with the City of Surrey and property owners in the study area. A Steering Committee with property owner representatives has been working with UMA Engineering to develop the NCP. Public involvement is an essential part of this project. A first project open house was held in July to receive public input to several preliminary design options. The project team has refined the preferred concept option and is now holding a second open house for area property owners and residents to review and comment on the revised proposal. Meeting participants will have the opportunity to hear a presentation and see displays on the concept plan, ask questions of the project team, and submit written comments. Feedback received will be used to further refine the NCP before presenting it to City staff and Council for final approval.

If you have any questions regarding the open house or would like additional project information, please contact UMA Engineering at 438-5311.

 <b>UMA Engineering Ltd.</b> Engineers & Planners  3030 Gilmore Diversion, Burnaby, B.C. V5G 3B4 Telephone: 438-5311 Fax: 438-5587	<b>REPORT OF MEETING</b>		
	City of Surrey West Newton NCP File No.: 1398-019-00-01 1.0		<i>Client file</i>
	MADE BY R.S. Fung, P.Eng.	DATE 1995 04 03	SHEET 1 of 3

*CORRECTED COPY*

**WEST NEWTON NCP  
PUBLIC MEETING NO. 3**

A public meeting was held at the Newton Library at 7:00 p.m. on Thursday, March 23, 1995.

**PURPOSE:** A meeting was held to present the refinements to the NCP since the last public meeting. Attendance was approximately 100 persons.  
 Note: (Notes updated to reflect remaining comment sheet responses and information.)

**DISCUSSION:**

**Item     Details**

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- 1.0     Open House
- 1.1     Tom Becker and Ray Fung were on hand from UMA to answer questions from the public. How Yin Leung represented the City's Planning Department, while Gary Vlieg, Surrey Engineering Department was also in attendance.
- 2.0     Formal Presentation
- 2.1     Tom Becker introduced the Steering Committee members. He then gave a brief summary of the NCP process to date and presented the latest revision to the concept plan. Various maps such as pedestrian circulation, bicycle, transit, and proposed zoning were explained.
- 2.2     The following questions were received during the presentation:
  - Will there be a traffic signal at 64 Avenue and 124 Street?
  - Will 62A Avenue remain as a road to the park?
  - What is the park proposal?
  - Explain the design guideline controls.
  - What is the typical compact housing lot size?
  - What is the difference between townhousing and compact housing?

Item	Details
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2.2	(continued)
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- When will the arterial upgrading of 64 Avenue occur?
- What is the size of home that can be constructed on a single family lot?
- How close can the compact housing come to the Hydro right-of-way?

Each question was answered by UMA staff, in the context of the proposed NCP.

3.0	<u>Rezoning Application Presentation</u>
-----	--

3.1	Brian Franklin of McElhanney gave a presentation regarding the current rezoning application for a private community hall at 12514 and 12534 64 Avenue on behalf of the owner. He explained that the application was a private proposal for a facility which would be used by various community groups. Social functions such as weddings or meetings could be held, and the interior can be partitioned according to space requirements. The total square footage of the two storey hall will be 11,000 ft <sup>2</sup> , and the facility will have a capacity of 350 persons. A daycare has also been proposed.
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3.2	The following questions/comments were received during the rezoning presentation:
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- With regard to access onto 64 Avenue, there is a concern about sight lines.
- How much parking can the development accommodate?
- Will access be restricted to right in and right out onto 64 Avenue?
- How does the parking location relate to 63 Avenue?
- Will people be able to access the parking lot from the Boundary Park walkway?
- Will hours of operation be restricted to control noise from ongoing functions?
- The daycare and community hall operations provide an economic use of the land.
- The playground facility should not be constructed under the Hydro right-of-way.
- The location of the proposed facility is not in keeping with the residential nature of the neighbourhood. Concerns include noise and traffic problems which were raised by a number of those present.

Mr. Franklin responded to the questions. He noted that the plans were preliminary and that changes could be made in response to the many public concerns. The majority of people who spoke at the meeting expressed concerns and opposition to the requested development and rezoning.

4.0	<u>Comment Sheets</u>
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4.1	A comment sheet/questionnaire was distributed to all of those present at the meeting. A tabulation of completed questionnaire responses is enclosed. (The tabulation reflects forms returned during the evening (42) as well as those returned to the City and UMA).
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**Item    Details**

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The public meeting on the West Newton Sector 3 NCP concluded at 9:00 p.m.

Minutes prepared by:

**UMA ENGINEERING LTD.**

Ray Fung, P.Eng.  
Project Engineer

RSF:kf

cc:     Tom Becker, MCIP, UMA  
       David Tam, MCIP, City of Surrey  
       Onkar Nijjar, West Newton NCP Sector 3 Steering Committee Members.

Attached: comment sheet tabulation

WEST NEWTON, SECTOR 3 NCP - MARCH 1995  
COMMENT SHEET - TABULATION

FINAL

The following results are based on 45 completed forms submitted by the end of the meeting, and to the City and UMA.

1. In general what is your opinion of this Neighbourhood Concept Plan?

Support 31      Opposed 6      Undecided 2      No Response 6

2. Do you consider the refinements of the Local Area Plan to be minor?

Yes 22      No 8      Undecided 9      No Response 6

3. The City has a rezoning application for a private community hall immediately east of the BC Hydro right of way, and south of 64th Avenue (12534 64th Ave.). Are you in favour of this land use proposal?

Yes 10      No 35      Undecided 0

Comments:

No response: 18

See attached list for summary of responses

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4. Please provide any further comments on the NCP as now proposed.

No response: 28

See attached list for summary of responses

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Please check below, the applicable response(s):

26 I am a resident of West Newton (15 of 26 ticked Resident and Owner)

28 I am an owner within the Neighbourhood 3 NCP area

(15 of 28 ticked Resident and Owner)

6 Other, please specify \_\_\_\_\_

### Question #3 Comments (summary)

#### Concerns:

- Noise/loud parties 9
- Increased traffic/congestion 6
- Health/safety of daycare/kids playing under power lines 3
- Devaluation of nearby property 2
- Pollution 2
- Vandalism 2
- Unattractiveness of parking lot 2
  
- Poor Location 5
  
- Good Use 4
  
- Hall ⇒ Liability which community will have to pay for 2
  
- Not conducive to Community Plan/Boundary Park Subdivision
  
- Hall should be tree-buffered to conform with surrounding area

### Question #4 Comments (summary)

- No tennis courts at water treatment plant 2
  
- Plan OK without Community Hall 2
  
- Plan is acceptable 3
  
- Housing too dense/preserve trees
  
- No megasize houses
  
- Disapprove of plan

*These following responses, though answered here, are more suitable to Question 3.*

- Hall will be financial liability to community
  
- Concerns of property devaluation
  
- Hall will be problem to community

# WEST NEWTON NEIGHBOURHOOD 3

Neighbourhood Concept Plan  
Storm Drainage

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## Stage Two - Report

February, 1996

Prepared for:  
Owners and  
City of Surrey

**uma**

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## 1.0 INTRODUCTION

The West Newton Neighbourhood Concept Plan Area (NCP), is situated south of 64 Avenue, and extends to 60 Avenue. It is bounded to the west by the B.C. Hydro right-of-way, and to the east by 128 Street (Figure 1).

