

**BY-LAW NO. 2764 OF THE
COUNTY OF GRANDE PRAIRIE NO. 1**

A by-law of the County of Grande Prairie No. 1 in the Province of Alberta, to adopt the attached **CROSSROADS NORTH Area Structure Plan for SECTION 13-72-6-W6**

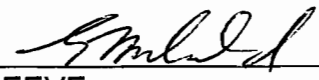
WHEREAS the Municipal Government Act, Statutes of Alberta, 2000, Chapter M-26. and amendments thereto, authorizes a Council to provide a framework for the subdivision and development of an area of land within the Municipality; and

WHEREAS the Council of the County of Grande Prairie No. 1 has properly notified the owners of land within the development area, pursuant to provisions of the Municipal Government Act, Statutes of Alberta, 2000, Chapter M-26, and amendments thereto.

NOW THEREFORE the Council of the County of Grande Prairie No. 1 duly assembled, hereby enacts as follows:

1. That this By-law shall be known as the "**CROSSROADS NORTH AREA STRUCTURE PLAN BY-LAW**".
2. That the CROSSROADS NORTH Area Structure Plan document is attached to this by-law as an appendix and forms part of this by-law.
3. That this by-law shall take effect on the date of its final passage by Council.

READ A FIRST AND SECOND TIME THIS 31 **DAY OF** OCTOBER **A.D. 2005.**

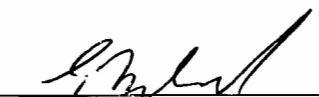


REEVE



COUNTY ADMINISTRATOR

READ A THIRD TIME AND FINALLY PASSED THIS 5TH **DAY OF** DECEMBER
A.D. 2005 .



REEVE



COUNTY ADMINISTRATOR

COUNTY OF GRANDE PRAIRIE NO. 1
CROSSROADS NORTH AREA STRUCTURE PLAN

Prepared by:

ISL

In association with



Beirsto Lehnert Ketchum Engineering Ltd.

October 2005

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1.0 INTRODUCTION

1.1 Purpose of Plan

The Crossroads North Area Structure Plan has been prepared to provide a framework for future development of parts of four quarter sections of land in the County of Grande Prairie No. 1 adjacent to Highways 2 and 43 north of the City of Grande Prairie.

The primary objective of this Plan is to provide a framework for the future development of the subject lands for industrial and residential purposes in a manner that is consistent with the goals, objectives and policies of the County of Grande Prairie No. 1. In addition, as the site fronts onto two highways, the requirements of Alberta Infrastructure and Transportation also need to be accommodated. The Plan establishes the future land use and circulation pattern proposed for the site, and provides details respecting proposed servicing for the area.

This Area Structure Plan has been prepared in accordance with the Municipal Government Act, the Subdivision and Development Regulation, and the County of Grande Prairie Municipal Development Plan.

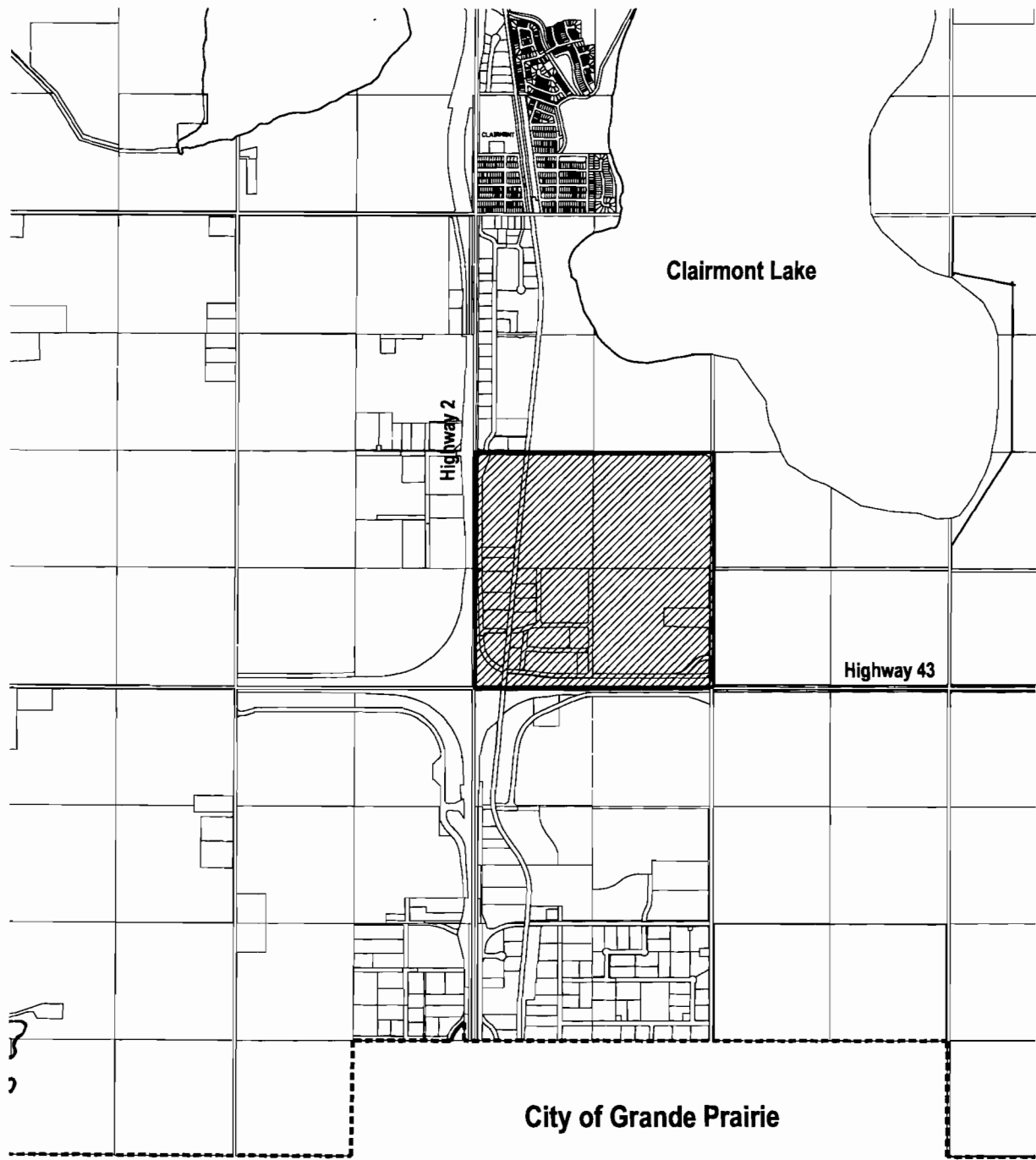
1.2 Plan Area

The land affected by this Area Structure Plan is located at Four Mile Corner, with the south boundary of the area being 2.4 km north of the City of Grande Prairie as illustrated in Map 1. The Plan area consists of four quarter sections of land totaling approximately 260 ha as outlined in Table 1. The policies of this plan will apply to this area.

The Plan area is bounded to the west by Highway 2, the south by Highway 43, to the east by Range Road 60, and to the north by 84th Street (Bauman Road). Other industrial parks at various levels of development are located to the north, west and south. The lands to the northeast and east are currently in agricultural use, but are proposed for future residential development.

1.3 Existing Conditions

As indicated in Map 2 the southwest portion of the Plan area is currently under development for industrial purposes (Crossroads Business Park), and all lands west of the rail line have been subdivided for industrial use. The balance is predominantly in agricultural production. Three farm sites are located on the east half of the Plan area, one of which is served by a large dugout.



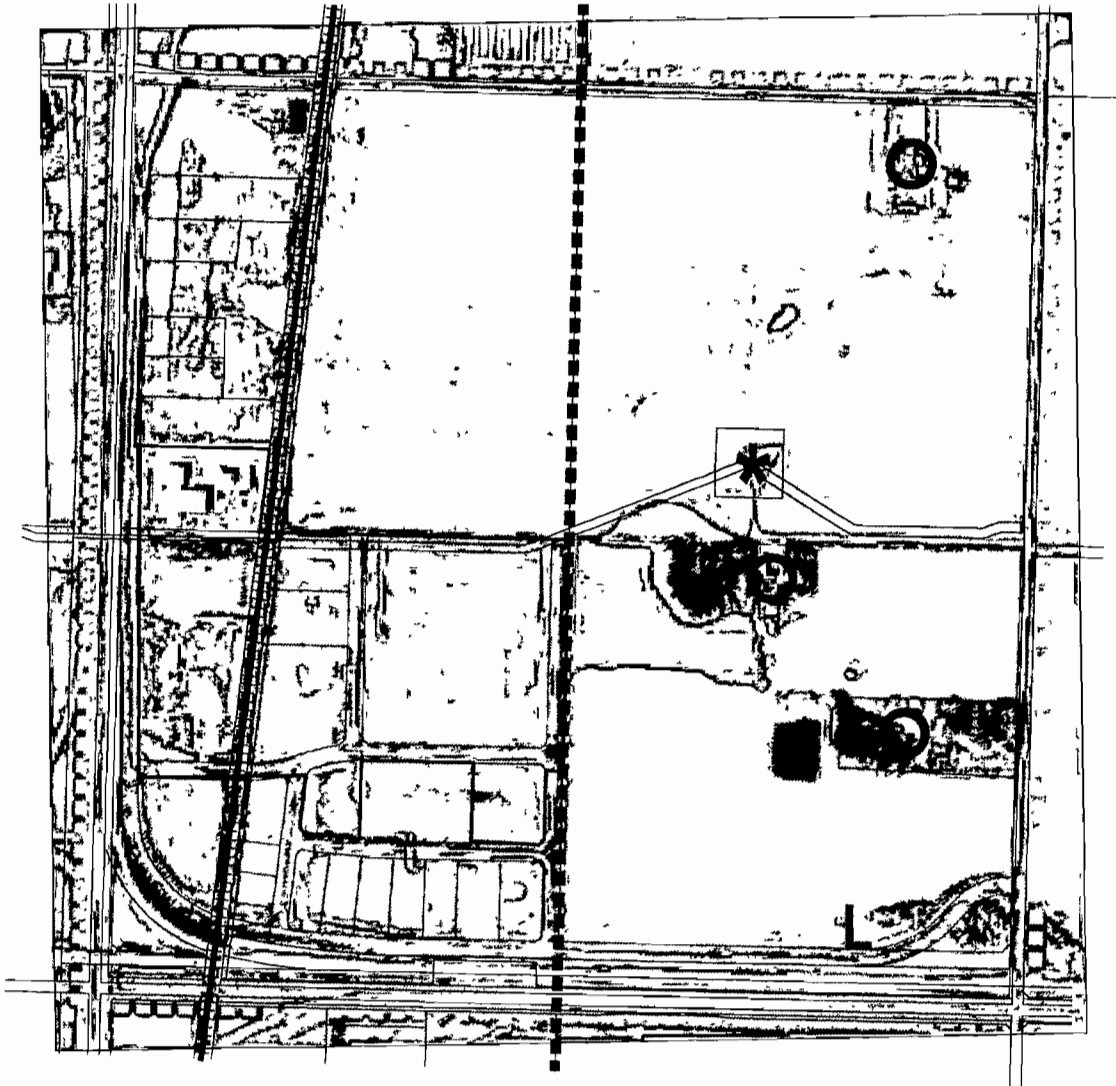
Map 1- Location

**CROSSROADS NORTH AREA STRUCTURE PLAN
County of Grande Prairie No. 1**



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ENGINEERING LTD.





