Shaftesbury Estates AREA STRUCTURE PLAN

TOWN OF PEACE RIVER

BYLAW NO. 1334

A BYLAW OF THE TOWN OF PEACE RIVER, IN THE PROVINCE OF ALBERTA, TO ENACT THE SHAFTESBURY ESTATES AREA STRUCTURE PLAN (RIVER LOT 39 AND PART OF RIVERLOT 40, SHAFTESBURY SETTLEMENT)

WHEREAS Section 64(1) of the Planning Act, R.S.A., 1980 provides that a Council may adopt an Area Structure Plan; and

WHEREAS the Council of the Town of Peace River deems it advisable to adopt an Area Structure Plan for Riverlot 39 and part of Riverlot 40, Shaftesbury Settlement so as to provide for the orderly development of said lands.

NOW THEREFORE, the Council of the Town of Peace River, in the Province of Alberta, duly assembled hereby ENACTS as follows:

- THAT the following attached information hereto form part of this bylaw:

Schedule A - The Land Use Policy Document

Schedule B - The Land Use Map

Schedule C - The Staging Map

Schedule D - The Utilities Map

3. THIS bylaw to take effect on the date of its final passing thereof.

READ a first time this 22nd day of February, A.D., 1988.

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READ a second time this 11th day of APRIL , A.D., 1988.

Mayor

Mayor

Secretary Treasurer

TOWN OF PEACE RIVER

SHAFTESBURY ESTATES AREA STRUCTURE PLAN, PART OF RIVERLOT 39 AND PART OF RIVERLOT 40, SHAFTESBURY SETTLEMENT

LAND USE POLICY DOCUMENT

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PART 1: GENERAL

1.0 Plan Area

The lands encompassed by the Shaftesbury Estates Area Structure Plan shall consist of those lands lying within the boundaries of the Town of Peace River described as a portion of Riverlot 39 and a portion of Riverlot 40, Shaftesbury Settlement.

1.1 Scope

The Shaftesbury Estates Area Structure Plan is intended to guide the Town of Peace River and developers so as to ensure the rational, orderly and economic development of the plan area.

1.2 Plan Purpose

The intent of the Shaftesbury Estates Plan is to:

(a) provide a framework for subdivision and development of a portion of Riverlot 39 and a portion of Riverlot 40, Shaftesbury Settlement in the Town of Peace River.

1.3 Plan Components

The Shaftesbury Estates Area Structure Plan shall consist of the following:

- (a) Land Use Policy Document
- (b) Land Use Map
- (c) Staging Map
- (d) Utilities Map

1.4 Plan Conformity

- (a) The plan is prepared pursuant to Section 64 of the Planning Act, R.S.A., 1980.
- (b) The plan is deemed to conform to the Mackenzie Regional Planning Commission's Regional Plan.
- (c) The plan is deemed to conform to the Peace River General Municipal Plan, as amended.
- (d) For purpose of Section 91(1)(b) of the Planning Act, R.S.A., 1980, any subdivision approved within the Plan area shall conform with the Town of Peace River Land Use Bylaw prior to approval.

1.5 Interpretation

In this Plan:

- (a) LAND USE BYLAW means the Town of Peace River Land Use Bylaw No. 1082.
- (b) PLAN means the Shaftesbury Estates Area Structure Plan.
- (c) PHASE OR SUBDIVISION PHASE means a particular area of land defined by the Town of Peace River and which the Town of Peace River considers as a single unit for purposes of zoning to permit subdivision.
- (d) TOWN means the Town of Peace River.
- (e) REDESIGNATE TO PERMIT SUBDIVISION means the amendment of a land use bylaw whereby a district classification assigned to a particular area of land within which a subdivision is proposed but does not conform to that district is replaced by another district classification for which the proposed subdivision does conform pursuant to the procedures outlined in Sections 139 to 143 of the Planning Act, R.S.A., 1980.
- (f) All other words and expressions shall have the meanings specifically defined in the Town of Peace River Land Use Bylaw and the Planning Act, R.S.A., 1980.