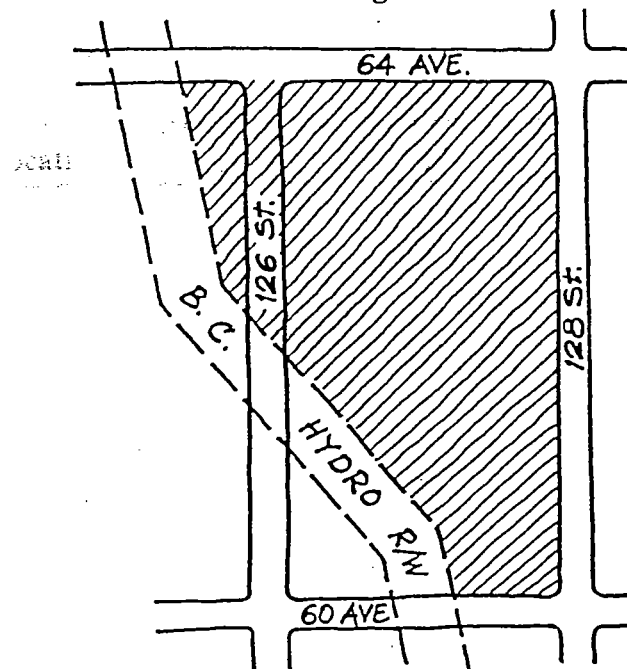
The total NCP area consists of approximately 34.8 hectares or about 86 acres. The study area comprises part of West Newton Neighbourhood #3 as identified in the local area plan for the Newton community.

The Neighbourhood Concept Plan (NCP) is intended to include sufficient detail and information to act as a guide for future subdivision and rezoning in the neighbourhood.

### 1.1 REPORT STAGES

This report has been issued in two stages. The Stage 1 Report deals with the planning concept, amenity contributions, and utility services such as sanitary sewer, water and roads. It also provides an overview of storm drainage. However, since additional work was required to examine and resolve storm drainage issues and costs, a decision was made to deal with this in a Stage 2 Report. This report therefore summarizes the storm drainage issues relevant to the West Newton NCP area, including the findings of the Eugene Creek Drainage Analysis (UMA, 1995) and the Boundary Park Trunk Storm Sewer Analysis (UMA, 1995).

**Figure 1**  
**West Newton Neighbourhood 3**



## **2.0 NCP CATCHMENT AREAS**

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Drainage catchment areas for the study area were delineated from contour plans obtained from the City of Surrey. West Newton Sector 3 drains in three directions, the catchment areas are identified on Figure 2. An overall plan showing the location of the NCP area within the context of the Boundary Park and Eugene Creek drainage systems is shown on Figure 3.

### **2.1 CATCHMENT AREA 1 (TRIBUTARY TO BOUNDARY PARK DETENTION POND)**

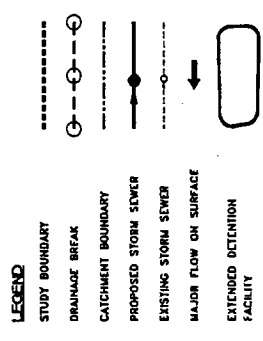
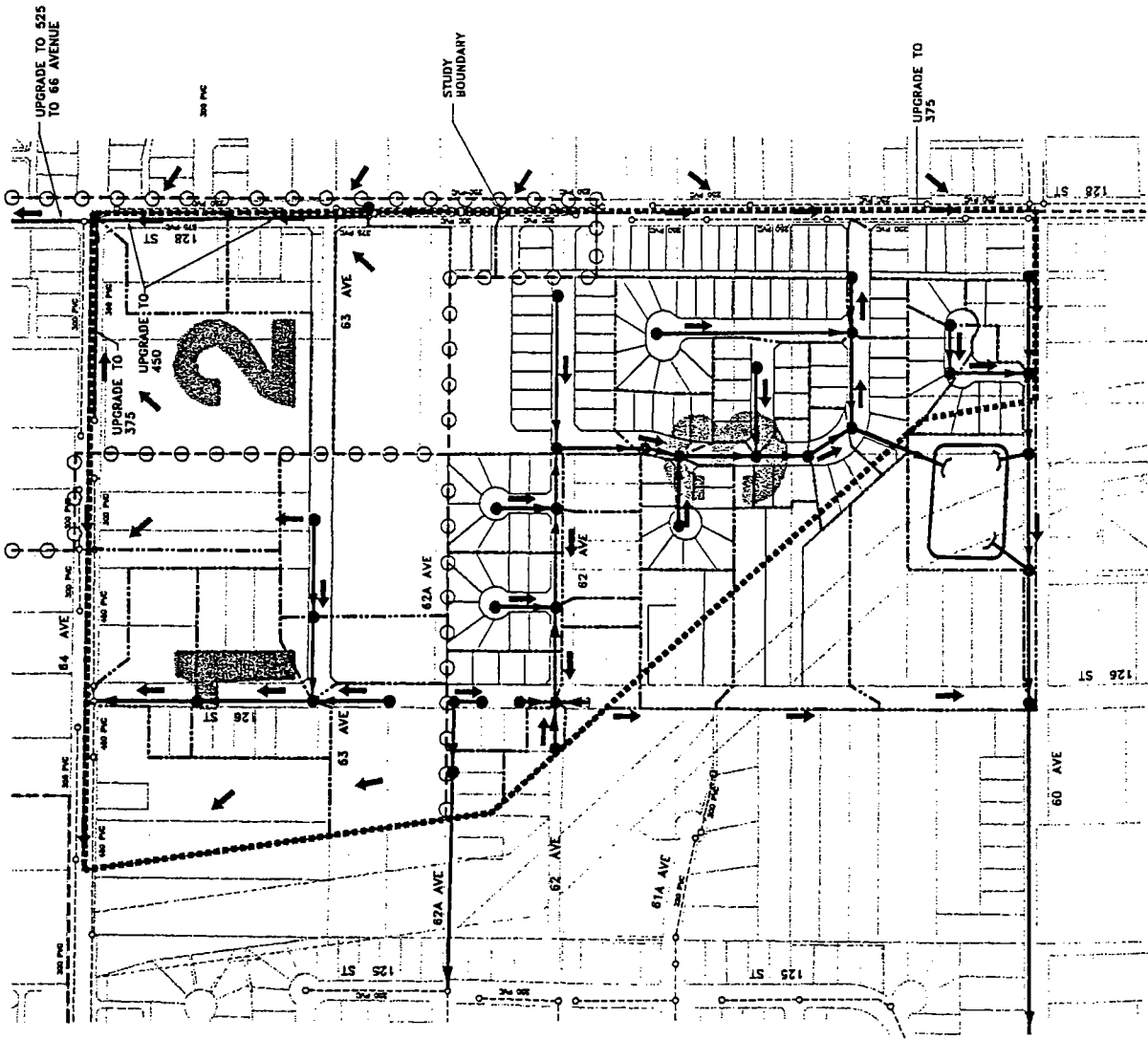
Catchment Area 1 being the northwest subcatchment is approximately 10.4 hectares in area and drains in a westerly direction along 64 Avenue to the Boundary Park Detention Pond. There is an area north of 64 Avenue outside of the NCP area which is also tributary to the Boundary Park Detention Pond. An expanded drainage study, the Boundary Park Trunk Storm Sewer Analysis was completed for catchment area 1. The land uses proposed within this catchment are mainly compact cluster housing and townhouses with a few single-family lots. The analysis was only conducted to the Boundary Park Detention Pond, since it effectively controls the runoff prior to discharging to the downstream receiving watercourse. The Boundary Park Trunk Storm Sewer report analyses in detail the impact of development of catchment area 1 on the storm sewer system and is summarized in Section 3.0.