CROSSROADS NORTH AREA STRUCTURE PLAN

COUNTY OF GRANDE PRAIRIE NO. 1

MAP 2 - Existing Conditions



SCALE N T S

- | | | | |
|---|--------------------------------|---|--------------|
|  | RAILWAY LINE |  | FARM SITE |
|  | UTILITY CORRIDOR |  | LIFT STATION |
|  | EXTENT OF EXISTING DEVELOPMENT |  | GAS WELL |

 PLAN BOUNDARY



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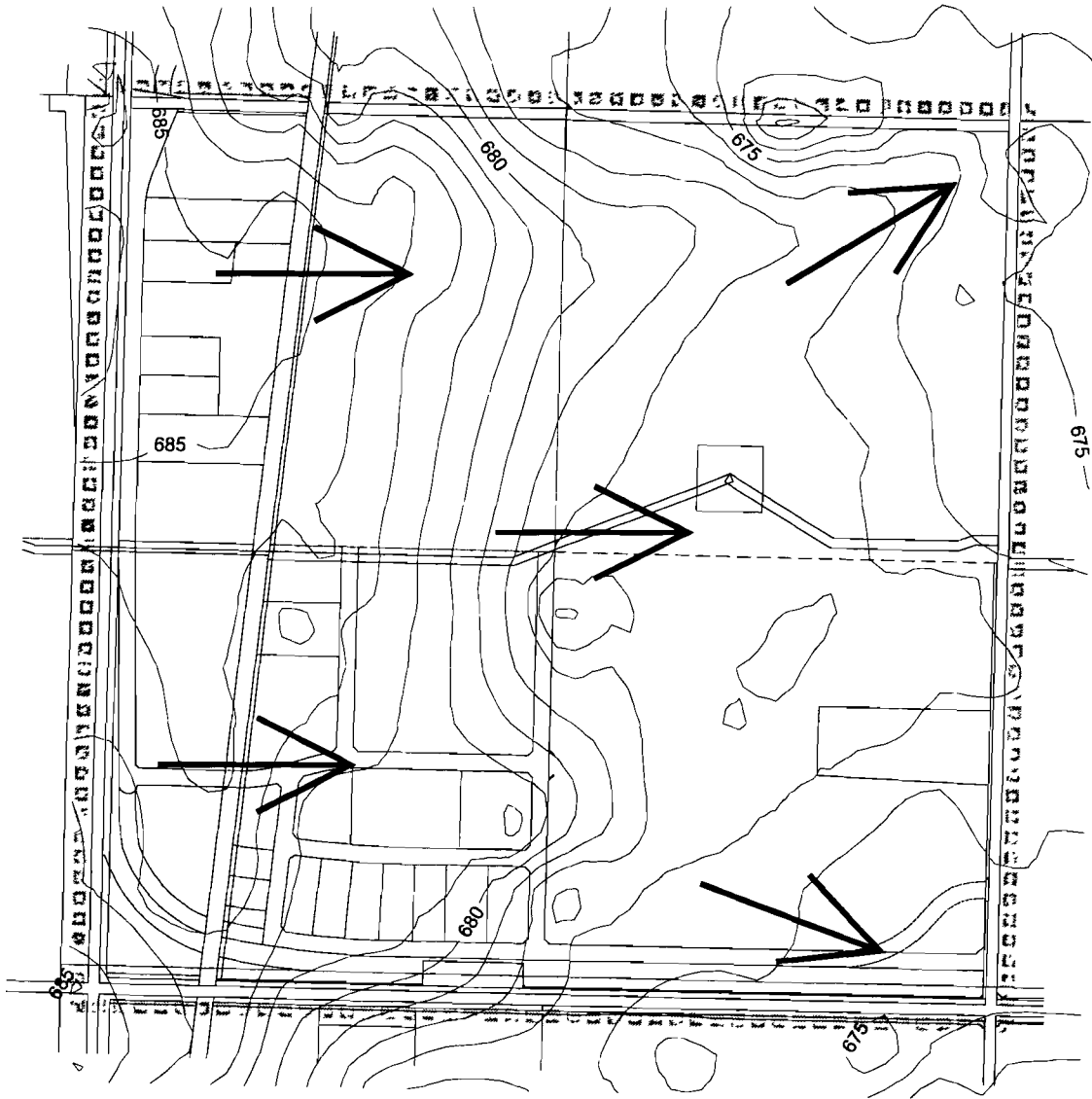


Table 1 – Plan Area Composition

Legal	Owner	Area (ha)
NE 13-72-6-6	Roman and Viola Bauman	63.0
Pt. NW 13-72-6-6	Roman and Viola Bauman	37.5
Pt. NW 13-72-6-6	875218 Alberta Ltd.	16.1
SE 13-72-6-6	Barry and Kathy Miles	52.1
Lot 1, Plan 8122484	Leslie and Ella Miles	4.1
Block 1 Lot 1 Plan 0226052	995091 Alberta Ltd.	2.9
Block 1 Lot 2 Plan 0226052	1021215 Alberta Ltd.	2.3
Block 1 Lot 3 Plan 0226052	1021215 Alberta Ltd.	2.2
Block 2 Lot 4 Plan 0226052	Crossroad Devel. Inc.	2.7
Block 1 Lot 10 Plan 0227103	982046 Alberta Corp.	1.6
Block 1 Lot 11 Plan 0227103	982046 Alberta Corp.	2.3
Block 3 Lot 1 Plan 0323017	Schlumberger Canada Ltd.	12.2
Block 7 Lot 1 Plan 0323017	Crossroad Devel. Inc.	1.1
Block 7 Lot 2 Plan 0323017	Barry and Kathy Miles	6.2
Block 6 Lot 4 Plan 0324680	Warrior Holdings Inc.	1.4
Block 6 Lot 5 Plan 0324680	Lomak Bulk Carriers Corp.	1.4
Block 6 Lot 6 Plan 0324680	S & M Kenworth Ltd.	1.5
Block 6 Lot 7 Plan 0324680	S & M Kenworth Ltd.	1.6
Block 4 Lot 1 Plan 0424450	CRD Properties Corp.	0.9
Block 7 Lot 1A Plan 0425847	Baker Hughes Canada Co.	1.8
Block 7 Lot 1B Plan 0425847	Crossroad Devel. Inc.	4.0
Several Plans	Internal Roads	15.7
Plan 3285BU	Railway ROW	4.9
Several Plans	Highway ROW/Service Road	20.2
Total		259.7

The westerly portion of the Plan area is bisected by the Alberta RailNet rail line. A utility corridor that accommodates a regional water transmission line runs north-south through the centre of the Plan area.

As illustrated in Map 3, surface drainage runs from west to east, ultimately draining to Clairmont Lake to the northeast. The Plan area is relatively flat, with elevations ranging from 685m to 675m (0.6% slope).



CROSSROADS NORTH AREA STRUCTURE PLAN

COUNTY OF GRANDE PRAIRIE NO. 1

MAP 3 - Topography



SCALE N T S

- 685 ELEVATION
- DIRECTION OF FLOW

PLAN BOUNDARY



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1.4 Policy Framework

1.4.1 County of Grande Prairie Municipal Development Plan

The County Municipal Development Plan (MDP) provides the general policy framework within which more detailed plans are required to be consistent. Section 13.5 of the Plan indicates that area structure plans are required as a prerequisite for the development of industrial parks, hamlets, highway commercial subdivisions, "or any other major development where such a plan would assist the County in making planning decisions".

The Crossroads ASP is contained within the 20 year growth boundary of the Clairmont Urban Area as identified in Section 5 of the MDP. The content of this Plan has been prepared in accordance with the requirements of this Section.

1.4.2 County of Grande Prairie Land Use Bylaw

The southwest quarter of the Plan area is designated as Rural Medium Industrial (RM-2) in the County's Land Use Bylaw, while the lands located west of the rail line are zoned as Highway Industrial (RM-4). The balance of the Plan area is zoned as Agricultural (AG). In order to facilitate the development of the balance of the lands for industrial and residential purposes, it is intended that the applicable lands be rezoned to the appropriate land use districts as a prerequisite to subdivision as discussed in Section 4.2.

1.4.3 Subdivision and Development Regulation

Section 14 of the Regulation requires that an area structure plan be prepared in advance of development on all lands located within 800m of a highway. This ASP has been prepared in accordance with the Regulation.

1.4.4 Clairmont Planning and Servicing Areas Study

The Clairmont Planning and Servicing Areas Study established logical area structure plan and servicing areas for lands in the vicinity of Clairmont. This study was prepared in order to address broad planning and servicing opportunities for future development around Clairmont.

This Area Structure Plan corresponds to parts of planning areas P6 and P7 as defined in the Study.

2.0 DEVELOPMENT CONCEPT

2.1 Goals of the Plan

The Crossroads North Area Structure Plan has been prepared in accordance with the following goals and objectives.

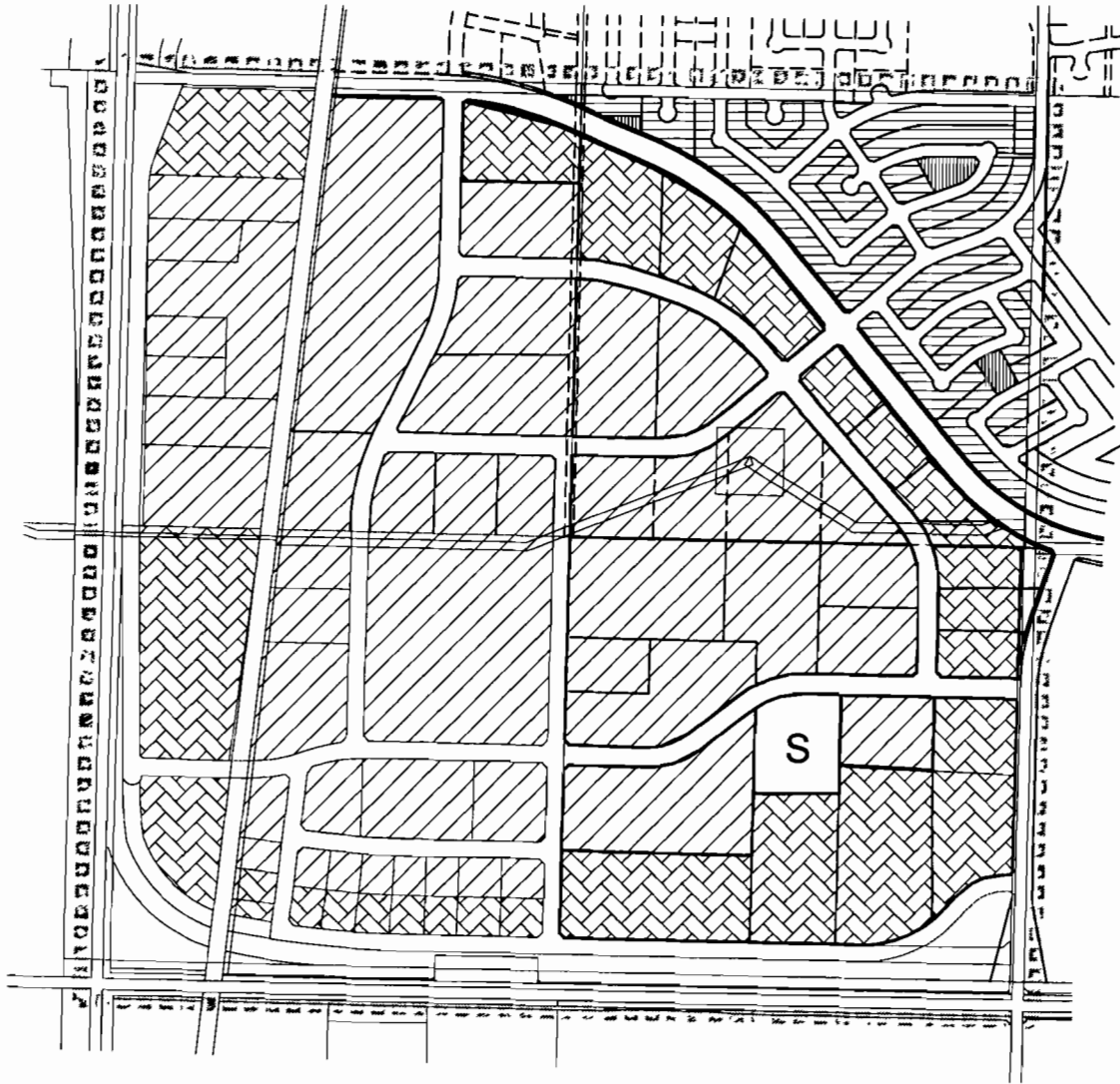
1. To provide a sound planning framework for the future development of the Plan area that is consistent with the goals of the County of Grande Prairie No. 1.
2. To contribute to the continued economic development of the Clairmont area through the development of the plan area for residential and industrial purposes.
3. To protect and maintain the operational safety and integrity of the Highway 2 and 43 corridors, as well as the County's transportation network.
4. To establish an efficient and economical development and servicing concept for the Plan area.

