

Cypress County



Suffield Area Structure Plan

December 2010

Prepared by

PLANWELL CONSULTING

and

Finley Hann Engineering Ltd.

Table of Contents

1.0	Introduction.....	1
1.1	Purpose of Plan.....	1
1.2	Approval and Adoption Process.....	1
1.3	Legislative Framework.....	1
2.0	Background Information.....	3
2.1	Location and Plan Area.....	3
2.2	History.....	3
2.3	Community Services.....	5
2.4	Residential Survey.....	5
2.5	Planning Workshop.....	7
3.0	Land Use Analysis.....	9
3.1	Physical Features and Existing Development.....	9
3.2	Development Constraints.....	14
4.0	Development Concept and Policies.....	15
4.1	General Description.....	15
4.2	Residential Development.....	15
4.3	Commercial and Industrial Development.....	17
4.4	Parks and Open Space.....	18
5.0	Transportation.....	20
5.1	Existing Road Network.....	20
5.2	Hamlet Road System.....	20
5.3	Future Trans Canada Highway Upgrading.....	21
5.4	Rail Access and Military Traffic.....	21
6.0	Municipal Servicing.....	22
6.1	Municipal Water System.....	22
6.2	Sanitary Sewer System.....	22
6.3	Storm Water Management.....	23
7.0	Implementation.....	29
7.1	Levels of Implementation.....	29
7.2	Land Use Districts.....	29
7.3	Land Use Bylaw Amendments.....	29

List of Figures and Tables

FIGURES

Figure 1	Hamlet Location and Plan Area.....	4
Figure 2	Hamlet Air Photo - 2009.....	10
Figure 3	Land Use Districts.....	11
Figure 4	Land Use Inventory.....	12
Figure 5	Development Concept.....	16
Figure 6	Conceptual Subdivision Design.....	19
Figure 7	Water System.....	25
Figure 8	Sanitary Sewer System.....	26
Figure 9	Storm Drainage System.....	28

TABLES

Table 1	Land Use Inventory.....	9
Table 2	Sanitary Sewer System Table.....	27

1.0 Introduction

1.1 Purpose of Plan

The purpose of this Area Structure Plan for Suffield is to guide future growth and land development in an orderly and economical manner that supports the aspirations of the community, land owners, the County and other major stakeholders, while protecting the physical environment.

The Plan does this by establishing policies and guidelines related to specific land uses and activities that are considered suitable within the hamlet. The Plan also addresses the phasing of development over time, and the future expansion of the community in terms of servicing constraints and expanded infrastructure systems.

The Area Structure Plan supports the long-term viability of this rural community by examining the feasibility of additional land development in the hamlet and identifying the current development concerns of the community.

Specific objectives of this Area Structure Plan are:

- To develop a plan that will guide future development and expansion of the hamlet while maintaining the strong residential character of Suffield.
- To establish the appropriate types of land uses that complement the existing development in Suffield.
- To define a logical and effective sequence of residential growth, predicated on the availability of an adequate municipal water supply.
- To provide an opportunity for service commercial and suitable light industrial uses to locate in appropriate locations in Suffield.
- To provide a municipal servicing concept for an expanded hamlet community.

1.2 Approval and Adoption Process

In accordance with the requirements of current planning legislation and Cypress County planning practice, the draft Area Structure Plan will be submitted to the County for review and will be the subject of a public Open House in November, 2010.

Based on input received through this process, the Area Structure Plan may be revised prior to being submitted to County Council for adoption. Formal adoption of the proposed Suffield Area Structure Plan by bylaw will include a final Public Hearing.

1.3 Legislative Framework

An Area Structure Plan such as this one forms part of a hierarchy of planning documents that provides a framework within which consistent and complementary planning and land use decisions can be made regarding the subdivision and development of land in Suffield.

This framework is established under the Municipal Government Act, Part 17, Planning and

Development, and allows municipalities to adopt plans and bylaws that specifically deal with future growth and development.

In accordance with Section 633 of the Municipal Government Act, an Area Structure Plan must address the following:

- the sequence of development proposed for the area
- the land uses proposed for the area, either generally or with respect to certain parts of the area
- the density of population proposed for the area, either generally or with respect to certain parts of the area
- the general location of major transportation routes and public utilities.

The Area Structure Plan must also be approved by the Minister of Transportation because the hamlet is located on a primary highway, and it is important to ensure that the plan is consistent with any highway development plans that the Provincial Government may have in place.

Furthermore, the Municipal Development Plan (MDP) adopted by Cypress County provides direction and support for the preparation of this Area Structure Plan. A goal of the Municipal Development Plan is to ensure the orderly development of non-agricultural land uses within the County, including appropriate development within the existing hamlets. The MDP recognizes the importance of hamlets within the county as residential communities and local service centres. This area structure plan is consistent with the goals, objectives and policies of the Municipal Development Plan.

Finally, the Cypress County Land Use Bylaw (Bylaw No. 2006/13) divides the municipality into a number of land use districts that establish appropriate uses and development regulations. There are hamlet land use districts in the Land Use Bylaw that will be used to implement the objectives and policies of this Area Structure Plan. This may require additional land use regulations that will involve amendments to the Land Use Bylaw.