PART 2: ADMINISTRATION

2.0 Flexibility

- (a) The boundaries of any land use designations or phases, the alignment of any lot lines, or the location of roadways or proposed utilities and all quantities and figures contained herein will be considered as approximate only and not absolute. Any minor adjustments or variances that may be necessary in the opinion of the Town, to the aforementioned items shall not require an amendment to the Plan.
- (b) The land uses, densities and design as shown on the Land Use Map and the Staging Map, shall not be altered unless directly authorized by the Town. Variations in the recommended land uses and design will only be permitted at the discretion of the Town and will be dependent upon:
 - (i) the circumstances requiring the change, and
 - (ii) the utility servicing and road capacities, and
 - (iii) the design features, and
 - (iv) such other information as the Town deems necessary

- 2.1 Land Use Bylaw Operations in regard to Phasing or Subdivision
- (a) Following adoption of the plan, the Plan area shall be redesignated by the Town to permit subdivision.
- (b) Any land proposed for subdivision shall first be redesignated to the appropriate district.
- (c) Any adjustment or variance to this plan which is deemed necessary, shall only be applied by the Town prior to redesignation to permit subdivision of the area.
- (d) Following redesignation to permit subdivision, any reasonable adjustment or variance affecting that area shall become part of:
 - (a) The Land Use Policy
 - (b) The Land Use Map
 - (c) The Staging Map
 - (d) The Utilities Map

or all, or any of them, replacing what formerly existed, and shall be recorded in Part 4, MINOR AMENDMENTS

2.2 Reserve Dedication

As a condition of subdivision approval, the Town shall recommend to the Subdivision Approving Authority that the areas designated as MUNICIPAL RESERVE and ENVIRONMENTAL RESERVE in the Land Use Map be dedicated as such at the time of subdivision.

2.3 <u>Development Agreement</u>

The Town shall recommend to the Subdivision Approving Authority that a developer enter into a Development Agreement as a condition of subdivision approval in the plan area. Such agreement may deal with the costing of public roadways, drainage ditches, culverts, water supply, sewage disposal systems or utilities as outlined in Section 92 of the Planning Act, R.S.A. 1980. Further, a Development Agreement may deal with other aspects which the two parties may mutually agree upon.

2.4 Sequence of Development

- (a) The Plan Area shall consist of two (2) phases as described on the Staging Map.
- (b) Each phase represents a desirable unit of land for subdivision at one time within the Plan Area but is not meant to be fixed or inflexible. Hence, an application for subdivision approval may consist of a single phase or fractional portion thereof as deemed acceptable to the Town.
- (c) The numbers described for each phase represent a desirable progression for subdivision within the Plan Area but one phase may precede another out of sequence if deemed acceptable by the Town.

PART 3: LAND USE POLICIES

3.0 Land Use Designations

The Plan area shall be divided into the following land use designations as described on the Land Use Map:

- (a) R1 Single Family Residential
- (b) R1E Residential 1-E District
- (c) MR Municipal Reserve
- (d) ER Environmental Reserve

3.1 Roadways

Roads within the planning area will consist of local roads and of lanes.

(a) Local Road

- (i) The lands designated local road are to be used for the development of roads designed to carry low levels of traffic volume and to provide access to individual parcels of land.
- (ii) Local roads should be hard surfaced.
- (iii) Sidewalks should be provided on at least one side of every road and curb and gutter should be provided on both sides of every road.

(b) Lane

- (i) The lands designated as lanes shall be used for lanes or for walkways.
- (ii) The Town shall determine whether lands so designated shall be used either for a lane or a walkway prior to subdivision approval and recommend to the Subdivision Approving Authority that said lands be approved as such.

3.2 <u>Utility Systems</u>

- (a) Utilities shall include a water distribution system, a sewage system, storm sewers, gas lines and power system as indicated on the Utilities Map.
- (b) Utilities should be situated, as shown on the Utilities Map, in a public road allowance, in a utility lot or lane, or in a described right-of-way plan. Drainage ditches, power lines and gas lines should be located near lot lines.
- (c) The timing of the provision of utility systems and the cost sharing with the town respecting oversizing of lines for the benefit of future and adjacent developments in the West Bank Area will be negotiated at the time of entering into a Developer's Agreement.
- (d) In order to provide some flexibility, proposed plans showing utility mains may be revised with the consent of the Town without an amendment to the plan.
- (e) As the extent and rate of development in the West Bank Area is unknown at this time and as the major outfall main and Sewage Treatment Plant as proposed in West Bank Expansion Plan Bylaw is premature, it is proposed for the early stages of development of Riverlot 39 to borrow on the interim surplus capacity of the existing system, with the Developer contributing at the outset the calculated pro-rated fair share of costs, as estimated by the Town, owed by this development for the future outfall main.