### **2.2 CATCHMENT AREA 2 (TRIBUTARY TO COUGAR CREEK) WEST NEWTON SECTOR 2 PLAN**

Catchment Area 2, in the northeast quadrant of the NCP has an area of approximately 6.7 ha. It drains to the north in a storm sewer along 128 Street to West Newton Sector 2 and is designated for future multi-family townhouses. Catchment Area 2 drains almost entirely to Cougar Creek. Downstream drainage planning being conducted as part of West Newton Sector 2 (for areas tributary to Cougar Creek) will address the additional runoff being generated as part of development within Area 2.

### **2.3 CATCHMENT AREA 3 (TRIBUTARY TO EUGENE CREEK)**

The majority of the study area lies in Catchment Area 3, with an area of approximately 17.7 ha. Most of Area 3 drains in a southwesterly direction to Highway 10 along 60 Avenue and 126 Street. A small portion in the south east quadrant drains east to the 128 Street storm sewer system. Catchment Area 3 ultimately discharges into Eugene Creek. Single family lots are proposed within Catchment Area 3. Eugene Creek drains an area of approximately 137 ha. Thus the proposed development within Area 3 of West Newton NCP area, contributes runoff from 13% of the total catchment and will result in a flow increase proportional to the contributing area and the type of development. The following chapters summarize the drainage approach and the recommended improvements for each of the three subcatchments within the NCP.



**FIGURE 2**

**PROPOSED STORM DRAINAGE**

**NEIGHBOURHOOD CONCEPT PLAN**  
 West Newton, Neighbourhood 3  
 City of Surrey



### **3.0 CATCHMENT AREA 1 (Tributary to Boundary Park Detention Pond)**

At present, catchment Area 1 drains to a storm sewer on 64th Avenue. This storm sewer conveys the storm runoff west to approximately 121 Street. Storm pipes then convey the runoff through an existing subdivision, to the Boundary Drive West trunk storm sewer which discharges to the Boundary Park Detention Pond.

The drainage area tributary to the Boundary Park Detention Pond is approximately 120 hectares. The catchment is bounded to the north by 66 Avenue, to the south by Boundary drive south, to the east by 126 Street and to the west by Boundary Drive West. The storm water outlets from the pond to 120 Street and eventually flows to the lowlands and Mud Bay. The Boundary Park Detention Pond has sufficient capacity to contain the increased volume of runoff from the future development of Catchment Area 1, within the West Newton NCP area.

A comprehensive analysis of the storm sewer system from the detention pond back to catchment Area 1 was undertaken to ensure that the system has adequate capacity to convey future flows. The analysis was done first to evaluate the performance of the existing system and then to determine the impact of future development. The flow analysis was conducted with the OTTHYMO computer model and the pipe capacity and hydraulic gradeline (HGL) were computed with standard hydraulic equations.

It should be noted that the system was originally designed to surcharge during a 1:100 year return period storm. For this reason, the minimum basement elevations (MBEs) were set to be either at the ground level or 0.3 m above the computed 1:100 year hydraulic gradeline. Due to inherent differences in the analysis techniques and changes in the land use since the original analysis was conducted, it would not be expected that the hydraulic gradeline shown on the original design would exactly correspond with the currently computed hydraulic gradeline.

The current analysis was conducted assuming a 1995 land use condition along with flow contributions from the undeveloped areas. The resulting computed 100 year HGL was found to be slightly higher than that presented on the design drawings. The analysis found that sewer surcharging will occur from the detention pond to a location upstream of 63A Avenue. The level of surcharge was found to be 2 m above the pipe obvert in some reaches. In the vicinity of Boundary Park the surcharge reaches road level, which is consistent with the original design. One short reach was identified where under a severe storm condition there is the potential for two lots to be affected by backwater from sewer surcharge along Boundary Drive West in the vicinity of Boundary Grove and 63A Avenue.

For the future development scenario, it was assumed that the future land uses predicted in the NCP and the OCP would be fully realized. In order to permit this development to proceed, an upstream detention pond had been proposed within the NCP area.

