
WESTWINDS in MORINVILLE

Area Structure Plan



March 2004

**Westwinds in Morinville
Area Structure Plan**

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1. INTRODUCTION

1.1 Purpose

This Area Structure Plan has been prepared on behalf of LANDREX (Morinville) Inc. to provide a framework for the subdivision and development of that part of the South ½ of 33-55-25-W4M that is located in the Town of Morinville. The plan area comprises some 68 hectares, and will be developed as a comprehensive *village* type commercial residential neighbourhood. All but 2.48 hectares of the area is owned by LANDREX.

The Area Structure Plan meets the requirements of Section 633 of the Municipal Government Act. As such, it describes future land uses, potential population levels, transportation and infrastructure requirements, and the sequence of development.

1.2 Location Context and Background

The plan area is located in the southwest quadrant of the Town of Morinville, and is defined by:

- Highway 2 to the west
- the CN Westlock rail line to the north
- Morinville Road (100th Street) to the east
- the ¼ section line to the south.

Figure 1 shows the boundaries of the area, and its location within the Town.

The subject lands were annexed to the Town in 1982 for industrial development purposes. However, no development has occurred, and industrial development south of the CN line is limited to the Morinville Industrial Park located in the NW ¼ of 27-55-25-W4M.

Some 20 years after annexation, agriculture remains the predominant land use in the plan area. As such, the Town has recently amended its statutory plans to stimulate urban development of the lands by allowing for a mix of commercial and residential uses.

1.3 Policy Context

The Westwinds in Morinville Area Structure Plan complies with the Town of Morinville's Municipal Development Plan Bylaw No. 19/98, as amended by Bylaw No. 30/2002. The amendment allows for the arterial commercial and residential uses noted above.

Until recently, the site was included in the Westmor Development Park Area Structure Plan. However, to ensure compliance between its statutory plans, the Town amended the Westmor Area Structure Plan to repeal all reference to the South ½ of 33-55-25-W4M. The amended Westmor Plan now applies only to the lands located directly south of the plan area, legally described as the North ½ of Section 28-55-25-W4M. The amended plan allows for medium and light industrial development of these lands. Proper buffering to mitigate any conflicts between potentially incompatible land uses will be required along the interface of the Westmor lands and Westwinds.

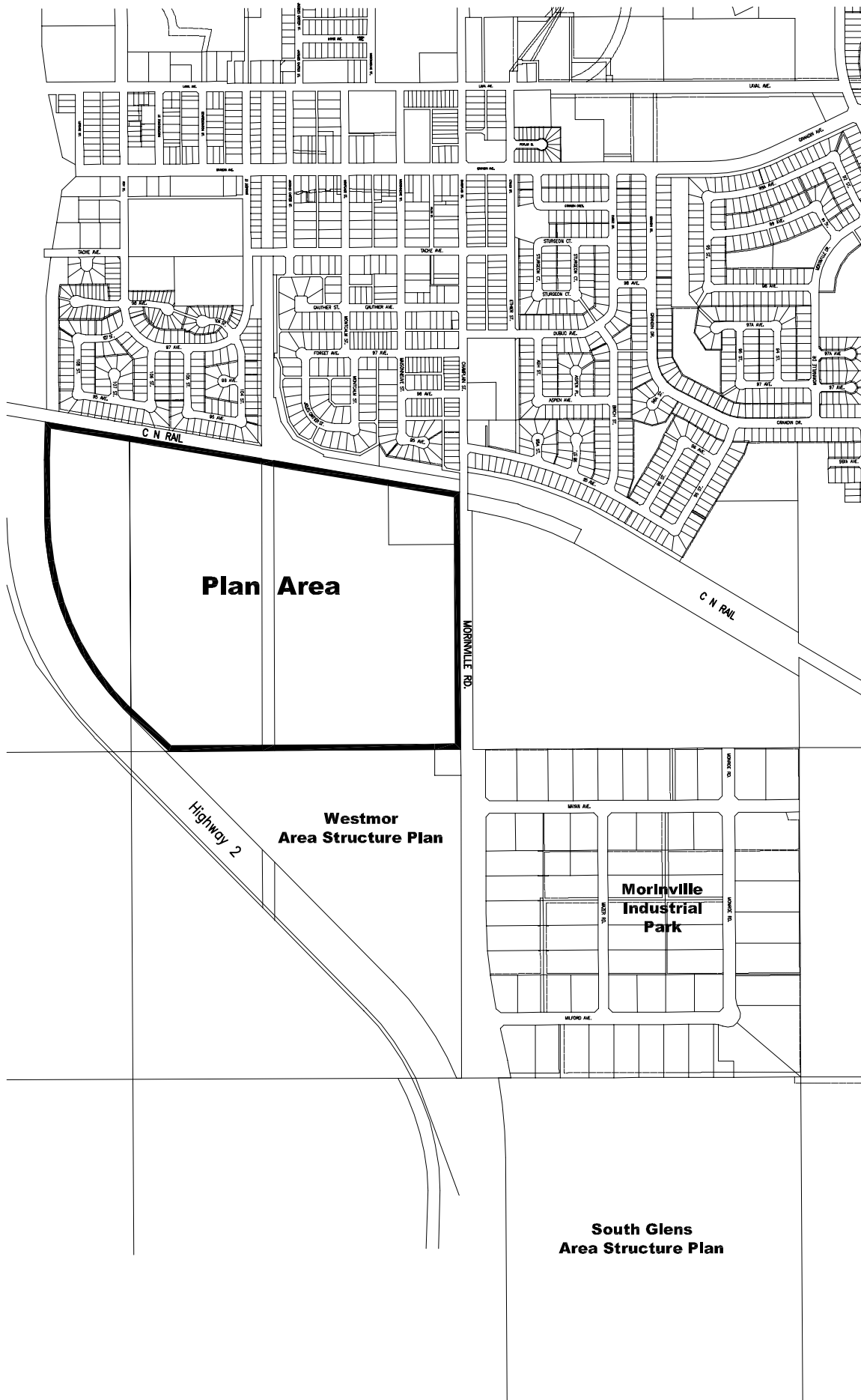
The plan area is zoned Urban Reserve by the Town's Land Use Bylaw No. 4/2003. The purpose of this District is *to protect significant tracts of vacant land for future urban development, and to allow for a limited range of low intensity uses which are consistent with that intent*. The Land Use Bylaw will need to be amended at the time of subdivision pursuant to the uses approved under this plan.