2.0 Background Information

2.1 Location and Plan Area

The hamlet of Suffield is a small rural community in Cypress County, comprised of over 100 dwellings and a number of businesses. Located on the Trans Canada Highway and adjacent to the Canadian Pacific Railway main line, the hamlet is about 30 kilometres north-west of Medicine Hat.

Figure 1, on the next page, shows the hamlet location and the surrounding area. Most of the hamlet is situated in the NE of Section 33 and the NW of Section 34 in Township 14, Range 9, W4M. Suffield is adjacent to Provincial Highway 884 that runs north from the Trans Canada Highway to Ralston and through Canadian Forces Base (CFB) Suffield. CFB Suffield includes a large expanse of land to the north and north-east of the hamlet, bounded on the south by Township Road 150 that also forms the north boundary of the hamlet (Ellice Avenue).

Although a portion of the C.P.R. right of way is designated as Hamlet Industrial in the County Land Use Bylaw, none of the existing hamlet development extends south of the highway. The established hamlet boundary, as shown in Figure 1, generally defines the plan area for this Area Structure Plan.

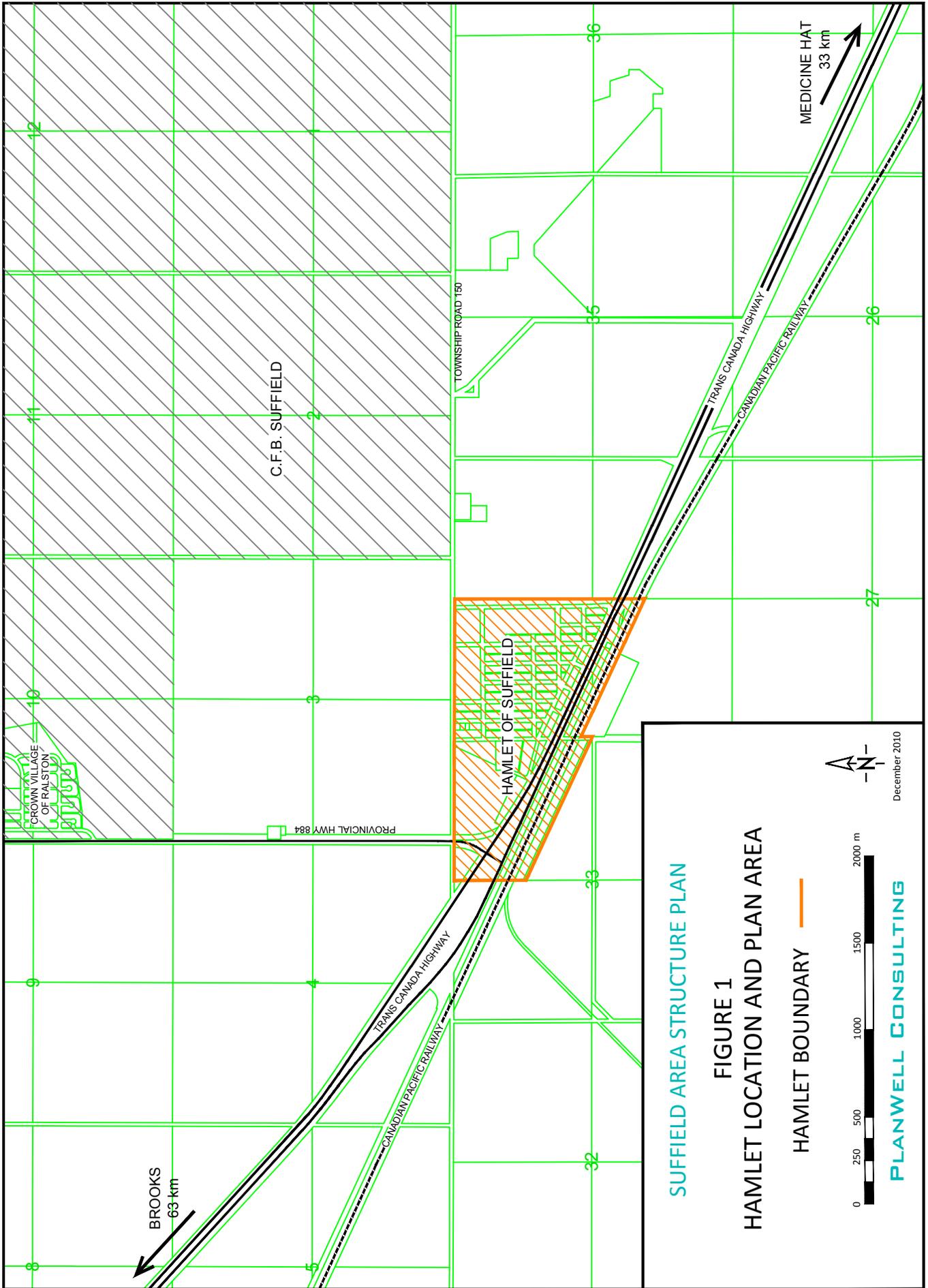
2.2 History

Suffield had its beginnings with the coming of the railway when the C.P.R. built a section foreman's house on the present site of Suffield. Early in the 1900's, the Southern Alberta Land and Irrigation Company initiated a large farmland development operation in the Suffield area. Land was offered for homesteading and many new farms were started. The company surveyed and built much of the original community of Suffield which had five elevators and three hotels at its peak.