For the purpose of establishing a worst case scenario, an analysis was conducted assuming that no detention was in place. It was found that during the 100 year storm, the extent of sewer system surcharging would increase and there is the potential that in the future 14 lots along Boundary Park Drive may be affected by the storm sewer surcharge. This is not acceptable under City policies, consequently alternatives to reduce the risk of this occurrence such as detention or up sizing, need to be examined. The Boundary Park Detention Pond was designed to accommodate the runoff from proposed upstream developments. An interim flow control setting may have been provided on the outlet control structure. When upstream development is completed the operations staff should verify that the pond outlet control structure is configured according to the original design.

### **3.1 GENERATION OF ALTERNATIVES**

To mitigate the impact of development and reduce the level of surcharging within the storm sewer, several alternatives were examined. Principal methods considered were: to control the upstream flow rates to acceptable levels through detention, and enlarging the capacity of the downstream trunk sewer. Alternative 1 involved detaining major system flows in a detention facility located within the B.C. Hydro Right-of-way. Alternative 2 examined twinning of the downstream trunk storm sewer. The analysis found that both alternatives could be effective.

Alternative 1, upstream detention has a slightly higher construction and land acquisition cost. In addition a surface drainage facility can have higher maintenance costs and potential liability. On the other hand the performance and reliability of this system would be satisfactory. Alternative 2 has a lower capital and maintenance cost and since the improvement is underground long term safety concerns are minimal. Alternative 2 was selected as the preferred Alternative.

### **3.2 PREFERRED ALTERNATIVE**

Under Alternative 2 the future development 100 year peak flow rates were routed through the storm sewer system to the Boundary Park Detention Pond. Storm sewer improvements required to reduce the 100 year hydraulic grade line below the minimum basement elevation were assessed. It was determined that twin 900 mm storm sewers will reduce the hydraulic grade line to acceptable levels. Approximately 120 metres of 900 mm storm sewer is required on Boundary Drive West between 6250 Boundary Drive West and a location upstream of the 63 Avenue and Boundary Drive intersection.

This option can be implemented by installing an additional 120 m of 900 mm parallel storm sewer on Boundary Park Drive West located between the existing 900 mm sewer and the existing water main. Critical to the success of this option will be the proper design and construction of the transition manholes. They must be designed and constructed in a manner which will minimize the head loss at these flow transition locations. Modifications to the Boundary Park Detention Pond are not recommended as sufficient volume exists within the pond to accommodate future development. This option will result in some temporary disruption on Boundary Park Drive in the local community during construction. However when completed the works will be completely underground.

## **4.0 CATCHMENT AREA 2 (Tributary to Cougar Creek)**

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This portion of the NCP study area currently drains north along 128th Street, and forms part of the Cougar Creek watershed. The 7.7 ha of Area 2 only represents 2% of the Cougar Creek watershed, consequently downstream drainage impacts from this area will be minor. Development in this area may proceed if:

- the IBI Study demonstrates that the existing capacity is adequate; or
- interim detention is provided to control flows; or
- the downstream improvements in West Newton, Sector 2 are completed. The downstream drainage improvements may include storm sewers upgrades and detention ponds and will be part of the drainage improvements being identified in the IBI study for West Newton North.

The current plan for Area 2 anticipates medium density residential development. To provide the required level of service will require new storm sewers in the site area and upgrades adjacent to the area. The anticipated upgrades are:

- a 375 mm storm sewer to replace the existing 300 mm diameter along 64th Avenue running west from the intersection with 128th Street,
- a 450 mm diameter storm sewer should be provided along 128th Street between 63A and 64th Avenue.
- a 525 mm diameter storm sewer should be provided along 128th Street from 64th Avenue to 66th Avenue.

These storm sewer improvements along 64th Avenue and 128th Street are not DCC elements and will be implemented by the local developers. The costs will be the responsibility of the developers and builders who are servicing Area 2.

It should be noted that at the design stage, different layout options within Area 2 may alter the location and extent of the storm sewer upgrades. For example, since 64 Avenue has now been paved a ROW for off-site servicing may be required to avoid disturbing the newly paved road.

The downstream improvements identified in the IBI report will be recommended to form part of the overall development cost charges for the municipality.

## **5.0 CATCHMENT AREA 3 (Tributary To Eugene Creek)**

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An expanded drainage study, the Eugene Creek Drainage Analysis, was completed to determine the most appropriate method for servicing Catchment Area 3. The Eugene Creek catchment encompasses an area of 137.4 ha. Approximately 52% of the area will be occupied by residential development and the remainder of the basin is wooded or open space. The catchment is roughly bounded by 64 Avenue to the north, 120 Street to the west, 128 Street to the east, and New McLellan Road to the south.

Under ultimate future land use conditions, uncontrolled peak flows for selected storm events are expected to increase by up to approximately 100% from the existing conditions for the major and minor storms. Due to the current creek bank conditions the future peak flows may increase bank failures and active erosion.

### **5.1 CREEK SENSITIVITY AND EROSION**

A stream assessment, conducted for Eugene creek found that the stream channel would be very sensitive to increases in flow. The sensitivity is due to the steep gradient of the creek combined with steep gully slopes rising directly from the channel banks. There is a concern that bank erosion will weaken the toe of slope and destabilize this area. Increased erosion would also lead to further deposition in lower sections of the creek where the gradient is flat which may cause increased flooding. Proper management of the additional runoff associated with development will minimize the erosive impact of flow and runoff volume increases in this erosion sensitive section of the creek.

### **5.2 DOWNSTREAM CONSIDERATIONS**

The outlet of Eugene Creek drains to a small ditch in the lowlands. The flow eventually reaches the Colebrook pump station from where it is pumped to Mud Bay. Several drainage improvements are required between the Eugene Creek outlet and the Colebrook pump station. These include:

- a new channel immediately downstream of the Eugene Creek outlet;
- cleaning of the existing ditch 500 m downstream of Eugene Creek; and,
- checking the Colebrook pump station capacity.