Westwinds of Morinville Area Structure Plan

Town of Morinville

Figure 1

Locational Context



Not To Scale
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2. EXISTING CONDITIONS

2.1 Surrounding Land Uses

Existing uses surrounding the plan area are shown on Figure 1 and include:

- To the north, the CN Westlock rail line and two mature low density residential neighbourhoods that are bisected by the CN spur line to Legal. The mature neighbourhoods encompass recreation and park facilities. The CN Westlock line is designated a Secondary Main Line but accommodates less than four trains per day (1995 data), while the CN Legal Line accommodates one train per week. As such, any negative impacts generated by the relatively low volumes of train traffic, such as noise, are minimal.
- To the east, Morinville Road and Urban Reserve lands that are being used for crop production. Further east, the lands are also being farmed but future residential development is proposed. Morinville Road (100th Street) functions as a minor arterial roadway.
- Morinville Business Park is located southeast of the plan area. This business park was developed in the 1970's and still contains some vacant parcels. The South Glens Area Structure Plan applies to the lands located south of the Business Park. Similar to the Westwinds Plan, South Glens allows for a mix of residential and commercial uses.
- To the south, the above noted undeveloped Westmor Area Structure Plan lands. These lands are zoned Urban Reserve and Direct Control District (DC-3-3) under the Town's 2003 Land Use Bylaw. The lands are being farmed.
- To the west, across Highway 2, the lands are contained in Sturgeon County and are under agricultural production. Some low lying areas and a dugout are evident.

The grade separated interchange of Highway 2 and 100th Avenue/ Highway 642 is located to the northwest of the plan area.

2.2 Existing Land Use

As is noted in Section 1.2, the dominant land use within the plan area is agriculture, with a focus on grain and forage crop production.

Excepting a 2.48 hectare (6.12 acre) farmstead located in the north east corner of the area that has been subdivided out of the ¼ section (Lot A, Plan 7520116), the plan area is undeveloped and unencumbered by any facilities or legal instruments. An abandoned north/south CN right-of-way that extends through the centre of the plan area has been purchased by LANDREX, and will be integrated into the development concept.

Road widening for Morinville Road has been provided on the east side of the right-of-way. Additional widening will be required on the west side.

2.3 Natural Features

Based on a recent topographic survey, the plan area is described as being generally flat with an overall grade of about 2.0 metres. The lands slope down from northwest to southeast. However, a 2.0 to 3.0 metre high ridge runs north/south through the centre of the area creating some variation in the landscape. Because the lands are cultivated, very little natural vegetation remains. Also, no low wet areas exist although some small depressions are evident.

J.R. Paine & Associates has undertaken a preliminary assessment of the soil conditions throughout the plan area. The assessment concludes that the site is suitable for residential and commercial development. The topsoil is about 225 to 300 millimetres thick and is underlain by clay till, coal and shale. Some areas of water bearing coal exist at depths that may impact underground utilities. These conditions will need to be considered when preparing detailed engineering designs.

2.4 Implications for Future Development

The existing conditions result in the following implications for future development.

1. The well defined boundaries of the plan area create an opportunity to design a relatively self-contained and sustainable mixed-use neighbourhood.
2. The existing mature neighbourhoods located north of the plan area create opportunities for compatible residential development within the area. However, the CN Westlock line creates a barrier to any form of physical interaction between these areas, such as trail connections, unless a crossing agreement can be negotiated with CN.
3. Although CN's setback and noise attenuation guidelines for a Secondary Main Line should be recognized in developing the subject lands, the low traffic volumes on this line also should be recognized in designing suitable berms and noise attenuation features. Regardless, proper fencing will be required for safety purposes.
4. Intersection spacing proposed along Morinville Road should recognize the arterial status of this road. Typically, a minimum separation distance of 200 metres is required between intersections.
5. Future residential development will need to be properly buffered along the south side of the plan area to avoid potential conflicts with the industrial development approved under the Westmor Area Structure Plan.
6. An appropriate setback along Highway 2 will be required to the satisfaction of the Town of Morinville and Alberta Transportation. The northwest corner of the plan area is particularly affected by highway related nuisance factors, such as noise, because of its proximity to the overpass. A Noise Attenuation Study will be required at the time of subdivision.
7. The only existing development within the plan area is the farmstead located in the northeast corner with access onto Morinville Road. Because the farmstead is located on the periphery of the plan area and does not rely on access from within the plan area, the farmstead will not impact the logical and orderly development of the area. Furthermore, development within the plan area will not adversely affect the 2.48 hectare farmstead.
8. The ridge that extends though the centre of the plan area provides an opportunity for creating a more interesting and attractive residential subdivision design. The relatively flat topography of the balance of the plan area and the existing soil conditions will need to be considered in properly locating storm water ponds and municipal services.

The foregoing implications are recognized by the Development Concept that is shown on Figure 2 and is described in Section 3.

3. THE DEVELOPMENT CONCEPT

3.1 Development Objectives and Policies

The primary objective of the Westwinds in Morinville Area Structure Plan is to create a viable, comprehensively designed mixed-use neighbourhood that displays a village type ambience, based on its well defined boundaries. These boundaries provide an opportunity to create a unique identity within the neighbourhood, and encompass it with *ribbons of green* that contain linear recreation trails that link significant park and open space features. The development concept that is shown on Figure 2 reflects this primary objective.