The company also began construction of an irrigation canal from the Bow River to Suffield and the future for farming looked promising. However, by 1918, the Southern Alberta Land and Irrigation Company was bankrupt and the irrigation canals were never completed. Without irrigation in this very dry part of the Prairies, the farms were not viable and many of the homesteads were abandoned. The Southern Alberta Land and Irrigation Company's land and much of the homestead land were eventually taken over by the province through the tax recovery process.

This initial farming era was followed by an era of horse ranching in the 1930's and sheep ranching in the 1940's on leased land. Both ventures were discontinued and the area is now used for cattle ranching on large grazing leases.

Two other activities that have affected the growth of Suffield were the establishment of the Suffield Military Block in 1941 and, more recently, the gas and oil exploration activities in the area. The Suffield Block was established as a military experimental station and has been used in various research capacities since then, including an on-going training grounds for the British Army.



SUFFIELD AREA STRUCTURE PLAN
 FIGURE 1
 HAMLET LOCATION AND PLAN AREA

HAMLET BOUNDARY ———



PLANWELL CONSULTING



December 2010

The base remains the major source of employment in the area and the Crown Village of Ralston has various commercial and recreational amenities that are available to hamlet residents. Because Suffield is vulnerable to any reductions in military staffing that may occur, a more diversified economy is desirable. There is some opportunity for economic diversification in the oil and gas industry. Large gas deposits underlie the area around Suffield and exploration activities in the past have had both positive and negative impacts on the hamlet.

2.3 Community Services

Education

At present, there is no school in Suffield and students are bussed to schools in other communities. Students in Grades 1-9 attend school in Ralston and students in Grades 10-12 are bussed to Dunmore and Medicine Hat. Library services are also available in Ralston.

Recreation

Recreation facilities include a small park, a community hall, and a baseball diamond, plus various facilities in Ralston that are available to the residents of Suffield.

Medical Services

The nearest medical services for residents of Suffield are in Medicine Hat. These include doctors, dentists, health units and a hospital. Suffield and Ralston receive ambulance services from the military ambulance service in Ralston. There is also an air ambulance service on the base that is available in emergency situations.

Protective Services

Police protection is provided by the R.C.M.P. as a part of their rural coverage of the area, and a County employed Peace Officer is responsible for Bylaw enforcement. The Military Police patrol Provincial Highway 884 from Highway 1 to the north end of the military base. An agreement exists between the County and C.F.B. Suffield to provide fire protection services to Suffield and the surrounding area.

2.4 Residential Survey

In May, 2010, a residential survey was conducted in Suffield and approximately 60% of the households were canvassed. This survey was one method of identifying the aspirations and concerns of the hamlet residents.

It also served as an opportunity to invite residents to the scheduled planning workshop to be held on June 3, 2010, as well as providing relevant contact information. The survey was very short, and asked a few demographic questions as well as a few questions about likes and dislikes of living in the community.

Demographics

At the time of the survey, there were 120 dwellings identified in the Hamlet of Suffield. Some of these were unoccupied, and in many cases there was no response when the survey was being conducted. Assuming that 5% of the housing stock was unoccupied, there were 114 households in the community.

A total of 64 surveys were completed, accounting for 56 percent of the households and representing about 60 percent of the population. Based on this representative sample, a number of observations can be made about the demographics of Suffield:

- Household size ranged from one to twelve occupants, with the average being 2.2 people per household.
- The estimated total population for the hamlet is 250 people.
- The majority of households are comprised of 2 people, with only 27 percent of all households having children.
- A quarter of the households are comprised of retired individuals or couples.
- It is estimated that there are just over 100 people in the local labour force - most working at CFB Suffield or in the surrounding area.
- Over 60 percent of the households have resided in Suffield for 5 or more years and almost 90 percent have lived in the community for at least 3 years. This statistic indicates a very stable community.

Reasons for Living in Suffield

Although a variety of responses were received regarding this part of the survey, there were three common threads through many of the comments:

- Most residents liked the serenity and quiet rural nature of the community.
- For many residents, the proximity of work at CFB Suffield was a key reason for living in the hamlet.
- For many, the people in the community were important, whether relatives and family or just good neighbours who helped to make it a safe place to live.

Other positive comments included the fact that Suffield was quite close to all the services and amenities available in Medicine Hat, while at the same time being quite rural, less restrictive and more affordable than living in the city.

Making Suffield a Better Community

In responding to this part of the survey, there was consensus on a number of concerns, especially those regarding the need for a larger supply of treated water to meet current and future demand. Also high on the list were concerns regarding cable and high-speed internet service, as well as the need for some existing water, sewer, and gas lines to be upgraded or installed properly.

Although not directly related to this planning project, a large number of respondents indicated strong concerns regarding the local community and recreation association and recent events that had occurred with the association board.

Other concerns that were identified by a number of households included:

- animal control (stray cats)
- minimum property maintenance
- no garbage collection
- need for improved roads and parks

Although some residents thought more commercial development would be good, they also recognized that the hamlet was too small to support a wide range of services. Some liked the community the way it is, while others felt that some development and growth would be beneficial.

2.5 Planning Workshop

The survey results helped to identify some of the opportunities and constraints that affect this community and the future growth of the hamlet. In order to further expand upon these development matters and explore other options, a Planning Workshop was organized and held at the Suffield Community Hall on June 3, 2010. This gave people from the community a chance to speak, listen, and share ideas about how Suffield might grow and develop in the future. A representative from the Cypress County Planning & Development Department was also present and participated in the workshop.