The results of the downstream drainage system analysis are summarized in the following paragraphs:



- 1) At present there is not a well defined channel downstream of Eugene Creek with the result that the runoff can enter the fields and discharge over land to ditches. This is disruptive to adjacent land uses. A new channel is required to convey the creek flow in a confined channel to an existing ditch (Figure 3). The new channel should be provided to improve fish passage and reduce flooding on the agricultural fields. The channel configuration should have a low flow component for frequent storm events and an overbank section for the 1:100 year return period flows. The low flow channel should be designed to maintain a minimum depth for fish passage and to also convey the two year return period flows. The total channel including the overbank, should have 1:100 year capacity of 4.5 m<sup>3</sup>/s for the initial section of the reach (approximately 200m) where the flows are above the lowland water levels. The total length of channelization has been estimated at 450m.
- 2) The existing ditch which conveys the Eugene Creek flows to the Colebrook pump station should be cleaned up to Colebrook Road to improve its flow conveyance capacity. On-site inspection is required prior to the works being conducted. In locations of bank erosion, stream bank vegetation and or rip rap stabilization should be provided. It is recommended that ongoing monitoring of the channel lining be conducted to minimize the potential for sediment production.
- 3) The Colebrook pump station serves to convey the water from the upstream ditches including the Eugene Creek runoff to Mud Bay. The City of Surrey engineering staff have informed us that the Colebrook pump station has adequate capacity to meet the ARDSA criteria and prevent excessive flooding in the lowlands.

### 5.3 GENERATION OF ALTERNATIVES

To mitigate the impacts of upstream urban development, four stormwater management alternatives were developed and evaluated:

- Alternative A - a proposed community detention pond close to the Eugene Creek ravine;
- Alternative B - a proposed community detention pond located part way into the catchment;
- Alternative C - a proposed community detention pond located under the B.C. Hydro right-of-way just outside of the NCP area; and
- Alternative D - a proposed trunk storm sewer bypass to divert large flows from discharging into Eugene Creek and an extended detention facility to provide water quality enhancement.

Alternatives A and B require a community pond, these alternatives are subject to a public consultation process and property acquisition. Since the properties are currently privately owned and there are not plans to redevelop land near the creek it will be extremely difficult to obtain property for an extended detention facility. In addition the most acceptable location from a construction perspective is no longer appropriate due to its proximity to the J.T. Brown School. Alternative C was determined to be ineffective in terms of controlling peak flows and erosion in the creek. Alternative D was selected as the preferred Alternative.

#### **5.4 PREFERRED ALTERNATIVE**

The recommended alternative was developed to minimize the impact on the Eugene Creek by minimizing the existing flow pattern to the greatest extent possible, but diverting large flows around the Eugene Creek ravine. The alternative involves directing high flows through a trunk storm sewer along New McLellan Road, 121A Street, and Hillside Road to an existing gravel road, then exiting to the lowlands at the bottom of the ravine. By following existing road alignments impacts on Eugene Creek ravine slopes will be minimized. Baseflows would be maintained in Eugene Creek by a proposed control structure at 123A Street and New McLellan Road. Diversion of large flows into the trunk sewer would mitigate peak flow and increased runoff volume concerns.

Alternative D allows the excess runoff volume from the developed area under future land use scenarios to bypass the erosion sensitive reaches of Eugene Creek. Water quality measures to be incorporated with alternative D such as an extended detention facility or grassed swales and filter strips could be located in the Hydro R.O.W, close to 60 Avenue. This is required to address MOE concerns regarding baseflow and water quality improvement.

In addition to the proposed mitigation measures for Alternative D, it is recommended that existing erosion sites be monitored by the City of Surrey for erosion control and slope stability.

#### **5.5 MOELP CONSIDERATIONS**

A review of the fishery issues was conducted by Envirowest Consultants and discussed with personnel from Ministry of Environment, Lands and Parks. To maintain the natural integrity of the watercourse it was agreed that the most acceptable alternative is to provide a diversion structure to maintain a base flow to the watercourse, but divert large flows. As well a water quality/sediment trap should be incorporated at the outlet as part of the alternative. The trunk sewer diversion alternative is acceptable, as long as a suitable baseflow is maintained and there is provision for water quality BMPs. This will be achieved by contributing an extended detention facility in the Hydro ROW.

## 5.6 SUMMARY OF FINDINGS

In summary the findings of the analysis of the Eugene Creek drainage system are:

- ultimate future urbanization will result in peak flows in the catchment increasing by up to 103% for selected storms from the existing conditions,
- from 121 A Street to the 123 Street outfall, Eugene Creek is rated as extremely sensitive to stream bank erosion from fluctuations in streamflow,
- Fluctuations in streamflow rates, volumes, and runoff frequency will increase the potential for streambank erosion in this area,
- it is recommended that regular monitoring of Eugene Creek (once every two years) be conducted by the City of Surrey. With video documentation, changes to the creek bed and banks could be documented and selected sites which may require small channel improvements could be identified. The monitoring should be conducted by a field hydrologist and geotechnical engineer. A summary report containing photos and a video should be prepared to identify areas of increased erosion or decreased slope stability.

## 6.0 FINANCIAL CONSIDERATIONS

The three storm drainage catchments within the NCP have different servicing requirements and costs. Prior to servicing Area 1 the downstream storm sewer will need to be upgraded in selected reaches. For Area 2 local storm sewer improvements adjacent to the development area and interim detention may be required if the improvements in the IBI report are not in place. Area 3 which is tributary to Eugene Creek will require more extensive downstream trunk drainage system improvements, but there may be opportunities for interim works. The required works, cost and the proposed method of financing for each area are discussed in the following sections.

### 6.1 DRAINAGE SYSTEM IMPROVEMENTS

#### 6.1.1 Area 1 (Tributary to Boundary Park Detention Pond)

Future development, south of 64 Avenue, in the West Newton NCP Catchment Area 1 comprises approximately 3.9 hectares of townhouse development and 2.8 hectares of compact housing. To service the additional runoff from this higher density development the off-site drainage improvements have been estimated to cost \$130,000 (Table 6.1). They consist of improving a trunk storm sewer along Boundary Park Drive West. The cost of this drainage improvement is to be included in the City's new development cost charge bylaw. Consequently when the bylaw is in place, DCC's paid by developer(s)/builder(s) in Area 1 will contribute to the financing of the storm sewer upgrade.

**Table 6.1**  
**Area 1 Drainage Improvements**

Item	Location	Description	Estimated Cost
1.0	Boundary Park Drive West	Parallel trunk storm sewer 120 m 900 mm	\$130,000

#### 6.1.2 Area 2 (Tributary To Cougar Creek)

The downstream drainage system improvements will be identified as part of the West Newton Sector 2 plan, being conducted by IBI. The cost for these improvements may be incorporated into the new DCC bylaw. Development in Area 2 will be subject to the requirements of the IBI report once it is accepted by council. Storm sewer upgrades required in the vicinity of the NCP area along 64 Avenue and 128 Street will be paid for by the developers/builders within Area 2 (i.e. non DCC elements).