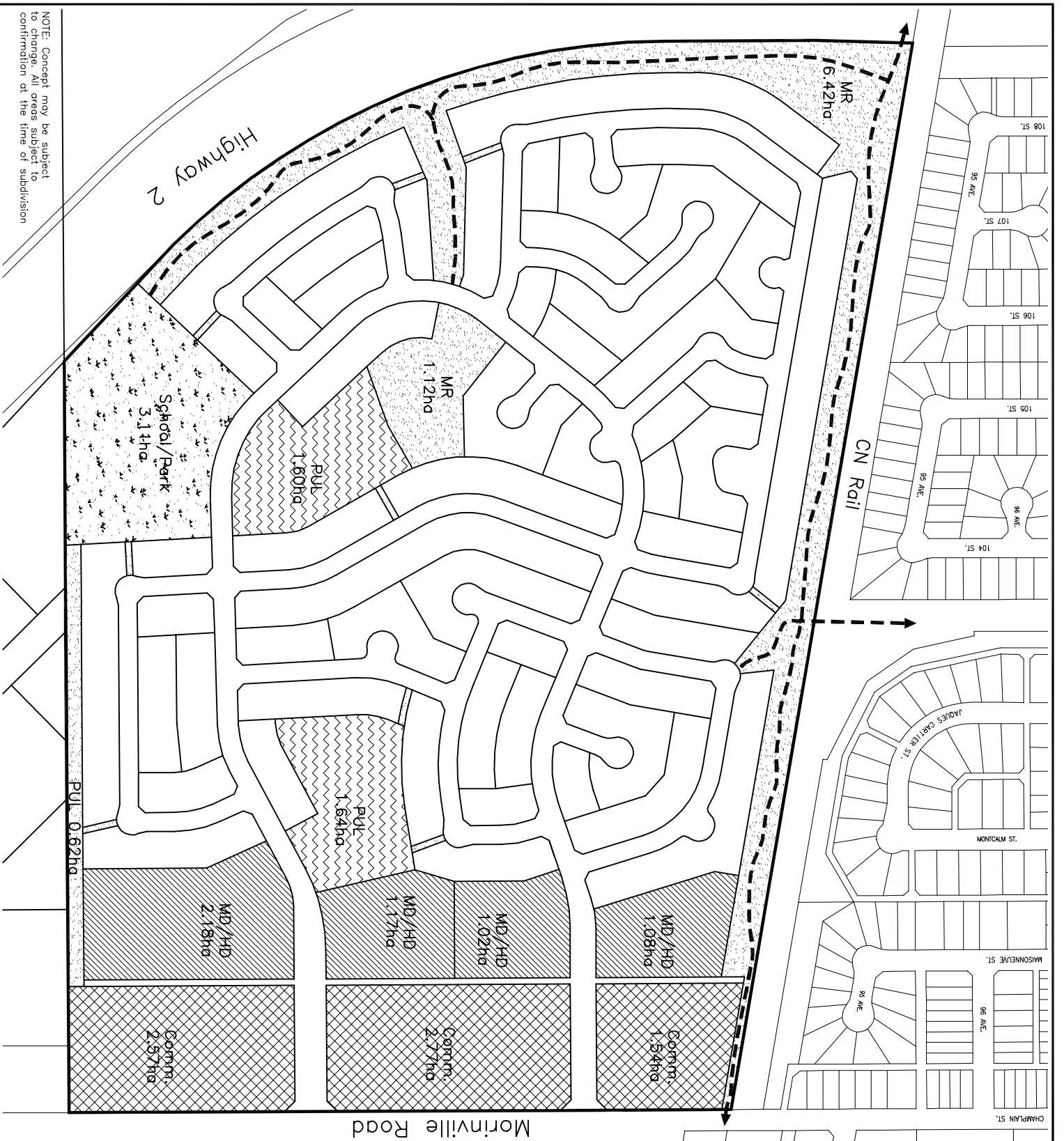
Specific policy objectives of the Area Structure Plan are:

1. To create the opportunities for a *sustainable* residential neighbourhood that displays an individual identity with a village type atmosphere, but that is linked to the balance of the Town to allow for community interaction.
2. To provide a *meaningful* choice of innovative and conventional housing options, from small single detached type homes to high density rental apartments, that cater to a range of income, age and social groups.
3. To provide opportunities for strategically located arterial commercial development that can benefit the Town's economic growth initiatives, and recognize the arterial status and importance of Morinville Road in the context of the Town's transportation system.
4. To provide for a high standard of amenities and community services, which includes provision for a school site and a centrally located park site that are linked to the perimeter recreational trail.
5. To provide opportunities for an integrated trail system that links the open space features within the plan area, and beyond. Where feasible, the design concept will encourage future trail linkages to the Town's existing and proposed trail system.
6. To take advantage of the linear transportation features extending along the west and north sides of the plan area as an opportunity to extend the linear trail system noted above.
7. To provide for a functional and safe internal circulation system based on a hierarchy of collector, and local residential roads.

The foregoing policy objectives compliment and support the relevant policies of the Town's Municipal Development Plan and its Sustainable Development Policy. This policy requires that new developments promote community sustainability by applying land use planning practices that create and maintain efficient infrastructure, ensure close-knit neighbourhoods and sense of community, and preserve natural systems.

The planning boundaries that define the Westwinds area provide a unique opportunity within Morinville to develop a close-knit, sustainable neighbourhood, as envisioned by the Sustainable Development Policy. Although few natural systems exist in the plan area, the creation of a perimeter trail system linked to the Town's system, and the proposed wet pond features, will result in a natural system over time.

Table 1 provides a summary of the land use breakdown proposed by the concept shown on Figure 3.



**Westwinds
in Morinville
Area Structure Plan
Town of Morinville**

Figure 2

**Development
Concept**

- Low Density Residential
- Medium/High Density Residential
- Commercial
- School/Park
- Municipal Reserve
- Storm Facility
- Proposed Trails



Scale 1:3000
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NOTE: Concept may be subject to change. All areas subject to confirmation at the time of subdivision.