2.2 Land Use Concept

A breakdown of land uses proposed for the Plan Area is provided in Table 2. The overall development concept proposed for the area is illustrated in Map 4. The intent of this plan is to provide a generalized land use plan with a conceptual lot layout that will be subject to further refinement at the time of subdivision and survey.

Table 2 – Land Use Area Estimates

Land Use Category	NW 13	NE 13	SW 13	SE 13	Total	Percent
Gross Area	64.73	64.87	64.83	65.28	259.71	
Less Highway Right-of-Way	1.02	0	8.63	6.62	16.27	
Less Railway Right-of-Way	2.44	0	2.44	0	4.88	
Net Developable Area	61.27	64.87	53.76	58.66	238.56	100.0
Highway Industrial	6.77	11.06	14.47	22.77	55.07	23.1
General Industrial	43.89	16.65	28.25	26.24	115.03	48.2
Residential	0	17.69	0	0	17.69	7.4
Roads	10.38	17.55	11.04	7.07	46.04	19.3
Storm Ponds	0	0	0	2.58	2.58	1.1
Municipal Reserve	0.23	1.92	0	0	2.15	0.9
Neighbourhood Parks	0	0.78	0	0	0.78	0.3
Other	0.23	1.14	0	0	1.37	0.6



CROSSROADS NORTH AREA STRUCTURE PLAN

COUNTY OF GRANDE PRAIRIE NO. 1



SCALE N.T.S.

MAP 4 - Future Land Use



HIGHWAY INDUSTRIAL



RESIDENTIAL

S

STORM POND



GENERAL INDUSTRIAL



MUNICIPAL RESERVE



PLAN BOUNDARY



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2.3 Industrial Development

- 2.3.1 As noted in Table 2, 71% of the Plan area is to be developed for industrial purposes. A mixture of highway-oriented and general industrial development is proposed. Given the proximity to Highways 2 and 43, it is proposed that approximately 55 ha of land located along the perimeter of the Plan area be designated as Highway Industrial (RM-4) in the Land Use Bylaw. The balance of the industrial land (115 ha or 48% of the Plan area) is to be zoned as Rural Medium Industrial (RM-2).
- 2.3.2 General industrial development, totaling approximately 115 ha, is proposed for a majority of the Plan area. Uses encouraged in this area are those that are characteristic of other industrial parks in the County, and would be administered under the Rural Medium Industrial (RM-2) District of the Land Use Bylaw. Lot sizes designated for this use are intended to average approximately 2.6 ha based on the layout illustrated in Map 4.
- 2.3.3 Highway Industrial development (zoned RM-4 in the Land Use Bylaw) comprises approximately 55 ha (23%) of the Plan area, including the currently developed portion between Highway 43 and the rail line. Lot sizes designated for this use are intended to average approximately 2.1 ha based on the layout illustrated in Map 4.
- 2.3.4 All industrial development in the Plan area shall be the subject of a high level of design and landscaping in accordance with County requirements as identified in Section 4.4 of this Plan. This is a result of the high degree of visibility that these locations afford.
- 2.3.5 All industrial development will be serviced with municipal water and sewer services in accordance with the provisions of this plan.
- 2.3.6 In order to respond to potential changes in market conditions, the highway industrial area immediately adjacent to the major east-west arterial (Bauman Road) may be developed for commercial purposes without an amendment to this Plan. This development would be intended to serve as a transitional use between the proposed industrial development, and future residential development to the northeast. Comprehensive Commercial (CC) zoning, which provides for a range of conventional retail and service uses, would be implemented to minimize the potential for detrimental impacts on residential properties.

2.4 Residential Development

- 2.4.1 Single family residential development is proposed for the northeast portion of the Plan area. Given that the proposed development is to accommodate densities equivalent to that of the rest of the Hamlet, it is intended that lots in this area be zoned as Rural Residential (RR-2) in the Land Use Bylaw. This District limits residential development to conventional stick-built housing.

- 2.4.2 The total area proposed for residential development is 17.7 ha, and results in a maximum yield of 240 lots¹. The Plan area will accommodate 765 residents assuming a density of 3.2 persons per unit.
- 2.4.3 In order to protect those residential areas that are located in proximity to proposed industrial sites, the lots in question are to be separated from the industrial area by Bauman Road. In addition, the affected residential lots are also to be oriented in such a fashion as to ensure that they do not face the industrial lots.
- 2.4.4 All residential development will be serviced with municipal water and sewer services in accordance with the provisions of this plan.

2.5 Municipal Reserve

In accordance with the Municipal Government Act, a maximum of 10% of the Plan area (12.5 ha) may be provided as municipal reserve at the time of subdivision. It is proposed that municipal reserve be allocated in the Plan area as follows:

- Two neighbourhood parks, totaling 0.8 ha are to be provided within the residential portion of the Plan area. Based on the layout proposed in Map 4, two parks averaging 0.4 ha in size are to be provided, although these parks may be modified in location, size and area at subdivision, without amendment to the Plan provided such modifications better meet the County's open space needs;
- In order to provide buffering between residential and industrial properties, as well as to prevent direct lot access to Bauman Road, a strip of municipal reserve totaling approximately 1.4 ha in size is to be provided along both sides of Bauman Road;
- As the above allocation accounts for only a small portion of the total municipal reserve available, lands surrounding the stormwater detention ponds may be considered for dedication as municipal reserve as they contribute to the open space network, and may accommodate trail linkages. The amount of land to accommodate this dedication is to be determined once the pond sizes have been determined through detailed design. Only those portions of wet ponds located above the 1:5 year flood line may be considered for MR credit, and those portions must meet the County's open space and park needs and shall have a maximum grade of 14% (i.e. not to exceed a slope of 1:7).

The balance of the municipal reserve owing (21.0 ha less any reserve dedicated through previous subdivision activity or in the vicinity of the storm pond) shall be provided to the County in land form unless there is a definitive indication that the land for parks and schools is not needed in which case cash-in-lieu will be established as a condition of subdivision approval.

¹ Assumes minimum lot size of 490 m² (5,275 ft²) as provided in the Rural Residential (RR-2) District of the County Land Use Bylaw.

3.0 TRANSPORTATION AND SERVICING

3.1 Road Network

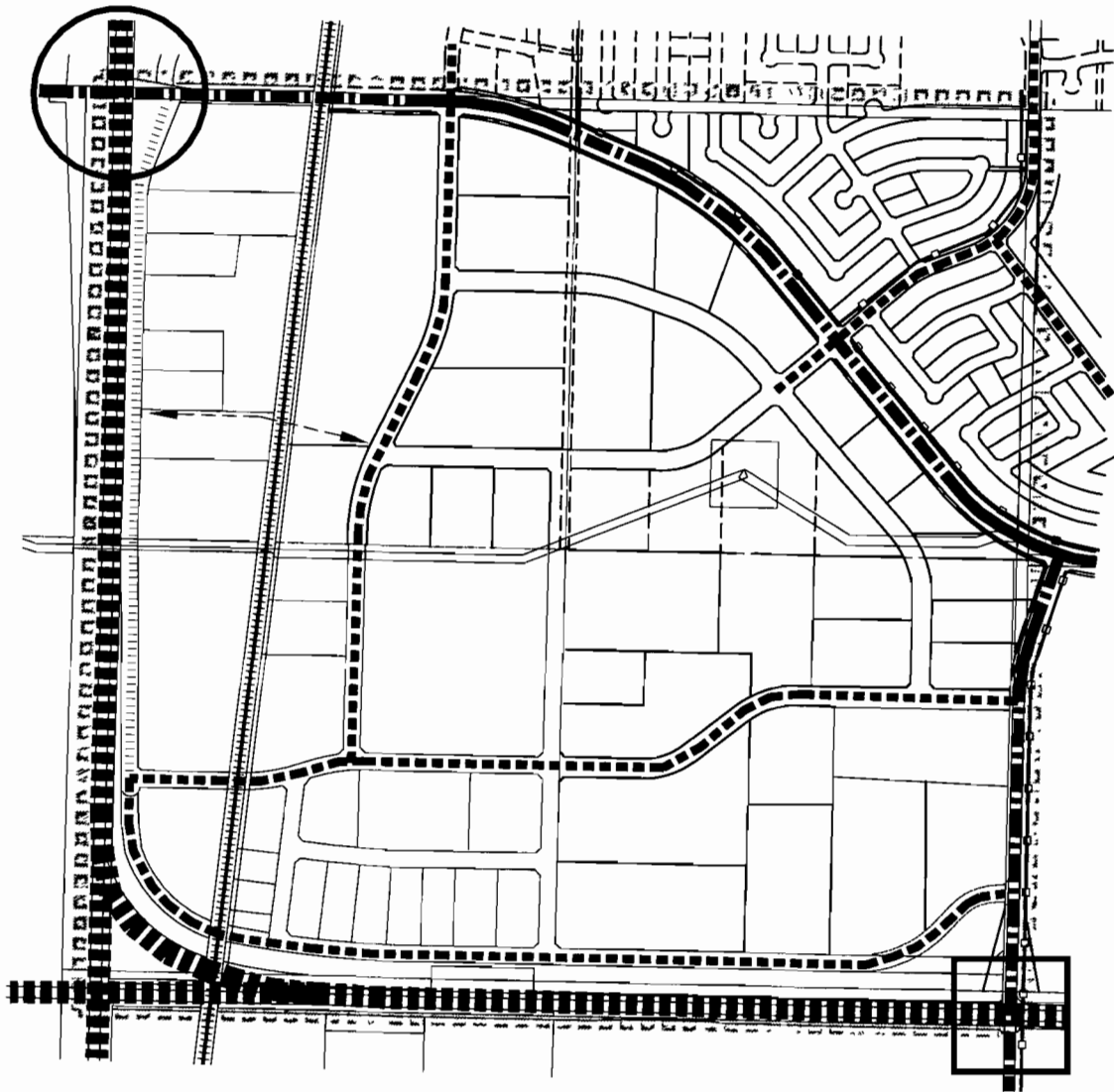
As illustrated in Map 5, primary access to the Plan area is currently obtained from existing locations along Highway 2 at the northwest corner (Bauman Road) and Highway 43 at the southeast corner of the Plan area (Range Road 60). Traffic impact assessments for these intersections will be prepared for Alberta Transportation and the County at the time of subdivision to determine if the intersections have sufficient capacity to accommodate the proposal or if improvements are required.

Bauman Road and Range Road 60 (92nd Street) are major roadways proposed to serve the area. These roadways provide connections to the area's long term regional road network as illustrated on Map 5A, which identifies a broad transportation plan for the entire area north of the City of Grande Prairie. The development of roads in the Plan area is consistent with an overall transportation strategy for the area, which includes future highway locations, an arterial road network system linking the highways to future truck routes and land use areas. A major collector system to enable traffic to flow from the local roads to the arterial roads and ultimately to the highways is also indicated. Of particular importance to the County is the preservation and maintenance of the major collector road system that facilitates north-south traffic flow in the Clairmont corridor, and reduces reliance on the Highway 2/43 corridor. It is intended that this system be integrated into the area structure plan.

Range Road 60 currently intersects with Highway 43. A Highway Access Management Plan recently completed by Alberta Transportation indicates that a flyover may be appropriate at this location. It is the position of Alberta Infrastructure and Transportation that costs associated with a flyover would be the responsibility of the County or developers and that it will be constructed to the satisfaction of, but at no cost to the Department of Infrastructure and Transportation.

Internal vehicle circulation is to be accommodated by a road system that has been designed to facilitate a separation of residential and industrial traffic.