### 6.1.3 Area 3 (Tributary to Eugene Creek)

Area 3 in the NCP is located in the upper reaches of Eugene Creek. Improvements are required to the trunk storm sewer system as well as to the watercourse, prior to development proceeding.

The improvements are identified on Table 6.2.

**Table 6.2  
Works Required to Service West Newton NCP Area 3**

Item	Location	Description of Proposed New Works	Cost Estimate	Description of Works in Current Ten Year Servicing Plan	Existing DCC Reference Number
1	60 Ave: 124A St - 127 St	New Trunk	\$ 260,000	60 Ave (124A St. - 127 St.) \$200,000	3208
2	124A St: 60 Ave - 58 Ave	Upgrade	\$ 200,000	124A St. (60 Ave - 58 Ave.) \$200,000	3144
3	Hwy 10: 125 St - 124A St	New Trunk	\$ 75,000		
4	Hydro R.O.W.	Water Quality BMP Facility	\$ 255,000		
5	New McLellan Rd/Hillside Drive	New Trunk/ Outlet Sediment Control	\$ 790,000	Proposed Park Storage \$390,000 Erosion Protection 122 St. (52 - 55 Ave) \$350,000	3093 4063
6	Eugene Creek Outlet	Channel Improvements	\$ 285,000		
7	Downstream of Eugene Ck.	Ditch Cleaning	\$ 115,000		
8	Eugene Creek (may be required if interm detention provided)	Instream Erosion Works	\$ 245,000		
9	Eugene Creek	Erosion Monitoring	\$ 50,000		
Total			\$2,275,000	\$1,140,000	

Drainage improvement works similar to those in Table 6.2 have been identified in Surrey's current Ten Year Servicing Plan, June 1993. These drainage improvements could be implemented within the existing DCC framework. A number of the improvements are not covered by the current servicing plan but may be included in an updated plan and DCC bylaw to be completed in 1996. Consequently new works not identified in the current ten year servicing plan would not be implemented by the municipality until the new drainage DCC's are in place. Should developers wish to proceed with development prior to implementation of the new DCC's they could pay for the additional improvements with no rebate.

## 6.2 COST RECOVERY

If at the time of development, the facilities substituted from the current ten year plan have not been constructed, the developer may construct the works and receive a DCC rebate to the maximum value of the charge paid by the developer (Table 6.2 items 1, 2 and parts of items 1 and 5). It should also be noted that the cost of works may exceed the DCC rebate. The current drainage and stormwater detention DCCs for the proposed zoning designations in the study area are summarized in Table 6.3 (DCC Bylaw # 12618, May 30, 1995). The drainage and stormwater detention DCC's are currently being updated. The current DCC's do not account for items 3, 4, 6, 7, 8, 9, and portions of items 1 and 5. The DCC's will likely be higher when the new DCC bylaw is issued in 1996.

**Table 6.3**  
**Current Drainage and Stormwater Detention DCCs**

<b>Zoning Designation</b>	<b>Drainage and Stormwater Detention DCC</b>
R-F	\$2,120 per lot
P-A	\$830 / 1,000 sq. ft. building
RM-10	\$1,140 / dwelling unit
RM-15	\$1,140 / dwelling unit

## 6.3 PHASING CONSIDERATIONS

The current City of Surrey 10 Year Servicing Plan, identifies several growth related drainage projects which are relevant to the study area (Table B.1, Appendix B). The total estimated cost of these growth related works is \$1.14 million. The total cost to provide the external servicing for Areas 1 and 3 has been estimated at \$2.27 million, thus when compared with the existing DCC structure a shortfall of \$1.13 million is anticipated.

In summary, there are two cash flow issues that have to be addressed:

- 1) The City currently does not have sufficient funds to immediately upfront cost of the growth related items in the Current Servicing plan due to a short term cash deficiency in the DCC fund.
- 2) The new drainage items that have been identified as part of the servicing studies will require a greater capital expenditure than was anticipated in the Current Ten Year Servicing Plan, with the result that there will be a long term cash shortfall. A new DCC structure currently being worked on by the municipality will address this issue. However it will take some time to implement and collect the funds.

With these constraints several options are available :

- 1) providing interim detention along with selected downstream improvements, which would be paid for by the developers.
- 2) initial developers constructing all of the recommended works for the final drainage plan. Development could proceed relatively quickly but would involve significant upfront costs to the developers.
- 3) waiting for the new DCC structure to be implemented and sufficient funds to be collected to permit the downstream improvements to be constructed by the municipality.

More detailed consideration was given to the phasing of development first within the current DCC structure and then with the updated DCC structure. The approaches for servicing the three drainage areas for these two stages of funding are discussed below.

### **6.3.1 Stage 1 : Immediate Servicing Options**

The options available to developers, with the current Ten Year Servicing Plan and DCC Bylaw are discussed for each of the drainage areas.

#### **Drainage Area 1**

The options for proceeding with servicing Area 1 are:

- initial developer(s) pay for the downstream improvements without receiving any rebate for the improvements,
- provide interim detention, paid for by the developers, so that the 100 year flows do not exceed the capacity of the downstream storm system

#### **Drainage Area 2**

For development to proceed in drainage Area 2 interim detention could be applied until the downstream works are completed to address the problems identified in the West Newton Sector 2 report (IBI Study).

Non trunk storm sewer elements on 64 Ave and 128 St. will be paid by developers as part of individual application requirements.

### Drainage Area 3

For development to proceed in drainage Area 3 :

- interim detention should be provided for an area of new development up to approximately 25ha within the Eugene Creek Catchment. The unit release rate from the interim detention facility should not exceed 5 l/s/ha.

- For NCP area 3 the detention facility will have to be a permanent feature. Initially it would serve to control the rate of discharge and provide sediment control. In the longer term it would also function to improve the water quality and prolong the duration of runoff so that baseflow would be enhanced. The facility is proposed to be located within the existing Hydro corridor on a ROW granted to the City. It is proposed that the extended detention facility have:

- average 3:1 side slopes;
- an active storage zone of 2000 m<sup>3</sup>;
- a shallow permanent pool which will be surrounded with and contain water tolerant plant species;
- an outlet control structure to provide a maximum release rate of 5 L/s/ha.