3.3 Buffers

In order to provide a buffer from noise and dust along the arterial and major collector roads, the following special development setbacks shall be applied within the low density residential land use area:

(i) Along Shaftesbury Trail, a buffer of 5 meters shall be established on the south side of the roadway. An additional 5 meters shall be provided for future road widening.

3.4 Density Standards

The Town shall refer to Table 1 for purposes of determining residential unit densities or population densities within the Plan Area and all figures contained therein are considered as approximate only by the Town.

3.5 <u>Development Standards</u>

All development standards shall be acceptable to the Town of Peace River and must equal or exceed development standards and practises existing in the Town, and shall meet acceptable Engineering Standard Practise consistent with development in a northern climate.

PART 4: MINOR AMENDMENTS RECORD

Those amendments deemed MINOR by the Town to the Land Use Map, the Staging Map, the Utilities Map or the Land Use Policy Document shall be recorded in this Part and henceforth become part of this plan.

PART 5: MAJOR AMENDMENTS RECORD

Those amendments deemed MAJOR shall be enacted pursuant to Sections 139 and 143 of the Planning Act, R.S.A., 1980 and recorded in this part and henceforth become part of this plan.

TABLE 1
PROJECTED RESIDENTIAL DENSITY FIGURES FOR PLAN AREA

PHASE	LAND USE	LOTS PROPOSED	PROJECTED POPULATION
1	Single Family Residential (R1-E)	94	329
2	Single Family Residential (R-1)	35	123
TOTAL			452

Based on a projected average of 3.5 persons per household for single family dwelling units.

SUPPORTING RESEARCH

(1) APPENDIX "A"

Reference to the "DETAILED GEOTECHNICAL ASSESSMENT, RIVERLOTS 38 TO 41, TOWN OF PEACE RIVER", prepared in November, 1986 by Thurber Consultants Ltd.

(2) APPENDIX "B"

Preliminary Engineering report in support of the "Shaftesbury Estates Area Structure Plan", prepared by Northpoint Land Surveying Ltd. and D. Bekevich Engineering Services.

APPENDIX "A"

REFERENCE TO THE "DETAILED GEOTECHNICAL ASSESSMENT, RIVER LOTS 38 TO 41, TOWN OF PEACE RIVER"

A Geotechnical Assessment study prepared by Thurber Consultants Ltd. at the request of the Town of Peace River provides a geotechnical assessment of the portion of River Lots 38, 39, 40, and 41 of the Shaftesbury Settlement lying between the Shaftesbury Trail and the Peace River. Objectives of the assessment were to: determine the location of a safe Setback Line from the Peace River, to study the affects of development on groundwater levels and the implication of this on the Setback Line, and to evaluate the suitability of near-surface soils for septic tile fields.

The report determined the location of a safe Setback Line, determined that the effects of development on groundwater levels would have minimal affect on slope stability, and made recommendations respecting the possible use of private sewage disposal systems.

The entirety of the Thurber Consultants Ltd. report is not included herein. The location of the safe Setback Line as shown on Drawing 2, "Development Setback, River Lot 38" of that report has been reproduced on a drawing of the overall development, and is enclosed as background information of the Plan.

1.0 INTRODUCTION

The purpose of this report is to outline the preliminary Engineering considerations and provide a servicing design for the entire subdivision. The design considers the planning guidelines set out in the following reports:

- a) West Peace Utilities A Review of Alternative Designs Prepared by Associated Engineering Ltd. (Korzenowski) March, 1977
- b) West Bank Peace River Concept Plan Prepared by Associated Engineering Services Ltd. November, 1981
- c) West Bank Expansion Plan General Plan Amendment Prepared by Mackenzie Regional Planning Commission December, 1984
- d) Detailed Geotechnical Assessment River Lots 38 To 41 Town of Peace River Prepared by Thurber Consultants Ltd. November, 1986
- e) Shaftesbury Terrace Area Structure Plan Prepared by Northpoint Land Surveying & Engineering Limited March, 1987

Shaftesbury Estates is a proposed subdivision located on River Lot 39 and part of River Lot 40 of the Shaftesbury Settlement. It is bounded southerly by the property line of River Lot 39; easterly by the Peace River; westerly by Shaftesbury trail and northerly by Baldwin Creek and the property line of River Lot 39. The property lies completely within the corporate limits of the Town of Peace River.