- 3.1.1 All roads in the residential areas are to be constructed to an urban (paved) standard in accordance with County specifications at the expense of the developer, while all industrial roads are to be constructed to a rural (paved) standard. In instances where a proposed road straddles a property line, the cost of road construction shall be shared by both benefiting landowners. Local industrial roads shall provide a minimum standard right-of-way width of 30 metres. Local residential road rights-of-way will vary between 20 metres and 30 metres depending on how surface water run-off is addressed. Industrial collector roads shall have a minimum 40 metre right-of-way. All standards are subject to approval by County Public Works and may be subject to change.
- 3.1.2 Highway access to the Plan area shall be limited to the highway location situated on the northwest corner of the Plan area. No direct highway access to individual lots will be permitted, as all lots shall be accessed by the internal road system.



CROSSROADS NORTH AREA STRUCTURE PLAN

COUNTY OF GRANDE PRAIRIE NO. 1

MAP 5 - Transportation



SCALE N T S

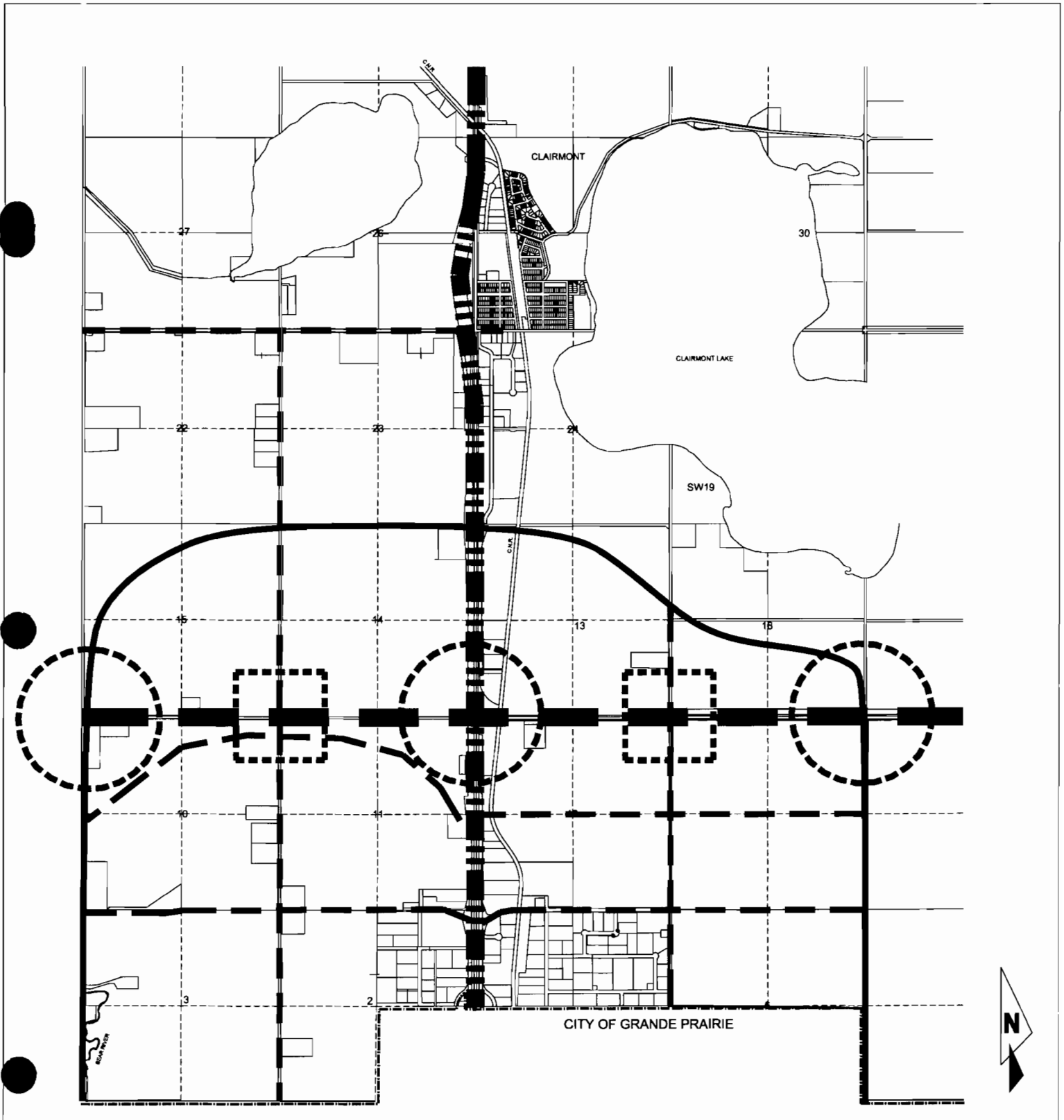
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|---|--|--|
|  HIGHWAY |  SERVICE ROAD |  POTENTIAL CONNECTION |
|  ARTERIAL |  RAILWAY |  FUTURE FLYOVER |
|  COLLECTOR |  INTERSECTION | |
|  PEDESTRIAN LINK | | |

 PLAN BOUNDARY



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MAP 5A - FUTURE REGIONAL TRANSPORTATION NETWORK

SCALE N T S

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ISL
Infrastructure Systems Ltd.



PLAN AREA



HIGHWAY 2



HIGHWAY 43



ARTERIAL ROAD



MAJOR COLLECTOR ROAD



INTERCHANGE



FLYOVER

3.1.3 Range Road 60 currently intersects with Highway 43 at the southeast corner of the Plan area. Development will be permitted, subject to County approval, on the understanding that at some future point, the Province intends to close access to Highway 43 from Range Road 60 and provide service roads to the nearest interchange location. Therefore, the intersection of Range Road 60 and Highway 43 shall remain open until such time as traffic volumes and collision rates warrant closure² and alternative means of maintaining north-south traffic flow are implemented.

3.1.4 Prior to approval of any subdivision in future phases of the Plan area, traffic impact assessments (TIA) will be prepared for the County and Alberta Infrastructure and Transportation, if required, to determine if the existing highway intersections and other major roads are suitable for the area at "build-out". TIA's may be required for any new development or redevelopment that has an impact of approximately 100 trips on the adjacent transportation system during the AM or PM Peak Hour. Specific requirements for completion of a TIA include:

- Identification of intersections to be included in the TIA;
- Proposed development layout;
- Development horizons;
- Confirmation of trip generation rates;
- Review of trip distribution assumptions;
- On site circulation;
- On site parking;
- Access;
- Traffic Signal Warrants (TAC 2003);
- Synchro analysis of intersections.

Results of the TIA will identify improvements in the transportation network required to support the proposed development. Improvements required within a 10 year horizon may be the responsibility of the developer. Improvements identified after the 10 year horizon may be used by the County for future network planning.

3.1.5 Notwithstanding 3.1.3, traffic impact assessments may be requested by the County at the time of future subdivision phases to identify additional potential improvements to all external roadways.

3.1.6 Through the subdivision process, additional land shall be dedicated to the County from the developer to provide for the future widening of 84th Avenue (Bauman Road) to allow for no less than a 50 metre arterial road right-of-way. A 60 metre right-of-way may be required at some locations. Final right-of-way requirements will depend on surface drainage requirements and turning lane requirements. TIA's will clarify the final right-of-way requirements. In addition, traffic impact assessments shall be prepared to identify

² Alberta Infrastructure and Transportation has indicated this intersection is to be eventually removed, and ultimately replaced with a flyover in accordance with the Highway 2/43 Access Management Plan. It is the County's contention that the closure of this and other intersections in the vicinity would be detrimental to safe traffic flow in the area and contribute to additional congestion on Highway 2/43, and therefore all alternatives to closure need to be fully explored.

potential improvements to all external roadways, including the intersection of Highway 2 and 84th Avenue (Bauman Road) if required.

- 3.1.7 Improvements to Range Road 60 (92nd Street) will create a benefiting area which includes land east of the Plan area (SW18-72-5-W6M). The County will endeavour to require new development occurring in the benefiting area to contribute to a portion of the costs for these required improvements.
- 3.1.8 Through the subdivision process, additional land shall be acquired by the County from the developer to provide for the future widening of Range Road 60 and for a flyover at Highway 43.
- 3.1.9 The County may impose a transportation levy in the NW 13 and SW 24 to assist in paying for future upgrades to the Highway 2 – 84th Avenue (Bauman Road) intersection, as well the potential installation of traffic signals and required improvements at the intersections of Bauman Road and 72nd Avenue and Bauman Road and 98th Street.
- 3.1.10 Public transit is not anticipated in the Plan area at this time. However, should transit routes be extended to this area, these routes shall be limited to arterial and collector roads.
- 3.1.11 In order to facilitate pedestrian and bicycle movement in the Plan area and connections to neighbouring areas, potential pedestrian linkages are illustrated in Map 5. Pedestrian movement is to be accommodated through the provision of sidewalks along both sides of arterial and residential collector roads, and sidewalks on one side of residential local roads. Bicycle traffic may be accommodated through the construction of wider curb lanes on arterial roads, on the shoulders of rural roads, and/or the provision of separate asphalt trails. The pedestrian linkage shown over Highway 43 at Range Road 60 is not proposed as an at-grade crossing at Highway 43, but would be integrated with the ultimate flyover design for Range Road 60 as per the requirements of Alberta Infrastructure and Transportation.

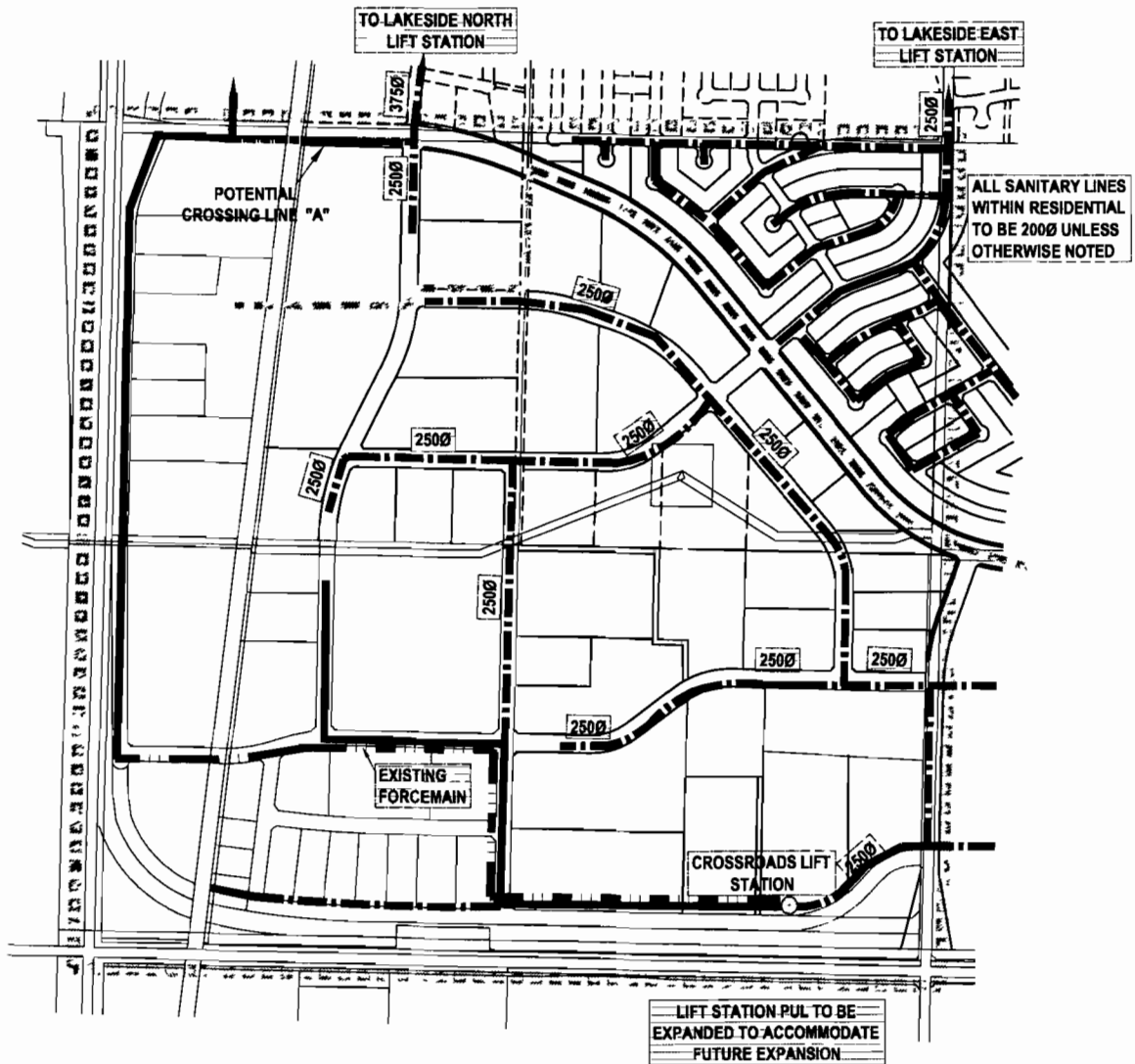
3.2 Sanitary Sewer

The sanitary sewer for the Plan area is serviced by three drainage basins. As illustrated in Map 6, two lift stations are proposed for the north portions of the Plan area. In addition, the existing Crossroads lift station located in the SE 13 is to serve the southerly portion of the Plan area. The overall sanitary plan, indicating the drainage patterns and which areas benefit from each lift station is defined in Map 6A.