Table 1 – Land Area Breakdown

| Area | Hectares |
|---------------------------------|--------------|
| Gross Area | 67.54 |
| Arterial Commercial | 6.88 |
| Public Utility Lots | 3.86 |
| Collector Road | 4.05 |
| Local Roads and Lanes | 6.81 |
| School Site Municipal Reserve | 3.11 |
| Open Space Municipal Reserve | 7.54 |
| Non Residential Area | 32.25 |
| Net Residential Area | 35.29 |
| Medium/High Density Residential | 5.45 |
| Low Density Residential | 29.84 |

Note: The areas shown in Table 1 are approximate, and will be verified at the time of detailed survey and subdivision.

3.2 Design Elements

The major design elements of the development concept are as follows:

1. A collector roadway is proposed as a *loop* road through the plan area with two access points onto Morinville Road. This collector will be *flared* at the intersections with Morinville Road to accommodate commercial as well as residential traffic, and aesthetically pleasing entry features focussing on median and boulevard landscaping, and signage.
2. An entry feature is proposed to be located at the south entrance into Westwinds in Morinville. This feature will be designed to provide a unique village theme that will recognize the cultural identity of the Town, and will be replicated throughout the plan area to promote continuity within the neighbourhood.
3. The local road pattern accessing the collector *loop* road provides for clustered enclaves of residential development that will be linked by the common village theme and the circulation systems.
4. Three arterial commercial sites are proposed to front onto Morinville Road to take advantage of the high visibility and high quality access provided by this important roadway.
5. A 3.11 hectare school site is proposed in the southwest segment of the plan area to serve the students generated by Westwinds in Morinville, and other neighbourhoods within the Town. The proposed site is located along the minor internal collector road and, therefore, is easily accessible to future residents. Also, the site will assist in buffering residential development from potential industrial development in the Westmor Area. The local school authority concurs with the location as proposed. It is assumed that the site will be fenced by the school authority.

6. Two 1.6 hectare wet storm water ponds are proposed to be located along the south leg of the internal collector road, on either side of the central ridge. The east pond will be highly visible from the entry collector road off Morinville Road, and the collector road has been aligned to optimize the visibility of this wet pond feature to residents entering and leaving their neighbourhood. The east pond will also provide a significant amenity feature for adjacent to low to high density housing complexes.

The west pond provides an amenity feature in the west portion of the plan area and is located across from the proposed school site and adjacent a proposed park site, resulting in a significant concentration of open space. The storm ponds will be suitably landscaped and design features will be incorporated that promote the Westwinds in Morinville village theme.

7. A 1.12 hectare park site is proposed to be located central to the neighbourhood along the collector road and adjacent the westerly storm pond, resulting in an open space concentration that includes the school site as well as the pond.

8. A *ribbon of green* is proposed around the perimeter of the plan area to allow for the extension of the Town's existing and proposed trail system. The *ribbon of green* will be accessible internally to all portions of Westwinds, including the school site, the central park site, and the storm pond features, through a combination of trail connections, Public Utility Lots, sidewalks and roads. The trail system within this perimeter linear feature will also be linked to the Town's integrated trail system, but the landscaping and design elements of features will display the Westwinds in Morinville village theme. Benches, play areas and other features can be strategically located along the multi-use trail. Trails provide for an increasingly significant proportion of the Town's recreational needs.

9. The *ribbon of green* also provides a buffer strip along the CN line and Highway 2, and may accommodate any required noise attenuation devices as recommended by a Noise Attenuation Study, as well fencing and the above noted trails. Where appropriate, the trails will be integrated with noise attenuation devices such as landscaped berms. A flaring of the *ribbon of green* is proposed in the northwest corner of the Plan Area to allow for additional separation from the Highways 2/642 interchange to future residential development. A Noise Attenuation Study may be required at the time of subdivision, as per Alberta Transportation's **Noise Attenuation Guidelines for Primary Highways Under Provincial Jurisdiction within Cities and Towns**. The study will determine the design of the noise attenuation feature.

Similarly, the location of pathways along Highway 2 will comply with Alberta Transportation's **Pathways Guidelines for Primary Highways under Provincial Jurisdiction within Cities and Urban Areas**. Pathways will not be permitted within the highway right-of-way.

10. A transition in housing density is proposed from east to west with medium/high density clusters abutting the commercial sites in the east, small lot *laned* residential type uses extending west from these clusters, and then more conventional lower density *laneless* single family residential development extending further west and along the periphery of the plan area.

The specific land use components proposed by the preliminary design concept are described below.

1. Arterial Commercial

Three arterial commercial sites are proposed along Morinville Road, on the east side of Westwinds in Morinville. These sites comprise some 6.88 hectares and will generally be developed as per the General Commercial (C-2) District of the Land Use Bylaw. Arterial Commercial uses normally require highly visible locations and high traffic volumes, and are typically planned as strip malls with on-site parking and clusters of accessory uses, such as free standing financial institutions, restaurants and supermarkets.

A high standard of appearance and design that depicts the Westwinds village theme may be applied, particularly in regard to landscaping, screening, lighting, architectural features, fencing and signage. In the event that no market exists for all three sites within a reasonable timeframe, high density apartment type development may be considered for one, or a portion of one, of the sites.

2. Medium/High Density Residential

Four medium to high density residential sites are proposed to back onto the commercial sites to provide a transition for lower density residential development proposed further west, and to allow for a functional mixed use village concept. The sites will accommodate medium and high density type housing as per the Medium Density Residential (R-5) and High Density Residential (R-6) Districts of the Land Use Bylaw. The apartments units will assist in meeting the considerable unmet demand for rental accommodation in the Town and, with proper interface treatment, will be compatible with the arterial commercial. Future apartment residents also will provide a local market for the commercial uses.

Medium density development is proposed for the larger 2.18 hectare site located south of the collector road. Clusters of ground oriented row housing, such as eightplexes, are being considered. This housing product has proven to be very successful and marketable in other smaller communities in the Edmonton area. Once again, proper interface treatment will be required between the row housing and the arterial commercial.