- the existing ditches do not have sufficient depth to service Area 3. Consequently trunk storms will have to be installed along 60 Ave. and possibly 124A St. prior to onsite development proceeding. It may be possible to stage the installation of the trunk. However, the design details related to staging, trunk sewer depth and capacity of the downstream ditches will be addressed when development applications are made. These trunk sewers can outlet to the existing ditch on the north side of Hwy 10. These trunk sewer elements (items 1 and 2) could be paid for by the developers and they would receive a DCC rebate up to the amount paid by the developer but not exceeding the cost of construction.

- when the peak flow at 60 Avenue and 124A St. exceeds 0.24 m<sup>3</sup>/s the ultimate plan must be implemented. With the current DCC Bylaw most of item 5 (Table 6.2) is covered and could either be constructed by the City or the developer(s) who could then receive a rebate up to the cost of construction. The additional improvements (items 3, 4, 6,7,8,9 and small portions of 1 and 5) are not within the current DCC Bylaw and would have to be paid for by the developers without receiving any compensation.



### 6.3.2 Stage 2: Servicing Options with the Updated DCCs

The options for storm servicing if the new storm drainage elements are added to the DCC program are summarized below for each of the development areas.

#### Drainage Area 1

The options in drainage area 1 are:

- for the developers to construct the required downstream improvements. A rebate from the DCC fund would be provided for the works on Boundary Drive up to the amount of DCC paid by the developer but not to exceed the cost of the works.
- to provide interim detention to mitigate 100 year peak flow impacts. The storage could be located in the Hydro R.O.W. as discussed in the Boundary Park Trunk Storm Sewer Study.
- for the developers to wait for the City of Surrey to proceed with design and construction of the Boundary Drive West upgrades when sufficient DCC money has been collected.

#### Drainage Area 2

The Area 2 phasing considerations are the same as for those that proceed within Stage 1. Interim detention could be provided until the downstream works are completed to address problems identified in the IBI study is approved. Some of the downstream works may be identified as part of the updated DCC program. However for downstream works not in the updated DCC program the local developers may have to provide a cash contribution. The value of the cash contribution is not known at this time.

Non storm trunk sewer elements on 64 Ave. and 128 St. will be paid by developers in Area 2, as part of individual application requirements.

#### Drainage Area 3

When the updated DCCs are in place the options available to the developers are to proceed with interim improvements or to wait for the City to provide all of the recommended upgrades.

Proceeding with interim upgrades will require:

- interim detention for up to 25 ha in the Eugene Ck catchment with the flow being controlled to a rate that does not exceed 5 l/s/ha.

- For NCP area 3 the extended detention facility will have to be a permanent feature. Initially it would serve to control the rate of discharge and provide sediment control. In the longer term it would also function to improve the water quality and prolong the duration of runoff so that baseflow would be enhanced. The facility is proposed to be located within the existing Hydro corridor on a ROW granted to the City. It is proposed that the extended detention facility have:

- average 3:1 side slopes;
- an active storage zone of 2000 m<sup>3</sup>;
- a shallow permanent pool which will be surrounded with and contain water tolerant plant species;
- an outlet control structure to provide a maximum release rate of 5 L/s/ha.

- the existing ditches along 60 Ave do not have sufficient depth to service Area 3. Consequently trunk storms will have to be installed along 60 Ave. and possibly 124A St. prior to onsite development proceeding. It may be possible to stage the installation of the trunk. However, the design details related to staging, trunk sewer depth and capacity of the ditches will be addressed when development applications are made. These proposed trunk sewers can outlet to the existing ditch on the north side of Hwy 10. The funding is as discussed in Stage 1 with either the works being constructed by Surrey or the developers receiving a DCC rebate not to exceed the cost of the works.

- when the peak flow at 60 Avenue and 124A St. exceeds 0.24 m<sup>3</sup>/s the ultimate plan must be implemented.

The ultimate plan will require the construction of items 5,6,7 (Table 6.2). Items 8 and 9 may only be required if the interim detention has not been effective. For erosion monitoring (item 9) it is recommended that a field hydrologist and geotechnical engineer walk the creek approximately once every two years. The inspection should be conducted with a video camera and photos so that any changes to the watercourse condition are documented. After each inspection a report should be prepared documenting the streambank condition and any slope instability issues. If changes in the slope stability or stream bank condition are observed from one inspection to the next then measures to prevent further deterioration should be recommended and implemented. If the updated DCC bylaw is in place, the options available to the developers are to wait for the City to construct the works or to construct the required works and receive a rebate not to exceed the cost of constructing these works.

## 7.0 CONCLUSIONS

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Catchment Area 1 will require a storm sewer trunk upgrade at a total cost of approximately \$130,000, which is not included in the current 10 Year Capital Plan (June, 1993). The storm trunk upgrade is site specific to Catchment Area 1, and a small area north of 64 Avenue. The cost of these improvements should be incorporated in the New Storm Drainage DCC's. Development in Area 1 should not proceed until the trunk sewer upgrade has been completed or upstream interm detention is provided.

Catchment Area 2 will require some minor storm sewer upgrades. These improvements are not considered downstream trunk improvements. The cost of these upgrades will be paid for by the developer through subdivision agreement. Further costs or drainage improvements in the Cougar Creek basin will be identified in the IBI study for West Newton North. If development is to proceed prior to the IBI study recommendations being implemented, interim detention will be required.

In Catchment Area 3 a portion of the costs were identified in the existing 10 Year Capital Plan. They were:

- a new trunk along 60 Avenue between 124A Street and 127 Street at an estimated cost of \$260,000 (this partially substitutes Ref. 3208, Table B.1),
- an upgraded trunk along 124A Street between 60 Avenue and 58 Avenue at a cost of \$200,000 (this substitutes Ref 3144, Table B.1),
- Erosion protection of tributary to Mud Bay (\$350,000 Ref. 4063, Table B.1) (to be replaced).
- Proposed park storage \$390,000 (Ref. 3093, Table B.1) (to be replaced).

New works identified in the course of this investigation involve:

- A new trunk along Highway 10 between 124A Street and 124 Street (\$75,000).
- An extended detention facility in the Hydro corridor (\$255,000)
- A slightly longer trunk sewer on 60 Avenue (item 1), which requires an additional \$60,000,
- A new trunk sewer on New McLellan Road/Hillside Drive at an estimated cost of \$790,000 (item 5),
- An upgraded ditch from the Eugene Creek outlet to a location 450 m downstream at a cost of \$285,000 (item 6),

- Instream erosion works may be required in conjunction with interim detention at an estimated cost of \$245,000. They may not need to be installed if item 5 is constructed before the erosion monitoring (item 9) shows that there is a problem.
- Ditch cleaning at an estimated cost of \$115,000.
- Ongoing erosion monitoring, approximately once every two years (\$50,000).