Lakeside North Lift Station

The northwest portion of the Plan area will drain into the Lakeside North lift station. The development of this new lift station can occur by one of two methods:

1. Design the lift station to only handle the drainage basin as shown in Map 6A and potentially excess flows from the Crossroads area. Sewage from this area will then pump into an upgraded Clairmont force main which will need to be extended westerly along 100th Avenue.




CROSSROADS NORTH AREA STRUCTURE PLAN

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MAP 6 - Sanitary Sewer



SCALE N T S

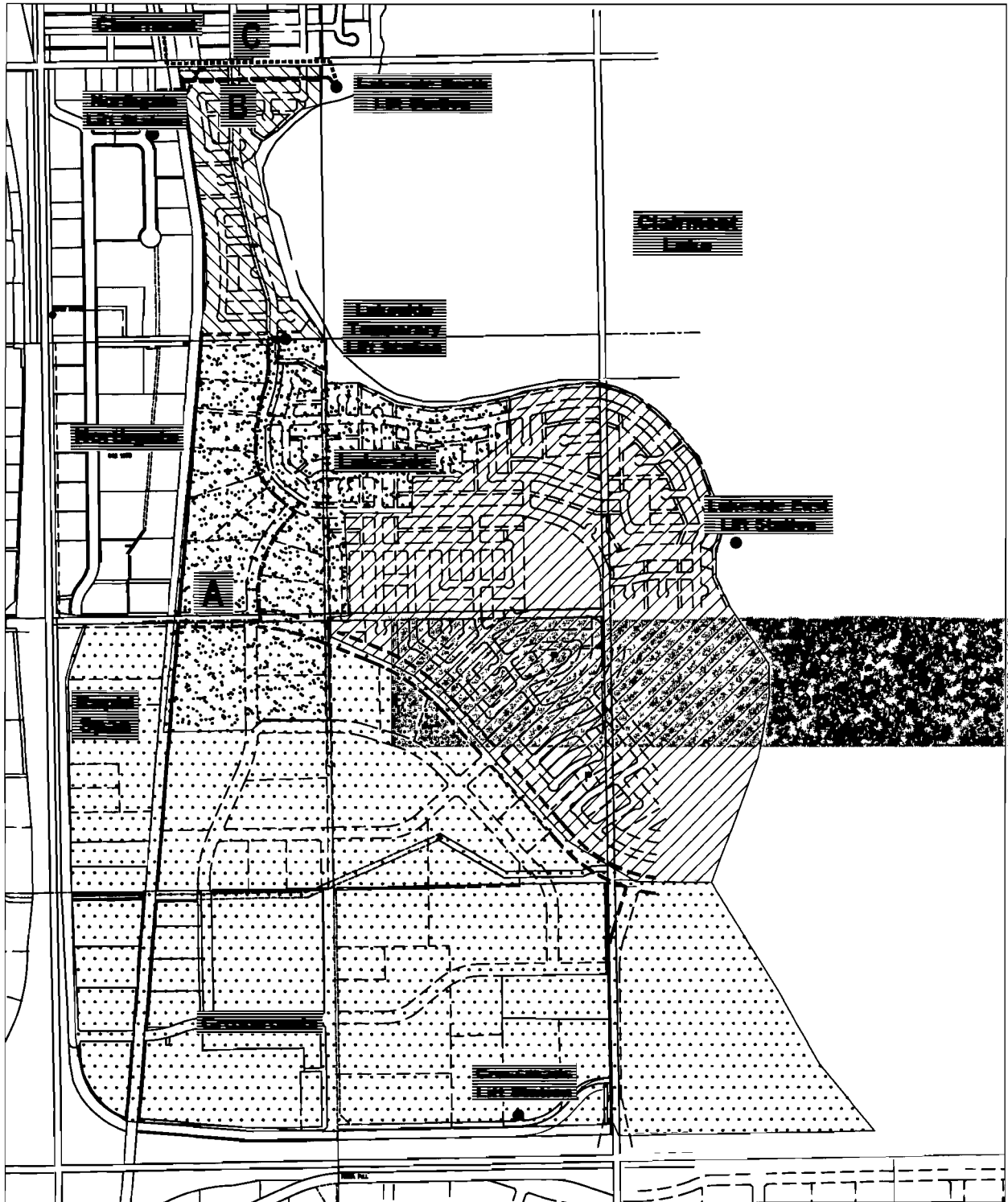
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|---|-----------------------|---|--------------------|
|  | PROPOSED SANITARY |  | EXISTING FORCEMAIN |
|  | EXISTING SANITARY |  | DRAINAGE BOUNDARY |
|  | EXISTING LIFT STATION | | |

 PLAN BOUNDARY



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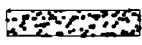
CROSSROADS NORTH AREA STRUCTURE PLAN

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MAP 6A - Sanitary Contributing Areas



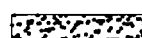
Contributing to Pipe
Oversizing and Pipe A



Contributing to
Temporary Lift Station if
Necessary



Contributing to Lakeside
East Lift Station and
Forcemain



Contributing to Lakeside
North Lift Station



SCALE N T S

BEIRSTO, LEHNERS, KETCHUM
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ISL



2. Design the lift station so it can be used as a regional lift station to combine the flows of various existing lift stations including Northgate, Lakeside East, Crossroads, the existing Clairmont lift stations and any temporary lift stations. This is consistent with previous sanitary sewage studies.

A final Sanitary Master Plan will provide a recommendation as to which option will be incorporated. Levies will need to be assessed based on the ultimate design that is approved. If the Lakeside North lift station is only designed for the Lakeside and Crossroads ASP areas, a levy of \$2,700/ha would need to be assessed to cover the costs.

Alternatively, development costs for the lift station could be recovered through an endeavour to assist.

If the County chooses to develop a regional lift station then it is recommended that the aforementioned levy of \$2,700/ha still be assessed, as well as those applicable under Bylaw 2657, which covers the costs of regional upgrades.

The Lakeside North Lift Station needs to take into consideration the full impact of flows from Crossroads. Should flows from Crossroads reach design rates it will be necessary to develop a relief line identified as Line A on Map 6A. This would split the flows between Northgate and Lakeside. The major trunk that captures the western flows in the Lakeside Plan has been oversized to accommodate the potential for accepting these excess flows. A cost recovery in favour of the Lakeside developers will need to be recovered from those benefiting lands identified in Map 6A, at a rate of approximately \$250/ha, or through an endeavour to assist.

It is likely that a temporary lift station may need to be constructed in the SW 24 at the Developer's expense if a right-of-way access across the NW 24 can not be secured. It may also be built if funds are not available to construct a regional system at the Lakeside North Lift Station. Sewage from this temporary lift station would be directed westerly into the Northgate system. The lift station should be designed to handle all the lands draining north from the S½ 24 as well as the lands in this Plan area. Recovery of costs for this temporary lift station would be assessed on an endeavour to assist basis.

Aquatera will monitor flows on a regular basis to determine the need and timing for the infrastructure proposed in this ASP.

Lakeside East Lift Station

The northeast portion of the plan area will drain into the Lakeside East lift station. Sewage from this area would be pumped either directly into the 100th Avenue force main or a potential regional lift station at Lakeside North. The development of this lift station would be developer driven and the resulting costs would be recovered by an endeavour to assist.

To accommodate the lands within the Plan area it will be necessary to oversize the sanitary lines in the Lakeside area. It is expected to cost \$16,240 to accommodate this and allow for the Plan area lands and the lands directly east of the Plan area, to be incorporated. Based on a benefiting area of 100.1 ha this would result in an endeavour to assist of \$162/ha.

Crossroads Lift Station

The southerly portion of the Plan area will drain into the existing Crossroads lift station. Sewage from this area is then pumped back via a force main over to Highway 2, and then drains northward to the Northgate lift station where it is then pumped into the force main directly to the sewage lagoon west of Clairmont.

At present there is an \$1,840/ha recovery charge associated with tying into the existing Crossroads system. These levies are based on recovering the costs of the existing Crossroad's lift station and force main. It is not based on the cost of upgrading the existing lift stations in the future or the cost of establishing a supplemental force main from Crossroads to Clairmont.

The lines through Northgate are too small to handle the design flows from all of Westmount, Precision, Northgate and Crossroads. As flows begin to reach that of design flows an alternative sewage route will need to be incorporated by creating the connection identified as link A in Map 6A. Costs of this as well as the over sizing in Lakeside will need to be recovered. The benefiting areas and costs are outlined in Section 4.6.

Lands south of Highway 2 also have the potential to tie into the Crossroads lift station, and if done will need to pay for any upgrades that are required. Upgrades could likely mean one or two force mains through the Plan area, likely via Bauman Road, to transport the sewage to the Clairmont lagoons. Levies will need to be assessed to accommodate this future growth as well as sufficient public utility lots if Bauman road is not going to be used for the force main development. The Clairmont Servicing Corridor Master Plan will identify / confirm the future routes and costs as well as relevant levies and fees.

- 3.2.1 All development in the Plan area will be serviced with municipal sanitary sewer as indicated on Map 6. Detailed design reports shall be provided by the developer for County / Aquatera review and approval at the subdivision review stage. Final design of sewer systems will be subject to the Clairmont Servicing Corridor Master Plan.
- 3.2.2 Existing private sewage disposal systems may remain in place until the municipal sanitary sewer system is installed. When these services are available, the existing development must connect to the new system at the owner's expense.
- 3.2.3 The sanitary sewer system will be sized to accommodate the area identified on Map 6.
- 3.2.4 Where the development of an area is contingent upon a servicing system to be developed in another area outside the Plan area, the land may not be developed until the servicing is available.
- 3.2.5 In addition to over-sizing fees and recovery charges, the County will collect offsite levies in the amount of \$13,248/ha to cover the costs of future improvements to the sanitary sewer system in Clairmont.

- 3.2.6 A larger public utility lot (PUL) will need to be taken in the location of the existing Crossroads lift station if it is determined in the sanitary master plan that this area will have a regional focus.
- 3.2.7 All development is subject to connection fees charged by Aquatera Utilities Inc.