A number of concerns and issues were identified during the workshop discussions which focused on development and land use. As expected, the issue of water supply was a major concern, and the residents fully understand that any development or growth of the hamlet is contingent upon acquiring more water from the CFB Suffield water treatment plant. This requires a new contract with the Base to provide a larger daily volume of treated water, and renegotiating this contract may not be possible. It was suggested that other sources and treatment options should be examined, including the use of existing well water.

In terms of expanded commercial uses, some residents felt that the amount of commercial development should be limited to protect existing businesses, although this is not how land use legislation and planning regulations tend to operate. It is reasonable to limit the amount of available commercial land through the Land Use Bylaw, but it is not expected that certain uses would be excluded to protect existing ones.

Based on some recent experiences with industrial uses in the hamlet, many residents were concerned with this type of expansion. It was felt that industrial development within the hamlet should be service commercial or light industrial in nature and should not involve large storage yards of materials or equipment. The existing HI - Hamlet Industrial District in the north east corner of the hamlet should not be expanded. It was suggested that industrial activities requiring large storage yards should be directed to other designated rural industrial

areas outside the hamlet.

For many people, the residential appeal of this community is the large parcel size, and while some infill development can be expected, it is not anticipated that many of the existing large residential parcels will be subdivided in the foreseeable future. It was generally agreed that residential expansion should occur on the easterly vacant land (Block Y) between Sixth and Eighth Streets, as well as immediately west of First Street. In both cases, these properties are not designated for residential development and remain in the A2 – General Agriculture District of the Land Use Bylaw. Expansion of the hamlet into these areas will involve the extension of both water and sewer mains. With respect to sewer system expansion, there are topographic and grade issues to be addressed in each of these areas.

In terms of transportation and roads, it was pointed out that, in the long term, direct access to the Trans Canada Highway will be closed and that hamlet traffic will have to use Provincial Highway 884 to get onto the highway. This will mean that Ellice Avenue and/or a service road parallel to the highway will be the main connecting routes between the highway and Suffield.

Finally, there was concern raised regarding improvements to the telephone and cable service - and the availability of high-speed internet – as being important to the success of this hamlet as a viable community.

3.0 Land Use Analysis

3.1 Physical Features and Existing Development

Suffield is located on generally flat terrain that rises gently from east to west, with some undulations that could affect servicing some of the existing vacant land. The local elevation is between 744 and 752 metres above sea level. According to the Canada Land Inventory Classification, the soil type of this region is Class 4. As this type restricts crop production, the surrounding land is used predominantly for grazing, with a sparse rural population.

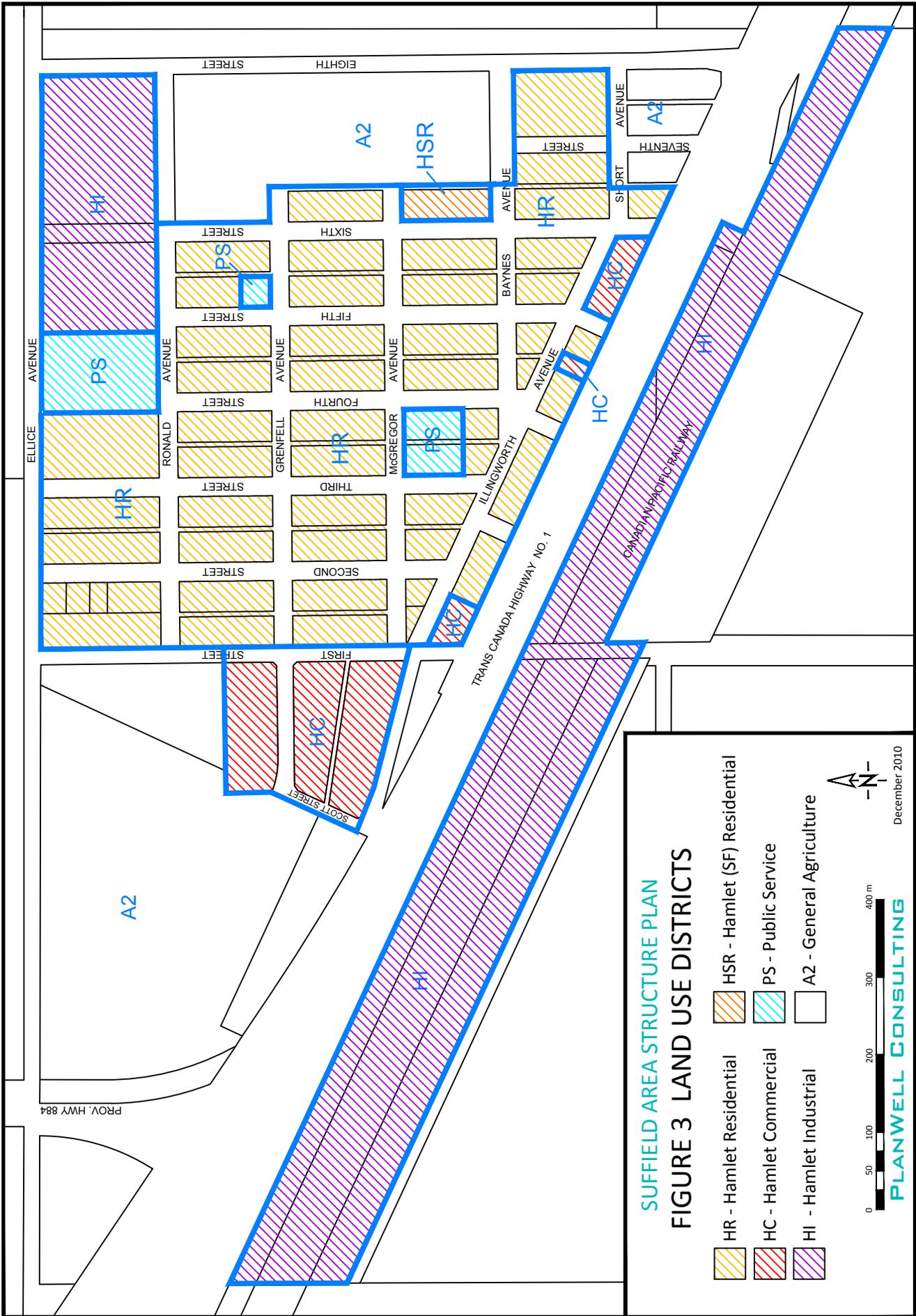
In order to establish a base line of development, a land use survey of all hamlet properties was undertaken. The extent of development in the hamlet is portrayed in the 2009 air photo of Suffield shown in Figure 2 and the current Land Use Districts from the Cypress County Land Use Bylaw are shown in Figure 3. This information was used to categorize each property for the survey.