3. Low Density Residential

Small lot *laned* subdivisions, as per the Innovative Design Residential (R-3) District of the Land Use Bylaw, are being proposed as a transition between the higher density housing backing onto the commercial sites, and more conventional *laneless* residential housing further west towards Highway 2, thereby allowing for a meaningful choice in housing product.

The *laned* small lot subdivision is currently one of the most popular and successful of all the affordable housing options being developed in the Edmonton market, largely because in recent years, the aesthetic quality and liveability of these communities has far exceeded that of many earlier such subdivisions. These newer communities provide a high standard residential environment and housing product, at *entry level* prices. By comprehensively designing subdivisions and homes that focus on the consistent application of good quality construction, combined with uniform architectural, fencing and landscaping features, sustainable and liveable communities have been created that are capable of maintaining their value over time.

The *laned* small lot subdivision approach is an innovative functional approach to providing affordable homes that has been refined and improved in recent years. *Laned* subdivisions offer the following features:

- Efficient and easy to maintain because paved pads are provided in the backs of lots that are accessed off the paved lanes. This reduces the amount of on street parking dramatically, allows for better snow removal, and permits the homeowner to build a garage on the paved pad when convenient.
- Front sidewalks and yards, as opposed to driveways, increase community interaction and liveability. The streetscape becomes inviting and more attractive to pedestrians. A comprehensive landscaping and architectural approach to designing the streetscape ensures a high aesthetic standard and a cohesive neighbourhood.
- By applying proper siting and fencing techniques, private amenity space is provided.
- Typically, cul de sacs are avoided, again increase efficiency for snow removal, parking and emergency vehicles.

Similarly, compact comprehensively designed *laneless* subdivisions that also display uniform architectural, fencing and landscaping features, and elements of good quality construction, are proving extremely successful in providing *entry level* type housing. Morinville is well located and strategically positioned to provide this much needed type of *entry level* product in the northwest sector of the Edmonton area since such housing is not readily available in nearby communities like St. Albert.

The two forms of low density housing products can be successfully integrated through creative subdivision design and the consistent application of aesthetic amenities that promote the Westwinds in Morinville village theme. LANDREX Developers Inc. has a proven track record for ensuring high quality, aesthetically attractive subdivisions and developments, and is prepared to work with the Town in providing architectural details to be applied to the proposed development. It is important to note all residential subdivision, both *laned* and *laneless*, will need to comply with the Town's regulatory standards and provisions, and that the density of the *laneless* areas will be lower than that of the *laned* areas.

4. Storm Water Facilities

As was previously noted, two storm water facilities are proposed along the south leg of the collector. Each storm pond will be about 1.6 hectares in size, and will be designed and landscaped to ensure that they function as amenity features, as well as Public Utility Lots. The easterly pond will provide an attractive entry feature into the community while the westerly pond, in combination with the school site, will result in a significant amenity feature within the *heart* of Westwinds without compromising safety, since the collector road separates the two uses. Both storm water ponds will be integrated into the internal pedestrian circulation system.

5. School Site

The Greater St. Albert Catholic School Division has requested that a 3.11 hectare school site be provided in Westwinds. A site is proposed for the south segment of the area and:

- Is located on lands owned by LANDREX so that municipal services can be extended to the site within a reasonable time frame (see Section 5.0 – Staging and Implementation);

- Is well remove from Morinville Road, future commercial uses and the CN line so that it provides a safe environment for elementary school students;
- Is relatively central to the neighbourhood;
- Allows for good quality access; and,
- Will assist in buffering the future residential uses from industrial uses to the south.

The School Division has provided input in regard to the location of the school site and considers the location appropriate.

6. Municipal Reserve

In addition to the 3.11 hectare school site, some 7.54 hectares of Municipal Reserve is being proposed by this Area Structure Plan, for a total of 10.65 hectares, thereby resulting in a high standard of open space and outdoor recreational opportunities for Westwinds and the Town. The two major features of the open space system comprise the park site located central to the plan area, and the perimeter *ribbon of green* buffer strip that links the park site and the school. This *ribbon of green* may be integrated into the Town's trail system. Section 671(2)(d) of the Municipal Government Act states that Municipal Reserve may be used as a buffer to separate areas of land that are used for different purposes. Specific components of the proposed open space system are described below.

- As was previously noted, a 1.12 hectare park site is proposed to be located central to the neighbourhood along the collector road and adjacent the westerly storm pond, resulting in an open space concentration that includes the school site. A substantial 30 to 40 metre wide open space trail connection extends west of the park site linking it to the neighbourhood perimeter trail, thereby allowing for a variety of recreational opportunities.
- The CN Westlock rail line Municipal Reserve buffer strip is proposed to be 30 metres wide as per CN's guidelines for a Secondary Line. However, because of the low volumes of train traffic on this line, the most significant requirement along the line is for a safety fence. Regardless, the 30 metre width allows for the extension of the trail system as proposed by the Town's Parks and Recreation Department. The Department's Trail System proposes that the CN trail within Westwinds be extended further east and to the west and north. However, agreements with CN are required to extend the trail to the north and west. As such, the only extension shown at this time is to the east where a crossing is not required. The 30 metre wide Municipal Reserve strip will allow for extensive landscaping and trail meandering.
- The Highway 2 Municipal Reserve buffer strip is also proposed to be 30 metres wide, and will include a trail constructed to the Town's standards to link with the system described above. The 30 metre width is sufficient to allow for the trail to meander through the buffer and to be integrated with any required noise attenuation device. The noise device constructed, along with the any required fencing and landscaping, will comply with the recommendations of a Noise Attenuation Study. As was previously noted, the development of the buffer strip will comply with Alberta Transportation's requirements.
- Strategically located linear trail connections are proposed within Westwinds in Morinville to provide access to the perimeter trail system.

The amount and location of Municipal Reserve dedication will be finalized at the time of subdivision and development.