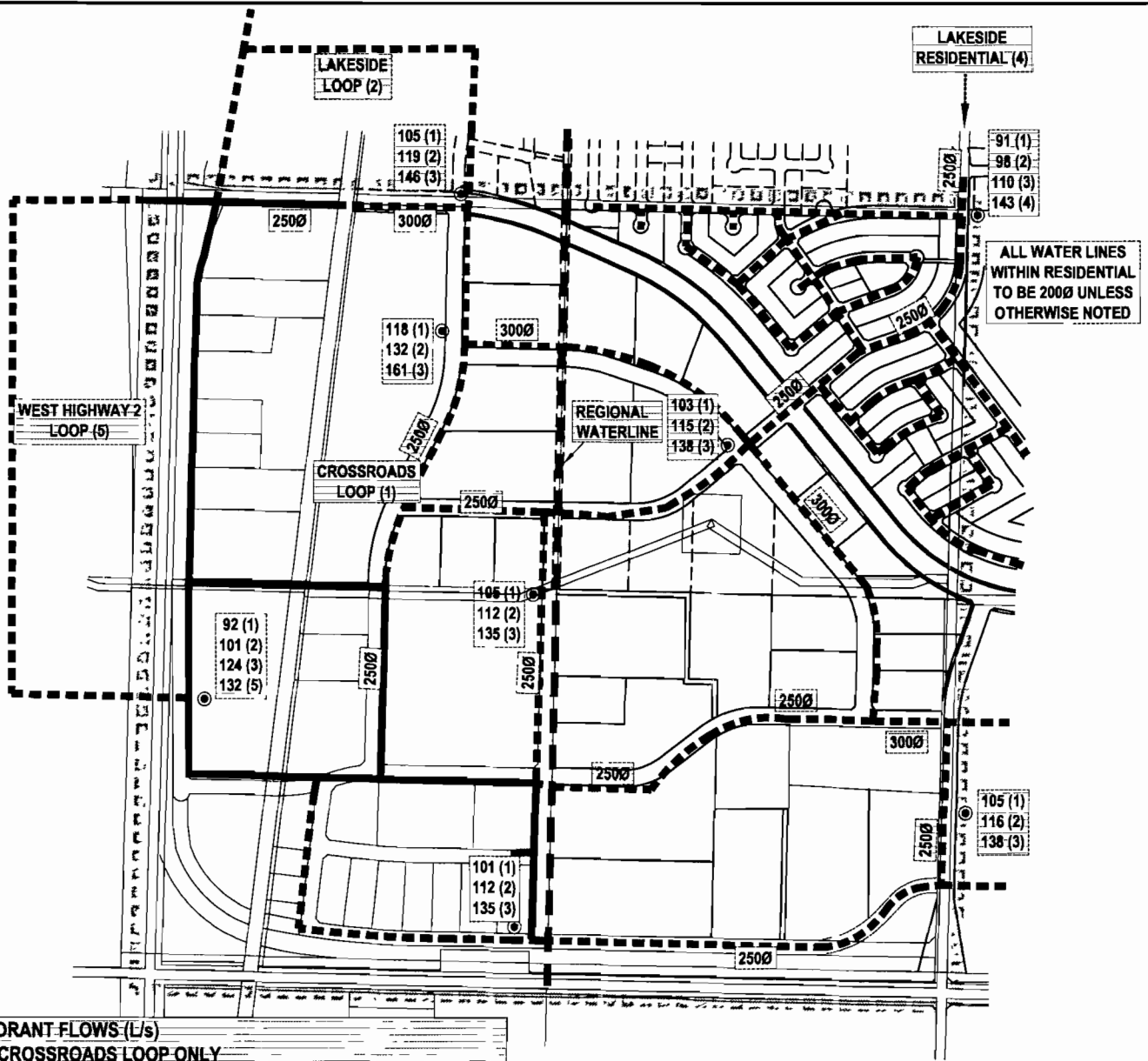
3.3 Water Supply

Water supply for the Plan area will come from crossover connections to water access points on the west side of the railway and from points in the south end of the Crossroads area. These cross connections will create a positive impact on water strength and hydrant flows.

A preliminary analysis shows there are sufficient flows to accommodate the 1200 IGPM (95 LPS) required by the County. In some cases, improvements are required to achieve these levels. The flows are sufficient on the west end but become progressively weaker as one moves to the east and south. It is recommended that looping through to Crossroads occur in the early stages of development. This will assist flows in the Crossroads area and give redundancy to the system in the event of a failure. In addition, upgrading the water system to a 300mm line from the Clairmont pumphouse to Northgate Industrial Park will have a significant impact on flows.

Map 7 indicates the flows in different areas and the improvements that will occur with different development options.

- 3.3.1 If fire flows are insufficient to meet FUS guidelines or building codes then alternative internal pumps and sprinklers may be needed to mitigate risks.
- 3.3.2 The County may establish an offsite levy to assist in providing infrastructure required to service this development.
- 3.3.3 The County will endeavour to require benefiting land owners to compensate developers for expenses incurred in providing municipal services to the area.
- 3.3.4 All development in the Plan area will be serviced with municipal water as indicated on Map 7. Detailed design reports shall be provided by the developer for County / Aquatera review and approval at the subdivision review stage. Final design of water systems will be subject to the Clairmont Servicing Corridor Master Plan.
- 3.3.5 Existing private water systems may remain in place until the municipal water system is installed. When the services are available, the existing development must connect to the new system at the owner's expense.
- 3.3.6 The water system will be sized to accommodate the area identified on Map 7.
- 3.3.7 A newly constructed regional water transmission line bisects the Plan area along the quarter line. No distribution or service connections shall connect to this line. The easement containing this line should be converted to a PUL through the subdivision



ALL WATER LINES WITHIN RESIDENTIAL TO BE 200Ø UNLESS OTHERWISE NOTED

HYDRANT FLOWS (L/s)	
(1)	CROSSROADS LOOP ONLY
(2)	WITH LAKESIDE LOOP
(3)	WITH LAKESIDE LOOP & CLAIRMONT UPGRADE
(4)	WITH 1-3 AND ADDITIONAL LOOP TO LAKESIDE RESIDENTIAL
(5)	WITH 1-3 AND LOOP WEST OF HIGHWAY 2

CROSSROADS NORTH AREA STRUCTURE PLAN

COUNTY OF GRANDE PRAIRIE NO. 1

MAP 7 - Water Distribution System



SCALE N T S

- PROPOSED WATER LINE
- EXISTING WATER LINE
- REGIONAL WATER LINE

———— PLAN BOUNDARY



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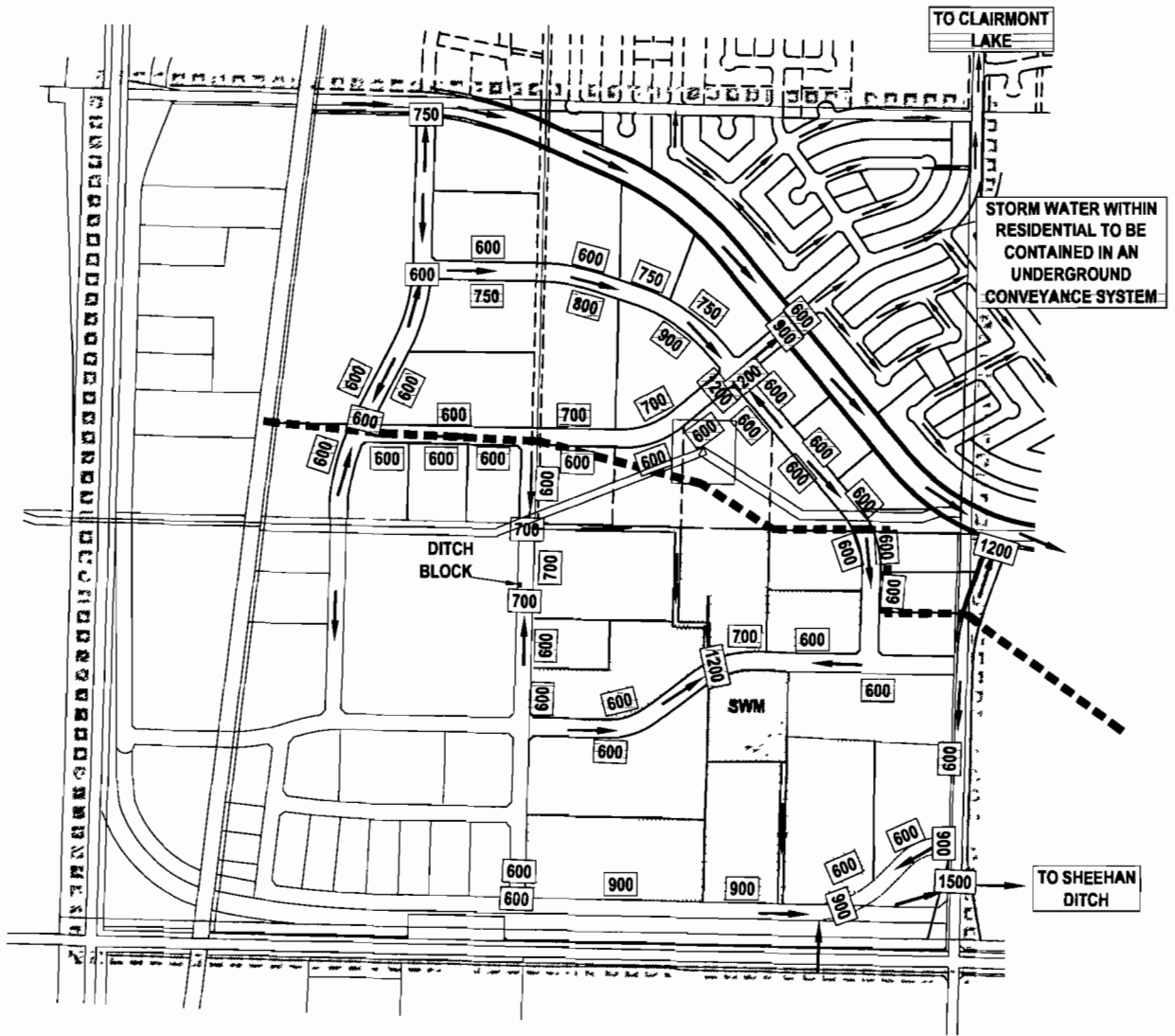
process, and be of sufficient size to include the potential accommodation of a sanitary force main in the future.

3.4 Storm Water Management

Storm water management shall be required for quantity and quality control. Quantity control is required to reduce the potential impacts of urban storm water run-off on drainage ditches and watercourses (i.e. higher rates of erosion), and limit the potential for flooding on developed lands during major storm events. Quality control is required to mitigate any potential for environmental contamination of nearby bodies of water.

Storm water from the Plan area ultimately drains downstream into Clairmont Lake. It is intended that the lands in the Plan area use Clairmont Lake for retention purposes. Ducks Unlimited operates a weir system at the outfall of the lake which is successfully being used to regulate flows and maintain lake levels. This has proven to be an acceptable method in adjacent areas for mitigating the impacts of increased flows on the downstream wetlands. The combination of a natural wetland that acts as an environmental cleansing agent as well as the incorporation of a grassed drainage ditch proves to be quite effective in providing water quality management as well as quantity management. Should Alberta Environment require further quality management, a wet pond at the last leg of the drainage course prior to the water entering the lake would be required. This would only be needed if the development scenario is converted to an urban model with underground storm sewer and curbs. The cost of the wet pond would then need to be included in the upgrade cost. Measures proposed to limit erosion and sediment transport will be addressed prior to approval of any development requiring underground storm sewers.

- 3.4.1 Storm water management shall be required for quantity and quality control. Storm drainage will be provided as indicated on Map 8, and is part of a larger drainage system as illustrated on Map 8A.
- 3.4.2 The major drainage course (1:100 year events) as identified in Map 8 is to be sized to handle flows at 1:5 year rates with overflow requirements for the 1:100 year event. In this major course it is important to maintain flows within the road boundaries. To accomplish this it is important that overflows across approaches and roads be designed to handle excess water. In cases where this cannot occur, culverts must be designed to handle the 1:100 year event. This overflow will also assist in situations where culvert freeze-up occurs. Ditches in the major course need to have a minimum distance of 0.75m from the back of slope to private property. Overland flows must be analyzed based on existing soil conditions, velocity, and quantity to ensure that erosion is limited in all major drainage courses. All ditches that exceed 2% in grade require erosion control measures such as silt traps, rip-rapped corners, hydro-seeded ditch bottoms or other approved erosion prevention methods. Each developer will be responsible for upgrading their ditches in their respective developments. Additional information pertaining to storm water flows is available in the report entitled "Storm Drainage Analysis – Crossroads Development Phase 2" or any other subsequent site-specific reports.