These new improvements are to be included in the New 10 Year Servicing Plan which will be used to calculate the New Storm Drainage DCC's.

Since the proposed new works will require more cash than is being collected under the current DCC program, either development will have to wait until the new DCC's are in place and the works initiated by the municipality or the initial developer(s) will have to pay for the additional improvements (i.e. interim detention or recommended upgrade) at their expense.

**APPENDIX A**  
**COST ESTIMATES**

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**West Newton South NCP  
Downstream Drainage Improvements for Area 1  
Boundary Park Drive West - Twin Trunk Storm Sewer**

ITEM	UNITS	QUANTITY	UNIT PRICE	TOTAL
saw cut remove existing asphalt	ls	ls	\$ 1,000	\$ 1,000
900 mm C14 c/w bedding	m	100	\$ 480	\$ 48,000
reinstate asphalt	ls	ls	\$ 2,000	\$ 2,000
3.0 x 2.4 precast manhole	ea	1	\$10,000	\$ 10,000
Transition manhole	ea	2	\$15,000	\$ 30,000
Sub-total				\$ 91,000
Contingency (40%)				\$ 36,400
<b>TOTAL</b>				<b>\$127,400</b>

Rounded Cost Estimate

\$130,000

**West Newton NCP  
Downstream Drainage Improvements For Area 3**

1)	Trunk Storm Sewer 60 Ave.: 124A St - 127 St		
	600 m of 450 mm dia.	600 m x \$280 m =	\$168,000
	1050 mm dia. MH	7 MHx \$2500/MH =	<u>\$ 17,500</u>
	Subtotal		\$185,500
	Contingency 40%		\$ 74,200
	Total		<u>\$259,700</u>
	<b>Rounded Cost Estimate</b>		<b>\$260,000</b>

2)	Trunk Storm Sewer 124A St: 60 Ave - 58 Ave		
	410 m of 525 mm dia.	410 m x \$330 m =	\$135,300
	1050 mm dia. MH	3 MH x \$2500/MH =	<u>\$ 7,500</u>
	Subtotal		\$142,800
	Contingency 40%		\$ 57,120
	Total		<u>\$199,920</u>
	<b>Rounded Cost Estimate</b>		<b>\$200,000</b>

3)	Trunk Sewer Hwy 10: 14A St - 124 St		
	205 m of 750 mm dia.	110 m x \$380 m =	\$ 41,800
	1500 mm dia. MH	3 MH x \$3000/MH =	<u>\$ 9,000</u>
	Subtotal		\$ 50,800
	Contingency 40%		<u>\$ 20,320</u>
	Total		<u>\$ 71,120</u>
	<b>Rounded Cost Estimate</b>		<b>\$ 75,000</b>
4)	Water Quality BMP Facility		
	Land Cost (Hydro ROW)	.54 ha X \$150,000/ha =	\$ 81,000
	Construction	2,000 m <sup>3</sup> x \$50/m <sup>3</sup> =	<u>\$100,000</u>
	Subtotal		\$181,000
	Contingency (40%)		<u>\$ 72,400</u>
	Total		<u>\$253,400</u>
	<b>Rounded Cost Estimate</b>		<b>\$255,000</b>
5)	Trunk Diversion New McLellan Rd/Hillside Dr		
	590 m of 900 mm dia. Storm	590 m x \$600 m =	\$354,000
	1500 mm dia. MH Base and Cover	9 MH x \$3000/MH =	\$ 27,000
	1500 mm MH Riser	35 vm x \$500/vm =	\$ 17,000
	900 mm dia. Drop Section	12.5 vm x \$1800/vm =	\$ 22,500
	900 mm Outfall Structure	1 L.S. =	\$ 10,000
	Conc. Diversion Structure (cast-in-place)	1 L.S. =	\$ 30,000
	Energy Dissipator/Sediment Control	1 L.S. =	<u>\$100,000</u>
	Subtotal		\$561,000
	Contingency 40%		\$224,400
	Total		<u>\$785,400</u>
	<b>Rounded Cost Estimate</b>		<b>\$790,000</b>
6)	Eugene Creek Outlet Improved Ditching		
	Land (15 x 450 = 6750 m <sup>2</sup> ) .675 ha	.675 ha x \$100,000/ ha =	\$ 67,500
	Ditch Construction	450 m x \$300/m =	<u>\$135,000</u>
	Subtotal		\$202,500
	Contingency 40%		\$ 81,000
	Total		<u>\$283,500</u>
	<b>Rounded Cost Estimate</b>		<b>\$285,000</b>
7)	Ditch Cleaning in Lowlands		
	Ditch Cleaning	400 m x \$200/m =	<u>\$ 80,000</u>
	Subtotal		\$ 80,000
	Contingency 40%		\$ 32,000
	Total		<u>\$112,000</u>
	<b>Rounded Cost Estimate</b>		<b>\$115,000</b>

8)	Instream Erosion Works		
	Channel Protection/Slope Stabilization	L.S. =	<u>\$175,000</u>
	Subtotal		\$175,000
	Contingency 40%		\$ 70,000
	<b>Total</b>		<b><u>\$245,000</u></b>
9)	Erosion Monitoring Eugene Creek		
	Monitoring (10 years once every 2 years)	5 x \$10,000 =	<u>\$ 50,000</u>
	<b>Total</b>		<b><u>\$ 50,000</u></b>



**APPENDIX B**  
**10 YEAR SERVICING PLAN**

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**Table B.1**  
**Summary of Drainage Projects in Current 10 Year Servicing Plan**  
**Relevant to the Study**

<b>Ref#</b>	<b>Location</b>	<b>Description</b>	<b>Estimated Cost</b>	<b>Start Before (Year)</b>	<b>Included in DCC?</b>
3093	125 St./59 Ave.	Storage within proposed park	#390,000	1997	Yes
3144	124A St./ 58 - 60 Ave.	Trunk Upgrade	\$200,000	1997	Yes
3208	60 Ave./124A - 126 St	New Sewer	\$200,000	1997	Yes
4063	122 St./52 - 55 Ave	Erosion protection of tributary to Mud Bay	\$350,000	1997	Yes

Total Cost for Area 3 Improvements (Existing Servicing Plan)      \$1,140,000

Reference: Ten Year Servicing Plan, City of Surrey Engineering Department , June 1993.