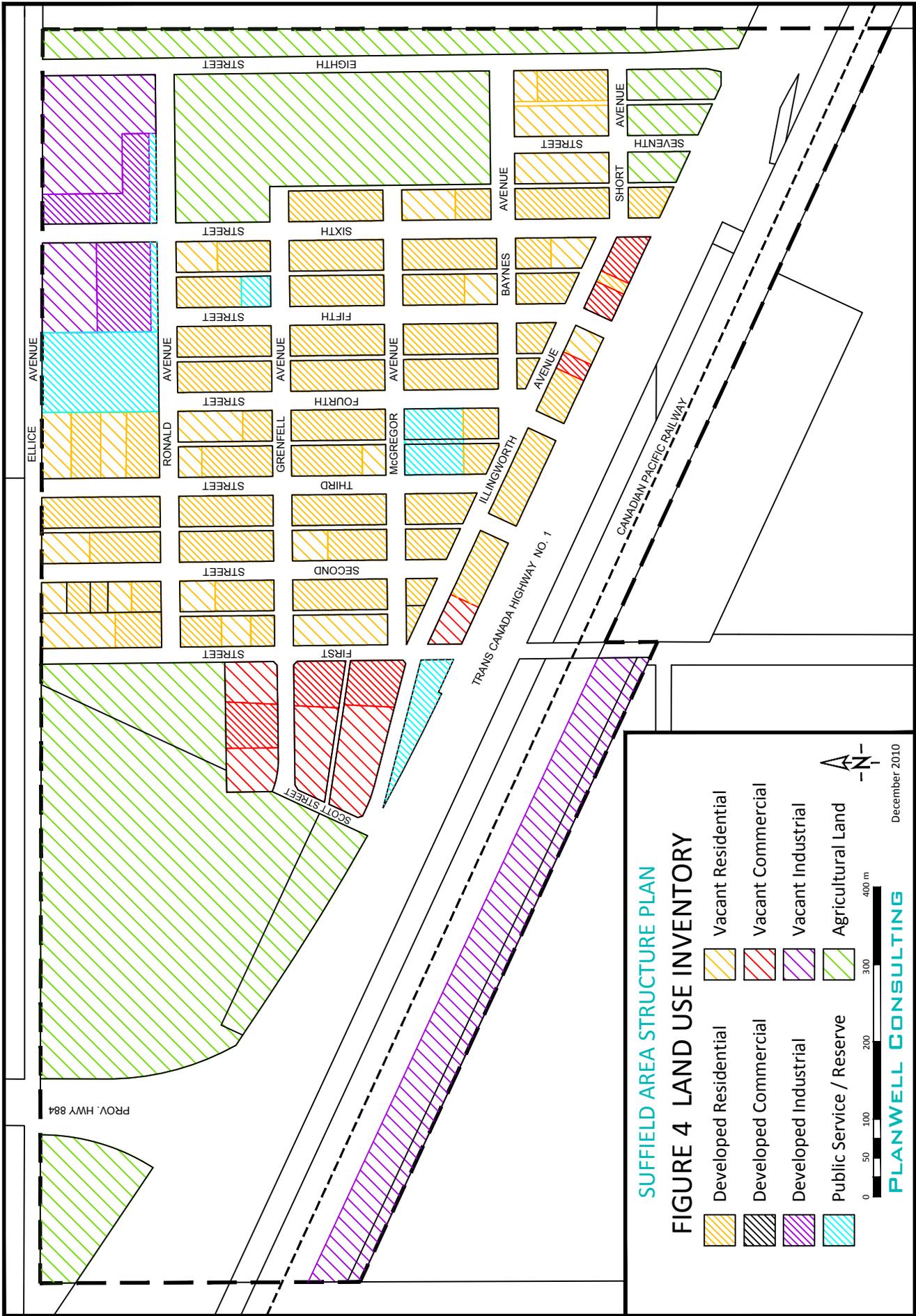
The land use inventory is summarized in Table 1 and depicted on the map in Figure 4. The survey was based on existing parcels and land use designations. The survey area covers all land within the current hamlet boundary (122 hectares) and includes the Trans Canada Highway right of way and the CPR rail right of way.