This report has been based on the information contained in the above mentioned reports and the drawings in the proposed Area Structure Plan.

2.0 PHASING

The subdivision is to be developed in two phases as shown on the Staging Map. The phases are designed to allow for staged development, taking into consideration market demand and servicing criteria.

Phase I will provide for twenty three (23) R1-E residential lots backing on to the Peace River and forty (40) R1-A residential lots.

3.0 SANITARY SEWAGE COLLECTION

The existing sewage treatment system for the Town of Peace River consists of four anaerobic cells on Lee Island located at the North end of Town. These cells have the capacity to provide primary treatment for a population of 10,000 people. There is no secondary treatment.

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The sewage is transported to Lee Island by a system of lift stations and sanitary sewer mains located on the east side of the River. All the sewage flow from the west side of the River crosses the Peace via the railroad bridge. The sewer main at the railroad bridge has a capacity of some 57 l/s (2 cfs) or the equivalent of 4000 people.

The existing population of Lower West Peace, Upper West Peace, Trailer Park, Industrial Park, and assuming Phase I and Phase II of Rolling Hills being full is estimated to be some 2000 people. This population estimate is not based on a detail analysis. Therefore, it is estimated that the capacity of the sewage system across the railroad bridge for additional subdivisions should be limited to 28 l/s (1 cfs) or an equivalent population of 2000.

3.1 LONG RANGE PLAN

At the time of preparing this report, an on going study by Associated Engineering Ltd. investigating the various alternative sites for sewage treatment within the Town of Peace River has not been completed. Therefore, this report has limited its scope for the sewage collection system to the northerly property line of River Lot 39 and using existing facilities.

The best system for sewage collection is a complete gravity system. The West Bank Concept Plan provides for a 600 mm (24") diameter sanitary main from River Lot 39 to River Lot 40 to service a design population of over 42,000 people. A corridor has been provided along the Shaftesbury Trail to allow for this proposed gravity main. This is shown on the Utilities Map as "Future Gravity Trunk Sewer".

3.2 ESTIMATED GROWTH

In view of the present economic upturn, it is anticipated that there will be residential development on River Lot 38 & River Lot 39 in 1988. At a development growth rate for each River Lot of forty residential houses per year, it is estimated that Phases I & II may be fully developed within 3 to 4 years and have an estimated population of 1000.

3.3 SHORT TERM PLAN

The existing capacity of the sewage system on the West Side is adequate for servicing some 4000 people. It is the intent that the proposed subdivision would use the existing facilities on the West Side until such time as the population increases to full capacity or alternative sewage facilities are available.

It is proposed that a lift station be constructed near the power line r/w in River Lot 39 as shown on the Utility Map. The lift station would be capable of pumping to the existing system in Lower West Peace.

The short term plan would have the proposed forcemain outleting into lower West Peace. The long term solution would be used once an alternative sewage facility is available. The system could then be modified

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using one of the following alternatives:

- i) Abandon the proposed Lift Station and construct a gravity main along the proposed forcemain corridor to Shaftesbury Trail and follow the proposed "Future Gravity Trunk Sewer" corridor.
- ii) Abandon the proposed force main along the Shaftesbury Trail and maintain the proposed Lift Station with a shorter force main outleting in the trunk sewer. A large diameter gravity trunk sewer would be installed in the proposed corridor.

3.4 SEWAGE COLLECTION SYSTEM WITHIN SHAFTESBURY ESTATES

The minimum sewage pipe used in a residential development is a 200 mm (8 inch) diameter. Typically, a 200 mm (8 inch) diameter line will service residential populations up to 1000.

Along 92nd Street, the proposed sewer main will be sized to have the capacities for the long term plan. The long term contributing population south of 92nd street in the proposed subdivision has been estimated to be 2200. This includes contributing populations from all of River Lot 38, upstream of River Lot 38 as shown in the West Bank Concept Plan, the Rosenburger Development, and the Grimble property.