7. South Buffer Strip

A 15 metre wide strip is proposed along the south side of the plan area between the school site and the commercial lands bordering Morinville Road to buffer future residential uses from the industrial development proposed under the Westmor Area Structure Plan.

3.3 Population and School Generation

Population and number of unit estimates for the Westwinds in Morinville plan area are summarized by Table 2. For the purposes of this Area Structure Plan, the following factors are assumed:

- A density of 90 units per net hectare (36 units per net acre) for medium/high density development. This density is an average of the maximum densities permitted under the R-5 and R-6 Districts of the Land Use Bylaw.
- 21 units per net hectare (8.5 units per net acre) for low density residential.
- 3.46 persons per low density dwelling unit and 2.6 persons per medium/high density dwelling unit.
- 1.2 students per dwelling unit, as per the information provided by the Greater St. Albert Catholic School Division.

Based on the foregoing factors, the total number of dwelling units is estimated to be 1,118, the population is projected to be 3,446, and the potential number of students generated is 1,341.

Table 2 – Number of Units and Population

| | Low Density | Medium/High Density | Total |
|------------------------------------|-------------|---------------------|----------|
| Area | 26.83 ha | 5.35 ha | 32.18 ha |
| Units/ha | 21 | 90 | |
| Units | 627 | 491 | 1,118 |
| Population/Unit | 3.46 | 2.60 | |
| Population | 2,169 | 1,277 | 3,446 |
| School Generation (units x 1.2) | 752 | 589 | 1,341 |

4. MUNICIPAL SERVICES

4.1 General Circulation Pattern

Westwinds in Morinville will generally be served by a minor collector roadway off Morinville Road that *loops* through the plan area within a 20 metre wide right-of-way, with two access points onto Morinville Road (see Figure 3). The distance between the two Morinville Road intersections is 260 metres.

At the south entrance into the subdivision, the right-of-way is increased to 30.5 metre and will be constructed to minor arterial standards. This road standard will accommodate the adjacent commercial and higher density development, and increased traffic volumes at the intersection.

The north entrance will be constructed to a major collector standard within a 24.5 metre right-of-way. All local roads are proposed to be within an 18 metre wide right-of-way.

The required improvements to Morinville Road that will allow for proper turning movements into the subdivision and the commercial sites will be negotiated with the Town at the time of subdivision. All roads will be constructed to the Town's Engineering Standards.

It is anticipated that the ultimate widening of Morinville Road will be required to be provided for four travel lanes and provision for acceleration/deceleration and left turn lanes. The exact amount of widening will be subject to agreement with the Town, but road widening dedication will be required. It is anticipated that land taken for road widening will be equal on both sides of Morinville Road.

4.2 Water Distribution

The main water supply for the plan area will be the existing 300mm diameter water main running along the east side of Morinville Road. The 300mm water main will allow for connections to the plan area that, subject to a water distribution analysis, should result in an efficient looped system with adequate fire flows. Provision may also be made for a connection through to land to the south, as shown on Figure 4. Water main sizing will be subject to a detailed analysis.

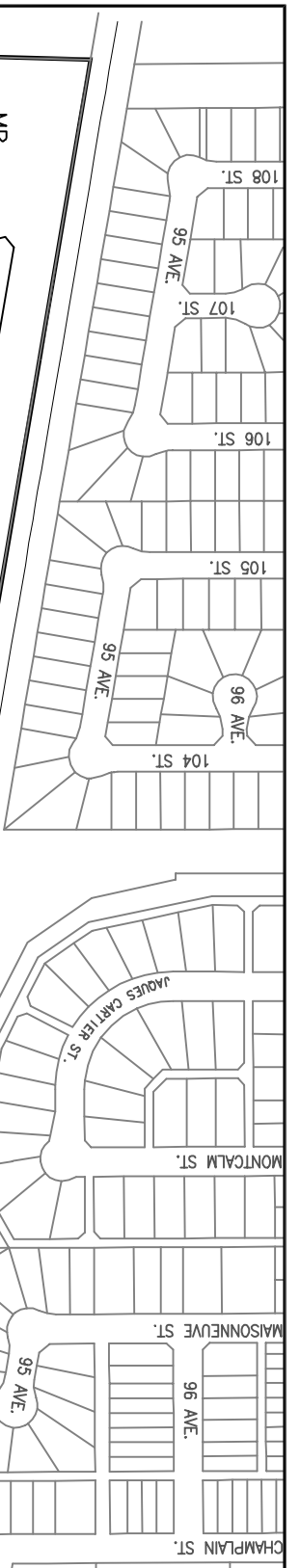
The water supply system is shown schematically on Figure 4.

4.3 Sanitary Drainage

Figure 5 illustrates the concept for drainage within Westwinds, wherein the sanitary sewers within the ASP boundary will drain to the north-central area by gravity to a lift station located south of the CN tracks. In order to maintain reasonable trenching depths, pipe sizes and grades may be optimized whilst ensuring minimum self-cleansing velocities.

Discharge of sanitary flows from the lift station may be addressed in two ways. Initially, consideration may be given to the construction of a force main across the tracks and east to connect to an existing sanitary sewer in the lane east of 95th Avenue. It is estimated that this sewer has capacity to accommodate in the order of 19 hectares of flow from the commercial and residential components of Westwinds.

Once the capacity is fully utilized, a new force main will be constructed to the north either along the CN R/W if possible, or along a series of laneways and Jaques Cartier Street to Laval Avenue. At this point, it will connect to a proposed forcemain in Laval Avenue, which ultimately discharges to an existing 450mm sanitary sub-trunk to the east.



Morinville Road

**Westwinds
in Morinville
Area Structure Plan
Town of Morinville**

**Figure 3
Circulation
Concept**

- Minor Arterial
- - - - Major Collector
- Minor Collector

Scale 1:5000
March 2004



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NOTE: Concept may be subject to change. All areas subject to confirmation at the time of subdivision.

Westwinds in Morinville Area Structure Plan

Town of Morinville

Figure 4 Water Distribution Concept



NOTE: Concept may be subject to change. All areas subject to confirmation at the time of subdivision.