Table 1 Land Use Inventory

Land Use		Hectares	Percent
Residential	Developed	16.37	13.4%
	Vacant	5.15	4.2%
	Total	21.52	17.6%
Commercial	Developed	1.66	1.4%
	Vacant	2.33	1.9%
	Total	3.99	3.3%
Industrial	Developed	1.62	1.3%
	Vacant	8.12	6.6%
	Total	9.74	8.0%
Public Service	Total	2.99	2.4%
Agricultural	Vacant	28.40	23.2%
Rail ROW		10.75	8.8%
Road ROW		44.89	36.7%
TOTAL		122.28	100.0%







SUFFIELD AREA STRUCTURE PLAN
FIGURE 4 LAND USE INVENTORY

- Developed Residential
- Vacant Residential
- Developed Commercial
- Vacant Commercial
- Developed Industrial
- Vacant Industrial
- Public Service / Reserve
- Agricultural Land



December 2010

PLANWELL CONSULTING

It should also be noted that the land use survey identified undeveloped portions of residential blocks that were 0.12 hectares or larger in size as vacant in-fill parcels. It is understood that some of these in-fill sites may never be developed as additional building sites but the potential for this type of expansion does exist.

The following observations are derived from an examination of this inventory data:

- All developed land accounts for only 18 percent of the study area, with two-thirds of the developed property being devoted to residential uses.
- Within the residential area of the hamlet, there are approximately 5 hectares of potential in-fill.
- The density of residential development is very low, with 6 to 10 houses per block being the norm.
- Public parks, reserves and community facilities account for only 2.3 percent of the total area, and about 8.5 percent of the designated land use area (all residential, commercial and industrial districts).
- Over 40 percent of the total study area is devoted to either road or rail rights of way, due to the Trans Canada Highway and the CPR main line passing through the hamlet, as well as the internal hamlet road rights of way that are much wider than the typical 20.1 m width at 24.38 m.
- Over 20 percent of the study area is vacant undeveloped land that has not been designated for hamlet uses and remains in the A2 – General Agriculture land use district.
- Of the 9.7 hectares of industrial land, approximately 8 hectares (82%) is undeveloped.
- Of the 4 hectares of commercial land, about 2.3 hectares (56%) is vacant and undeveloped.

3.2 Development Constraints

There are a number of constraints that will limit the expansion, or affect the future growth of Suffield. These will influence the overall development scheme for the hamlet:

Transportation

The C.P.R. main line right of way and the Trans Canada Highway represent a significant barrier to future hamlet development to the south. Alberta Transportation intends to upgrade the highway to a limited access rural freeway standard in the future. This will limit direct access to the hamlet and will direct most traffic to Provincial Highway 884, where an interchange with the Trans Canada Highway will be constructed.

Water

The existing water distribution system is comprised of a number of different-sized lines and mains, and the system components should be rationalized over time. However, the major issue at this time is water supply and the limited amount available from the C.F.B. Suffield treatment plant. Consideration must be given to finding other sources or developing alternative treatment facilities.

Sewer

The present sewage outfall line is limited in its ability to drain areas further north or east but can readily pick up developable land to the west where the elevation is high. Detailed analysis of the system and its extension into areas to the north and west are required.

Topography

There are a number of smaller low-lying areas, as well as some areas of higher elevation, that may impact future development. Some of these may be resolved through re-grading and cut-and-fill techniques, or may be required as designated retention areas. Detailed evaluation and recommendations will be provided in the final Servicing Report.

Military Experimental Range

The Suffield Block lies 300 metres to the northeast of the hamlet, and any expansion of the hamlet in this direction should be discouraged.

Lagoon

The sewage lagoon lies approximately 425 metres east of the hamlet, limiting expansion in that direction. Residential development is not permitted within 300 metres of this facility.

4.0 Development Concept and Policies

4.1 General Description

The growth and expansion of the hamlet of Suffield must strike a balance between establishing additional serviced residential lots in the most cost-effective manner and ensuring that the negative impact of adjacent incompatible uses is minimized. Although the preference in the community is to have very large lots, servicing of these parcels is not efficient and smaller lots should be encouraged.

The creation of additional commercial and light industrial lots, and appropriate uses and regulations in the Land Use Bylaw, must be done in a manner that minimizes the negative impact on adjacent existing or future residential development. In some cases, the proper placement of commercial and light industrial land uses near transportation routes can also assist in meeting the first objective by minimizing traffic in residential areas.

The plan provides for short-term growth as well as long-term expansion of the community, taking into account the locational constraints and the logical expansion of municipal water and sewer systems, and storm water management, in the future.

The Development Concept described in this Area Structure Plan addresses these planning principles and provides a policy framework for the implementation of this concept. The Development Concept is shown in Figure 5, and described in the following sections.

Furthermore, a Conceptual Subdivision Design is shown in Figure 6 that provides additional detail regarding possible future land subdivision and road patterns. Although other designs may be possible, this concept is included to provide a basis for future development and servicing plans.