The contributing population for Phases I & II of Shaftesbury Estates has been estimated to be 465.

The short term plan is based on all phases for contributing populations from Shaftesbury Estates and Shaftesbury Terrace to outlet in the proposed lift station. The proposed lift station could then be sized as per the long term plan - a population of 2200. It is estimated that the long term flows into the lift station would then be 40 l/s (1.4 cfs).

4.0 WATER SUPPLY & DISTRIBUTION

4.1 WATER SUPPLY

The existing Water Treatment Plant was constructed on River Lot 38 and treats the water from the Peace River. The plant can produce up to $11,500~\rm{m}^3/\rm{day}$ (1750 Igpm) of potable water. These facilities will adequately service a population of 16,000 to 18,000.

The Water Treatment Plant has but one trunk main to service the Town. A 300 mm (12 Inch) diameter water trunk main was installed along the proposed 92nd street as shown in the Utility Map. This water line follows the Shaftesbury Trail and eventually discharges into Reservoir 400.

Water for fire protection and consumption for the proposed subdivision will be supplied by gravity from Reservoir 400. This reservoir will supplement the capacities of the Water Treatment Plant.

4.2 WATER DISTRIBUTION SYSTEM WITHIN SHAFTESBURY ESTATES

The terrain on the proposed subdivision rises from an elevation of approximately 310 m near the River to an elevation of 362 m at the north west corner of the proposed subdivision. Based on preliminary calculations, the existing facilities shall be able to adequately provide operating pressures from 276 kPa to 414 kPa (40 to 60 psi). During peak demands periods, the system pressure moves toward the lower limit while during low demand it will move to the upper limit.

Selection of the appropriate sizing for the proposed water mains servicing Phases I & II should be based on providing both fire flows and consumption.

It was assumed for design purposes that a C-900 Class 150 pressure PVC pipe would be used. The Hazen-Williams flow coefficient for PVC has been conservatively established in the "Handbook of PVC Pipe" at C=150. The proposed water system in this subdivision has been designed using this coefficient.

The minimum size pipe required in residential subdivisions is 150 mm (6 inch) diameter. Water mains and services installed in gravel will require 50 mm (2 Inch) insulation.

Hydrant spacing in residential areas are determined by the fire fighting requirements. Typically, for fire flows of 1200 Igpm, a maximum horizontal spacing of 134 m (440 ft.) is required.

5.0 GRADING & DRAINAGE

The proposed subdivision lies within the area studied for servicing requirements under the West Bank Concept Plan. As indicated in the West Bank Concept Plan, the storm sewer will have to carry water from two tributary areas from the northwest.

In the West Bank Concept Plan, a 600 mm (24 Inch) diameter storm sewer is proposed to be installed along the major collector road in the southerly boundary of River Lot 39. The intent of the plan is to outlet directly into the Peace River. As indicated in the Shaftesbury Terrace Area Structure Plan, provision for a corridor for an outfall structure for storm sewer has been provided. As shown in the utility map a corridor has been provided to outlet into the proposed structure. There has been no verification of the sizing of the proposed storm sewer lines.

It has been determined that a third sub basin containing part of Phase I and all of Phase II. A corridor for an outfall structure has been provided for the storm sewer to outlet directly into the Peace River.

Internal drainage will be provided through gutters and catch basins tying into the proposed storm sewer mains. The proposed corridors for the storm sewer are shown on the utility plan.

6.0 RECOMMENDATIONS & CONCLUSIONS

Based on the available contours, there are no major constraints posed to the proposed development regarding the provisions to the site as stated herein. The site can be developed to fit into the servicing plans as outlined in the West Bank Concept Plan. Significant comments in this regard are as follows:

- Existing Town of Peace River water supply facilities have more than adequate capacity to serve the proposed development as stated herein.
- The capacity of the existing sanitary trunk main at the rail-road bridge has a capacity of 57 1/s (2cfs) or the equivalent of a population of 4000. It is estimated that once River Lot 38 and this proposed subdivision are fully developed this sanitary trunk will be operating at full capacity.

Respectfully submitted,

PRELIMINARY

Mr. D.C. Bekevich, P.Eng. D. BEKEVICH ENGINEERING SERVICES