CROSSROADS NORTH AREA STRUCTURE PLAN

COUNTY OF GRANDE PRAIRIE NO. 1

MAP 8 - Stormwater Management



SCALE N T S

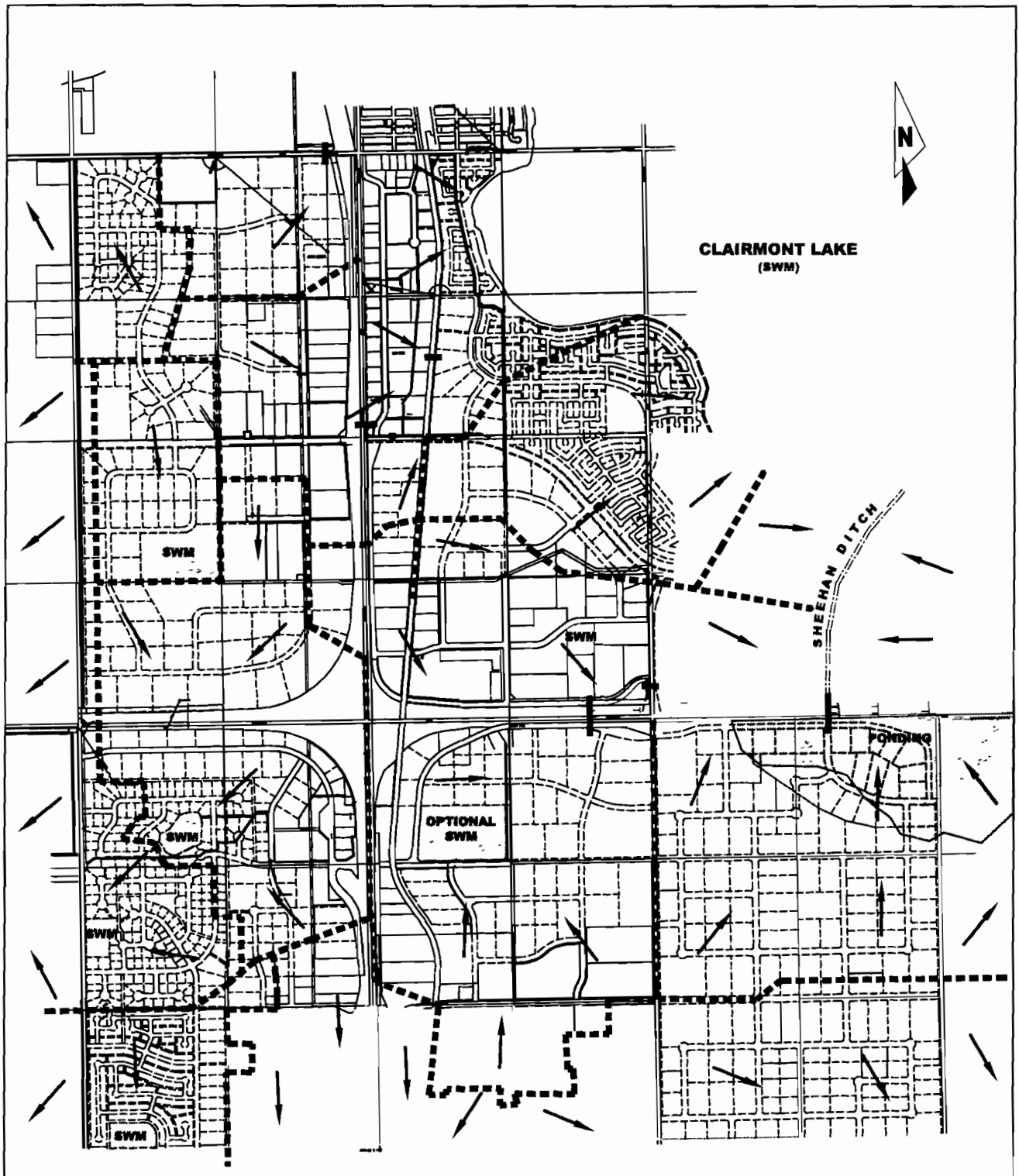
- DRAINAGE DIRECTION
- PROPOSED STORM WATER MANAGEMENT POND
- DRAINAGE EASEMENT MAY BE REQUIRED
- 600 PROPOSED CULVERT
- DITCH BLOCK
- DRAINAGE BOUNDARY

PLAN BOUNDARY



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COUNTY OF GRANDE PRAIRIE NO. 1

MAP 8A - Overall Stormwater Plan

- DRAINAGE BOUNDARY**
- DRAINAGE DIRECTION**
- █ REQUIRES UPGRADED CULVERT CROSSINGS**

SWM STORMWATER
MANAGEMENT
POND

- 3.4.3 The County may implement a review process at the time of development permit to ensure businesses wishing to locate within the drainage basin do not impose any undo or unreasonable environmental risk to the area as part of their normal operations. Should there be a suspicion of risk the County will require a site specific, on-site storm water management plan, to minimize any spill related incidents. Based on the nature of the zoning only certain areas will be at elevated risk of this occurring.
- 3.4.4 The storm water pond located in the SE 13 will be designated as a public utility lot. A portion of lands above the 1 in 5 year storm event may be considered for municipal reserve provided such lands meet the County of Grande Prairie's park needs and that the developer provides a park development plan for such land. In addition, those portions considered for MR credit must be graded at no more than a 1:7 slope (i.e. 14% steepest slope).
- 3.4.5 The only areas that are proposed for an urban drainage model are the residential lands in the northeast portion of the Plan area. Downstream of any underground drainage model it is recommended that a wet pond be incorporated to capture any pollutants. Funds to recover the cost of such a pond and any potential storm sewer over sizing would be best suited to a levy structure. This levy should be charged to residential developments using an urban drainage model and a policy should be implemented to accommodate this prior to any such development occurring.
- 3.4.6 A storm drainage master plan for the drainage areas will be prepared for the area prior to beginning in the second phase of any development. The plan will identify development standards for any wet ponds and all required drainage passageways that need to be protected and the timing of the required improvements. The improvements must be done no later than the time the land is accepted as municipal reserve. This Master Plan will consider, and provide recommendations for, the entire drainage basins impacted by development in this plan area and identify how storm water will be managed within the drainage basins at build-out. This may involve modeling of storm water run-off to ensure that downstream areas will be adequately protected from flooding in later years and recommend levies that will address the costs of downstream improvements.
- 3.4.7 Throughout the Plan area it is conceivable, based on the topography, that PULs or drainage easements will be required to properly handle overland drainage.

3.5 Shallow Utilities

- 3.5.1 All shallow utilities (natural gas, power, telephone) are to be extended into the Plan area by the individual franchise holders as required. ATCO Gas requires a 10 metre front lot easement for industrial lots.
- 3.5.2 Any overhead power lines located adjacent to residential areas are to be installed underground at the Developer's expense.

3.6 Lot Grading

- 3.6.1 A lot grading plan will be prepared by the Developer in accordance with County standards, with the intent that all future building projects conform to the grading plan.
- 3.6.2 The grading plan is intended to ensure that surface drainage from all lots is directed to the roadside ditches and storm retention ponds as provided in Section 3.4.
- 3.6.3 Special consideration will be needed to avoid lake level variations as described in Section 3.4. Associated concerns shall be addressed prior to residential subdivision and development through the findings of a storm water management report for the area.

3.7 Oil and Gas Activity

- 3.7.1 All oil and gas pipelines in this Area Structure Plan shall be identified and separated from adjacent lots by incorporating them into public utility lots registered to the County of Grande Prairie No. 1.
- 3.7.2 In order to protect the pipeline network from damage, it is recommended that road crossings of pipeline rights-of-way be kept to a minimum.
- 3.7.3 Developers shall submit detailed design drawings to the relevant affected pipeline company prior to construction within the subject development area. Crossing agreements may be required between the developer and the affected pipeline company where crossings of roadways, parking areas and similar features over pipelines occur.
- 3.7.4 All gas wells, facilities and pipelines and associated setbacks shall be identified on all Area Structure Plan land use maps and relevant subdivision plans.
- 3.7.5 Developers shall be required to register caveats on title of all affected lots recognizing the presence of oil and gas activity (i.e. wells and pipelines).
- 3.7.6 The County of Grande Prairie No. 1 is opposed to any further expansion or conversion of oil and gas activity in the Plan area and to the extent that it has jurisdiction, prohibits all future oil and gas activity within the ASP boundaries, particularly sour gas activity. Existing operational wells are hereby recognized but are encouraged to complete activity as soon as possible to limit any future potential conflicts between these well operations and future development in the area.

4.0 IMPLEMENTATION

4.1 Phasing

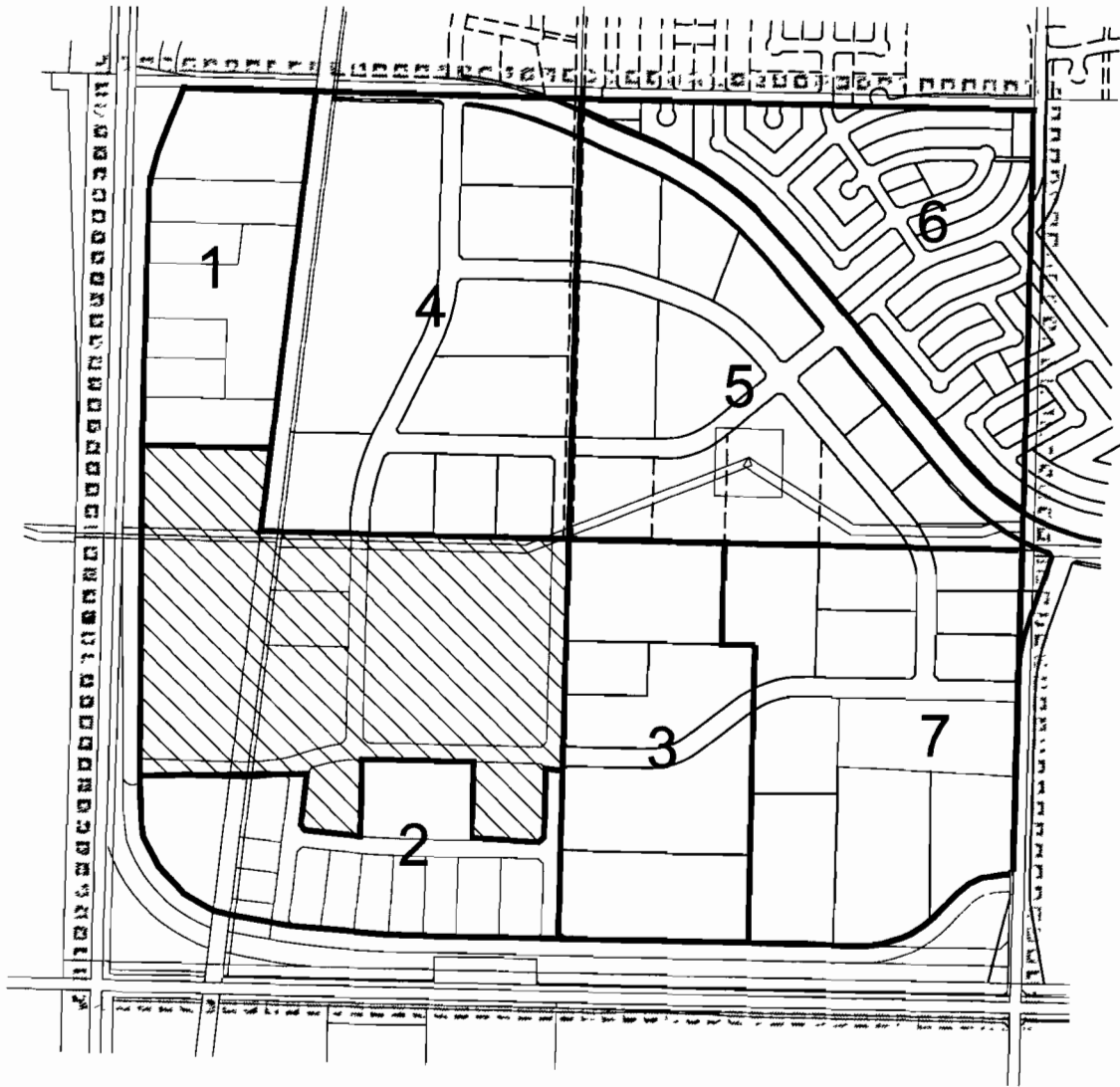
The proposed phasing of development in the Plan area will be dependent on market conditions and the logical extension of municipal services. A tentative phasing plan is proposed on Map 9.