Existing 300mm Water Line

Connection

Connection

Possible Future Connection

Scale 1:5000
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
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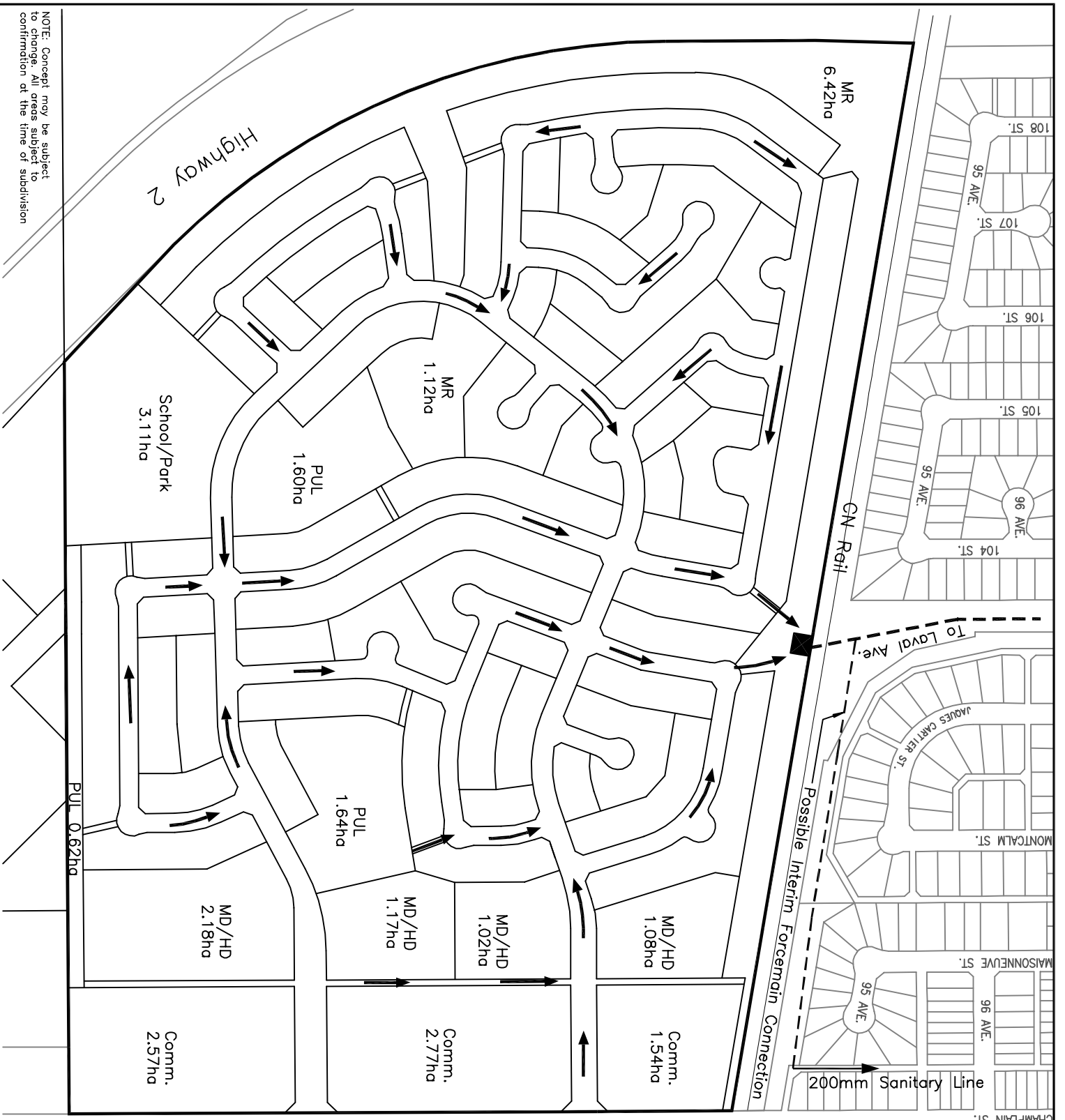
Westwinds in Morinville Area Structure Plan Town of Morinville

Figure 5

Sanitary Sewage Concept

-  Future Sanitary Catchment Area
-  Flow Direction
-  Lift Station
-  Forcemain

Morinville Road



NOTE: Concept may be subject to change. All areas subject to confirmation at the time of subdivision.

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Note that the opportunity to connect to the Laval system is dependant upon the timing of upgrades to the existing Town Lift Station on Laval and the construction of a new force main from the lift station east along Laval Avenue. At time of preparation of this report, such upgrades are scheduled for 2003.

Alternately, the interim solution to connect to the 95th Avenue lane may be discarded and the ultimate connection constructed immediately. It should be noted that an opportunity exists to include lands to the east of Morinville Road into this catchment area, and that is illustrated on Figure 5. In the event that this option is exercised, Westwinds would be compensated for oversizing of both the lift station and pipes.

4.4 Storm Water Drainage

Storm drainage from the proposed development will be controlled to approximately predevelopment flow rates. In order to achieve this, on-site storm water management will be required. Some improvements to about 1.3 km of the downstream ditch along Highway 2 to Cardiff Road may also be required. No off-site drainage is evident that must be accommodated by the on-site storm water system.

The on-site storm water management storage facility will take the form of a combination wetland/wetpond. The storm water drainage system will direct both minor (storm sewers) and major (overland flow) flow to the wetland. A lift station, with a high volume, low lift pump, will be required to transfer the wetland outflow through a force main to the Highway 2 ditch. A major overland flow path, along the same alignment, will also be constructed from the wetland to the Highway 2 ditch. This major overland flow will exit to the south of the west corner of the wetland, and will then flow south to the south boundary of the site. From this location, a gently graded swale heading west will carry the major overland flow to the Highway 2 ditch.