4.2 Residential Development

In the short term, the Development Concept proposes in-fill development within the existing residential area of the hamlet. Existing vacant and undeveloped residential parcels that are serviced with water and sewer should be developed prior to new residential subdivisions being approved in the hamlet.

In the medium term, serviced residential lots can be developed on the easterly side of the hamlet referred to as Stage 1 and Stage 2. Topographic and grading issues in this general area need to be resolved in order for these stages to commence.

The Development Concept shows long-term residential expansion to the west of First Street that will meet any future residential demands.

Residential Development Policies

- Future residential subdivisions shall be at least 40 metres from the Trans Canada Highway right of way, as required by Alberta Transportation.
- Residential expansion in Suffield should occur only where municipal water and sewer systems can be extended to provide fully serviced lots.

- The predominant form of hamlet residential development shall be single detached dwellings, although other types of lower density housing, such as semi-detached and townhouse units, may be acceptable if future demand warrants this type of development.
- Residential development densities should reflect the rural nature of the community and should average between 10 and 12 lots per gross developable hectare.
- The first phase of residential expansion (Stage 1) shall be on land that is easily serviced adjacent to the existing residential lots in the south-east part of the hamlet, south of Baynes Avenue, providing 15 to 20 new lots.
- The second phase of residential expansion (Stage 2) would be on land north of Baynes Avenue on the southerly portion of Block Y. Some re-grading of this area may be required to extend sewer service to the north, providing an additional 20 or more lots. The northerly portion of Block Y may remain unserviced.
- Long-term residential expansion shall be accommodated in the north-west part of the hamlet, immediately west of First Street and south of Ellice Avenue. This area would include a park and accommodate at least 30 large lots.
- Where residential development is proposed adjacent to existing commercial land uses, appropriate buffering and separation shall be incorporated in the subdivision design.
- Storage of materials or unregistered vehicles in residential areas is discouraged unless enclosed or housed to the satisfaction of the Development Officer.

4.3 Commercial and Industrial Development

Hamlets such as Suffield are suitable locations for service commercial and light industrial activities. Although land within the hamlet has been designated for industrial uses under the Land Use Bylaw, some of these properties are currently vacant. As local demand for commercial services increases with a growing residential population, it is anticipated that various commercial and light industrial uses will locate in Suffield. Furthermore, a limited amount of highway commercial development may occur, given the location on the Trans Canada Highway.

Commercial and Light Industrial Development Policies

- The type of commercial development that is appropriate in the hamlet will complement the predominant residential character of the community, and may include certain types of light industrial activity.
- Appropriate commercial and light industrial activities are those that do not create negative impacts on the community related to excessive noise or truck traffic, unsightly storage, or reduced air quality.
- In the short term, light industrial development shall be directed to the existing parcels in the north-east corner of the hamlet that are designated Hamlet Industrial in the Land Use Bylaw. Some expansion of this district onto the north portion of Block Y may

be possible to allow for some light industrial lots, although sewer service would be an issue.

- Similarly, short term commercial development shall be directed to the existing vacant parcels in the hamlet that are designated Hamlet Commercial in the Land Use Bylaw.
- In order to ensure that only appropriate types of activities are allowed on these parcels, the existing Hamlet Commercial District should be used, and amended to include specific light industrial and service commercial uses suitable to a hamlet location.
- In the long term, commercial development should be concentrated in the westerly part of Suffield, and additional commercial lots may be established, in accordance with the Development Concept of this plan.
- Future development of commercial and light industrial lots on land west of First Street will require the dedication of appropriate road rights of way, as well as the construction of roads, meeting all County standards. Additional land for a storm pond in this area will be required also.
- Home-based businesses that comply with the relevant regulations of the Land Use Bylaw are an appropriate type of commercial activity in the hamlet.

4.4 Parks and Open Space

Currently, there is a small park next to the Community Hall property, as well as a larger Municipal Reserve parcel north of Ronald Avenue that has a baseball diamond. As the population of Suffield grows, there will be the need for additional open space and recreational facilities.

Parks and Open Space Policies

- As hamlet land is subdivided in the future, municipal reserve shall be dedicated in accordance with the Municipal Government Act to provide additional park space or to establish buffers between incompatible uses.
- The County and local community groups should work together to enhance and improve existing park facilities in Suffield.
- A park shall be included in any future residential subdivision west of First Street in accordance with the hamlet Development Concept.
- Land adjacent to the highway that is not suitable for residential development may be used for other recreational activities such as playing fields or community gardens.
- Land that may be required for storm water management facilities such as detention ponds may also serve an open space function.

5.0 Transportation

5.1 Existing Road Network

The road network is comprised of the local hamlet streets that connect to either rural roads, Secondary Roads or the Trans Canada Highway. At this time there are two recognized hamlet access points to the highway, as well as a third point largely related to traffic associated with military vehicles moving from rail cars on the south side of the highway, crossing the highway and travelling through the hamlet to get to the military base.

At the west end of the hamlet, the Trans Canada Highway intersects with Provincial Highway 884 that provides access to points north, including C.F.B. Suffield. Access to Suffield from Provincial Highway 884 is possible at Ellice Avenue which runs along the north edge of the hamlet and continues east as Township Road 150.