4.2 Proposed Zoning

Proposed zoning for the Plan area is identified in Map 10. The area slated for residential development will be zoned under the Rural Residential RR-2 District of the Land Use Bylaw. The industrial area will be zoned as Rural Medium Industrial (RM-2) and Highway Industrial (RM-4). In the event commercial zoning is considered pursuant to Policy 2.3.6, the Comprehensive Commercial (CC) District will be applied. All zoning changes will be made in advance of subdivision approval.

4.3 Subdivision and Development

- 4.3.1 All developers shall be required to enter into development agreements with the County as a condition of subdivision approval. The matters to be included in these agreements will include but not be limited to the provision of roads and municipal services, and the payment of off-site levies.
- 4.3.2 Detailed design reports, engineering drawings and specifications for roads, water, sanitary sewer, and storm drainage shall be prepared by the developer and approved by the County prior to subdivision approval on the subject lands.
- 4.3.3 The lot sizes and yields identified in this Plan are conceptual and may be altered at the time of subdivision without requiring an amendment to this Plan provided lot sizes remain consistent with the relevant District requirements contemplated in this ASP.
- 4.3.4 The resubdivision of lots in the Plan area may be supported provided that the resulting lot sizes meet the minimum requirements of the Land Use Bylaw, and the capacity of servicing systems is not negatively affected. Where possible, buildings should be sited in a way that allows for the future resubdivision of lots.
- 4.3.5 Where municipal infrastructure is developed that provides a benefit to lands outside of the plan area, the County will endeavour to assist in collecting a portion of the costs of the infrastructure from the said lands that benefit from the infrastructure at the time the lands that benefit initiate subdivision or development activities.
- 4.3.6 All levies identified in the plan shall be collected at the time of subdivision.



CROSSROADS NORTH AREA STRUCTURE PLAN

COUNTY OF GRANDE PRAIRIE NO. 1

MAP 9 - Phasing



SCALE N.T.S.

1 DEVELOPMENT PHASE (TENTATIVE)



EXISTING DEVELOPMENT

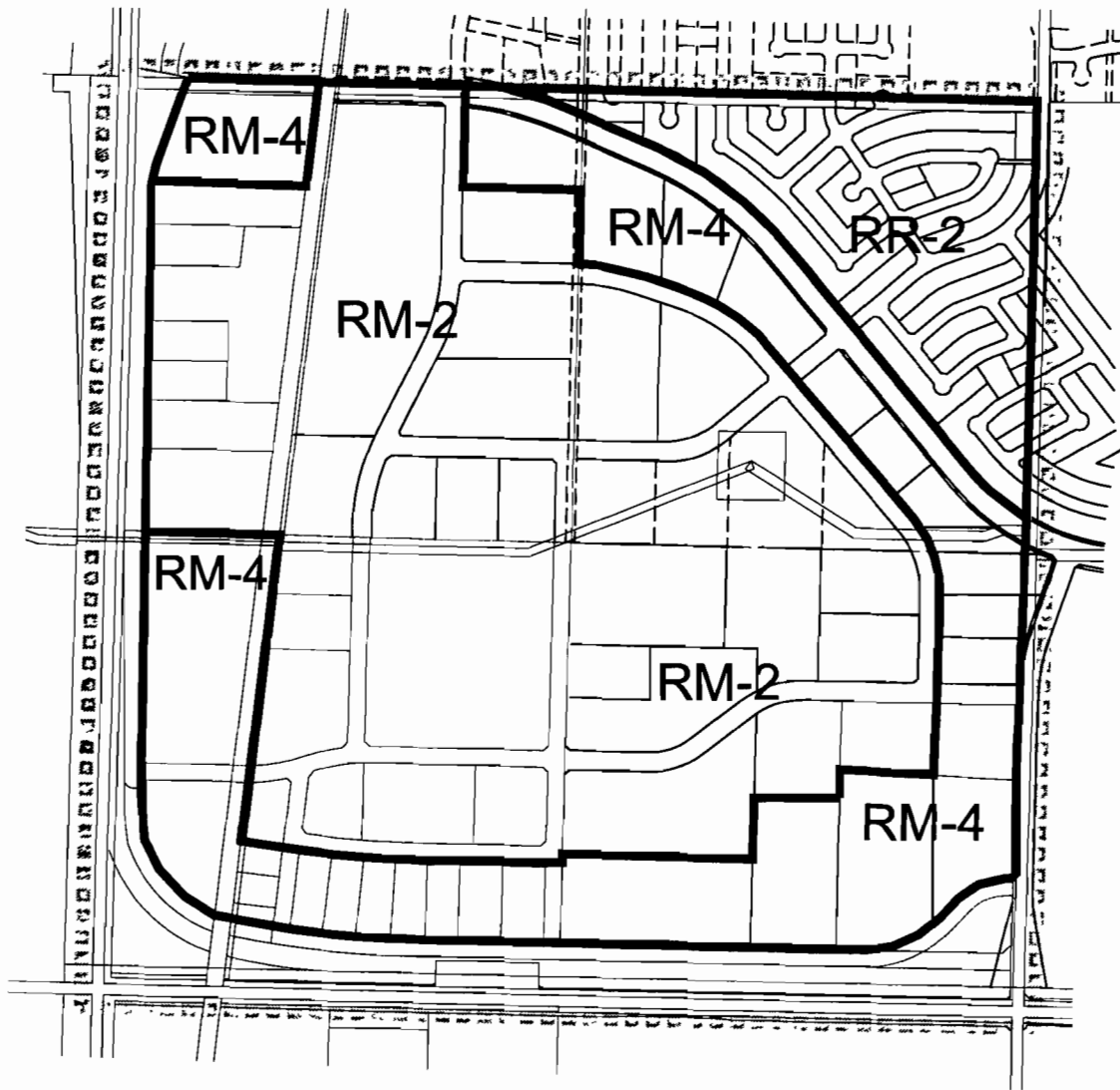


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**CROSSROADS NORTH AREA STRUCTURE PLAN
COUNTY OF GRANDE PRAIRIE NO. 1**

MAP 10 - Proposed Zoning



SCALE N.T.S.

RM-2 RURAL MEDIUM INDUSTRIAL

RM-4 HIGHWAY INDUSTRIAL

RR-2 RURAL RESIDENTIAL

 **PLAN BOUNDARY**



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4.4 High-Visibility Sites

4.4.1 Notwithstanding the requirements contained in the County's Land Use Bylaw³, the following design guidelines are to be applied to all developments in the Plan area located along arterial roadways and other high-visibility corridors:

1. That portion of any lot abutting a major roadway identified as a high-visibility corridor is to be landscaped to the satisfaction of the County. The landscaped area is to consist of no less than 5% of the area of the subject lot.
2. All development permit applications submitted to the County shall include a landscaping plan in accordance with Section 3.16 of the Land Use Bylaw.
3. Any outdoor storage areas that abut a major roadway shall be fenced and/or screened from view to the satisfaction of the County. Screening may take the form of fencing, berming soft landscaping or a combination of these.
4. All development permit applications submitted to the County shall include building elevation drawings illustrating proposed finishing materials, colours and signage.
5. All principal buildings are to be developed on permanent foundations. In addition no soft-walled structures will be permitted as principal buildings in high-visibility areas, but may be considered for approval as secondary buildings in approved outdoor storage areas.

4.5 Benefiting Areas

4.5.1 Where municipal infrastructure is developed that provides a benefit to lands outside of the Plan area, the County will assist in collecting a portion of the costs of the infrastructure from the said lands that benefit from the infrastructure at the time the lands that benefit initiate subdivision or development activities. Areas that are subject to outside contributions are outlined in Map 11 and a corresponding levy summary is provided in Table 3.

4.5.2 The efforts to collect costs from benefiting areas will expire within 20 years of the initial approval of this plan. Developers who develop in a particular quarter will be responsible for their entire contribution for the quarter at the time of the first subdivision.

³ As an alternative to these design guidelines, the County may instead develop a high visibility site overlay for inclusion in the Land Use Bylaw.

Table 3 – Levies and Endeavours to Assist

Infrastructure Development	Areas	Rate
Crossroads lift station & force main ^{4,5}	B,C,D,E,F,G,H	\$1,840/ha
Sanitary over sizing in Crossroads ⁵	B,C	\$5,812/ha
Extension of Crossroads lift station ⁵	E,F,G,H	\$1,312/ha
96 th Street paving along the SE 13 ^{4,5}	C,D	\$262/m
96 th Street utilities along the SE 13 ^{4,5}	D	\$237/m
SE 13 service road ⁵	D,E	\$585/m
Range Road 60 Paving ⁵	C,D,E,F,H,I	\$3,805/ha
Range Road 60 and Highway 43 culverts	S	\$505/ha
Hwy 2 – 84th Avenue signalization	A,K,B,P,Q	TBD (1/2 Cost)
Hwy 2 – 84th Avenue intersection lighting	A,B,K,P,Q	\$125/ha
84th Avenue south of SW 24 ^{5 (Partial)}	A,Q,P,K,B	\$3,805/ha
Temporary lift station SW 24	P,O,K	\$2,700/ha
Lakeside West sanitary over sizing	A,B,R,C,D,E,F,G,H	\$250/ha
Link A as shown in Map 6A	A,B,R,C,D,E,F,G,H	\$490/ha
Lakeside East lift station and force main	N,L,M	TBD
Lakeside East sanitary over sizing	L,M	\$162/ha
Lakeside East wet pond and storm pipe over sizing	N,L,M	TBD
Northgate Lift Station infrastructure and upgrades	A,Q	\$4,863/ha
Traffic Signals (Bauman Road and 98th Street)	A,Q	\$4,048/ha
Crossroads lift station upgrade ⁶	S,T	\$ 4,863/ha
Railway Crossing – Bauman Road	All Areas N of Hwy 43	\$468/ha
Levies or Secondary Contributions⁷		
Bylaw 2657 – Levy (Clairmont lagoon upgrade) ⁸	All areas	See latest Bylaw
Transportation Levy ⁹	All areas	See latest Bylaw
Aquatera Water Fee ¹⁰	All areas	Service size

TBD – To Be Determined

⁴ Since Crossroads Developments Inc. has already developed much of the infrastructure and paid for it, they are not included in the recovery. Their area, however, was used to determine the cost recovery rate so they would pay their share of the costs.

⁵ These are the recoverable costs indicated in the Servicing Agreement for Crossroads Phase 2.

⁶ This is the equivalent of the Northgate Lift Station levy which is to be used for the Crossroads Lift Station upgrade and force main construction until the Sanitary Master Plan recommends a new rate.

⁷ Secondary contributions are those that are above what is required to pay for the existing infrastructure but are needed to pay for future upgrades and expansion. These numbers could change after a sanitary master plan is completed.

⁸ Assumes levy will be expanded to include all those lands that will ultimately drain to Clairmont. An adjustment may be necessary to accommodate for the fact that water supply comes from Grande Prairie for lands south of Highway 43. This levy is paid for at the building permit stage.

⁹ This levy is charged to collect for regional roads. It shall not apply if regional roads are being constructed by the developer.

¹⁰ This fee is a function of service size and is charged at the building permit stage.

4.6 Levies

4.6.1 All levies identified in the plan shall be collected at the time of subdivision.

4.6.2 In addition to the levies identified in this plan, developers may be required to pay a connection fee to Aquatera Utilities Inc.