For the initial stages of development, the wetland/wetpond may be constructed as an evaporation/infiltration pond, deferring the necessity to install the lift station and force main. This approach would be subject to approval by both the Town of Morinville and Alberta Environment.

Consideration may be given, at the detailed design stage, to permit the major overland flow from the pond and the force main flows to outlet into the Morinville Road ditch. This would involve possible ditch regrading along Morinville Road from the subject lands south to Cardiff Road and, again, would be subject to approval by the Town of Morinville and Alberta Environment.

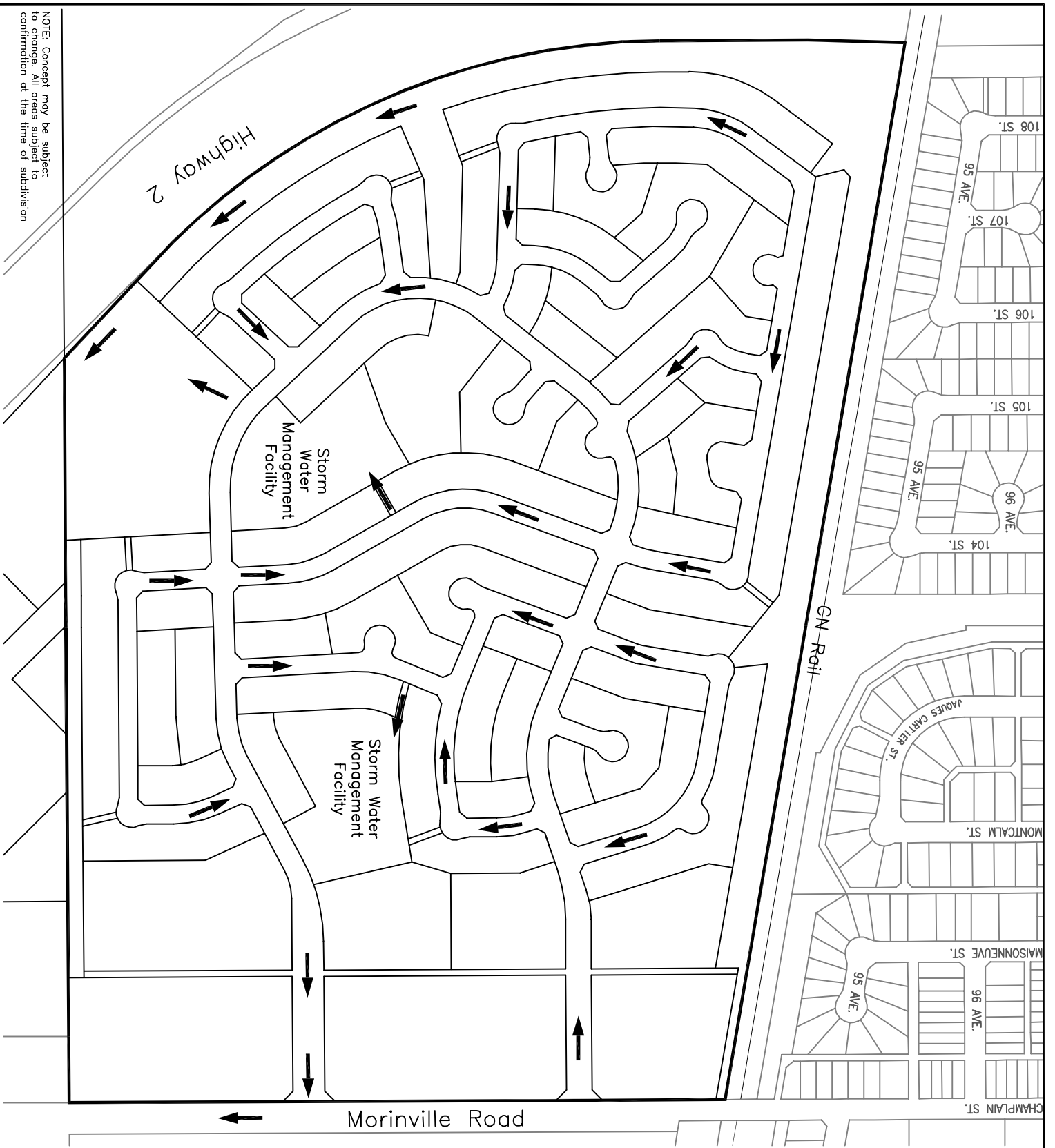
The storm water management system is shown schematically on Figure 6.

4.5 Franchise Utilities

Power, gas, telephone, and cable TV will be provided to the plan area by the extension of existing facilities.

4.6 Noise Attenuation

As required by Town, CN and Alberta Transportation, and at the time of detailed design, a Noise Attenuation Study will be carried out to assess the impact of the adjacent CN Westlock line and Highway 2 on future residential development. Results of any Study will be assessed and recommendations incorporated as required, into the detailed design of the development.



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**Westwinds
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**Figure 6
Storm
Drainage
Concept**

↑
General Direction of
Major Overland Flow

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4.7 Geotechnical Investigation

A site specific geotechnical investigation has been carried out on the LANDREX lands by J.R. Paine and Associates Ltd in October 2002. A copy of the report is attached to the Engineering Design Brief, and based on the results from a series of seven boreholes throughout the site, the report concludes that the site is suitable for development.

5. STAGING AND IMPLEMENTATION

The staging concept is shown on Figure 7. The first stage of development allows for servicing and development of the southeast corner of Westwinds in Morinville. This means that diversity of uses may be accommodated, and the village theme entry features may be implemented to immediately cement the identity of the Westwinds neighbourhood.

Subsequent stages of development are proposed to occur generally from to west and north of the first stage. It is noted that if development proceeds in accordance with the staging illustrated, then provision for an emergency access will have to be made once Stages 3, 4 (north) and 5 proceed. This may take the form of a temporary access through Stages 5 and 6 out to Morinville Road.

The Land Use Bylaw No. 4/2003 will need to be appropriately amended at the time of subdivision.

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Figure 7
Staging



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