5.2 Hamlet Road System

The existing road system in the hamlet is comprised of a series of streets and avenues in a common grid pattern, with the blocks running north-south. This grid is interrupted in a number of places due to the angle of the highway and railway running through the hamlet. These hamlet streets have no sidewalks, curbs or gutters and are built to a rural standard with ditches or swales to direct and store storm water run-off. All hamlet road rights of way are very wide at 24.38 metres.

Roads and Transportation Policies

- Any residential or commercial expansion in Suffield will require the dedication of road rights of way and the construction of roads by the land developer.
- In new subdivisions, local streets shall be designed by an engineer and constructed to County specifications, and shall be paved with curb and gutter design using over-land drainage methods.
- For existing infill properties, access will require the installation of an approach with a culvert for each lot. The location and construction of the approach shall be addressed as part of the Development Permit approval process.
- The development of commercial and light industrial properties shall include the provision of on-site parking for customers and employees.
- In order to provide for phased subdivisions, only those portions of roads that are required to serve each development phase need to be constructed, provided a temporary turn-around bulb can be constructed to County standards at the end of any terminated street.

5.3 Future Trans Canada Highway Upgrading

It is important that this Area Structure Plan directs future growth and development in the hamlet of Suffield in a manner that takes into account the long-term plans to upgrade the Trans Canada Highway. These plans involve eliminating direct access to the highway from the hamlet as part of the process to establish the Trans Canada Highway as a limited-access freeway.

Access to the highway will be limited to existing or new interchanges. It is expected that a new interchange would be constructed west of Suffield to connect with Provincial Highway 884, and this would also provide access to Suffield along Ellice Avenue.

Highway Impact Policies

- Any residential or commercial expansion in Suffield must take into account the long-term upgrading plans for the Trans Canada Highway and the ultimate removal of the two existing direct access points.
- New residential subdivisions shall be located a minimum of 40 metres from the highway right of way.
- Highway commercial development in the hamlet should be directed to land that is in close proximity to Provincial Highway 884 as this will be the best and logical location, once the highway upgrading has occurred.

5.4 Rail Access and Military Traffic

Rail access is required for the British Army Training Unit at C.F.B. Suffield. Most of their equipment and vehicles arrive by rail and is unloaded in the right of way between the CPR mainline and the Trans Canada Highway. The vehicles are then driven across the highway, through the hamlet and onto the base.

In the long-term, this crossing will be eliminated and these vehicles will have to use the established interchange and road system to move between the rail line and the base.

In the interim, it is expected that this military traffic will continue to move across the highway and through the hamlet. The proposed concept plan allows for these movements through the west portion of the hamlet that will be developed for commercial uses in the future.

6.0 Municipal Servicing

6.1 Municipal Water System

The hamlet currently receives treated water from CFB Suffield, which flows to the hamlet's reservoir and pump station where, chlorine levels are monitored and adjusted, and the system pressurized.

The current water agreement between CFB Suffield and the County stipulates that CFB Suffield will supply a maximum of 7500 cubic meters per month to residential properties only. New commercial or industrial developments will be required to develop their own water supplies. Based upon recent consumption tendencies in the hamlet, it is anticipated that this allotment should be adequate for the hamlet to grow to a population of 300.

Growth beyond the 300 population level could be approved if reduced water usage trends become apparent. Watering restrictions during the peak consumption summer months could also be utilized if there are development pressures to grow beyond the 300 population level. Alternatively, an additional raw water supply could be investigated.

The distribution system includes a 150 mm diameter main loop with 50 mm and 75 mm branch mains, as shown in Figure 7. New subdivision developments should be serviced with 150 mm diameter mains, connected to the existing 150 mm water main loop. Proposals for the development of individual lots adjacent to 50 or 75 mm water lines should include an evaluation of adequate water supply to that specific lot, by a professional engineer.

6.2 Sanitary Sewer System

The sanitary sewer system consists of a collection system including 200 mm diameter sewers and a lagoon which is operated by Cypress County. The system was designed for a population of 500 and thus, is expected to service the community for the foreseeable future.

The area designated **Stage 1 Residential Expansion**, in the Conceptual Subdivision Design (Figure 6), can be serviced with an extension from Baynes Avenue, with minor fills required to provide frost protection for the sewer main. However significant earth fills will be required to provide adequate drainage from these lots. The existing ground elevations in the **Stage 2 Residential Expansion** area are significantly higher and thus, consideration should be given to planning the grading of Stage 1 in conjunction with Stage 2. The design for the sanitary sewer on 8th Street should take into consideration the potential for servicing the Future Industrial area.

The southern portion of the **Future Industrial** area on 8th Street can be serviced with an extension from Baynes Avenue, however adequate frost protection on the sewer main for the northern portion is not achievable without deep fills (i.e., greater than 1.5m).

While the sanitary sewer in 1st Street has the capacity to service the **Future Residential and Future Commercial** areas on the west side of the hamlet, careful planning will be needed to ensure that gravity sewers can be installed. It is recommended that a detailed grading plan for the entire area be completed prior to any development in these areas, to

ensure that adequate cover over the sanitary sewer is achievable.

Figure 8 shows one potential scenario for sanitary servicing in the Future Residential and Future Commercial areas and the Sanitary Sewer System Table (Table 2) identifies locations where earth fills would be required to provide adequate frost protection.

6.3 Storm Water Management

The hamlet's drainage system currently consists of road ditches and culverts; however the system does not appear to function to current standards. Ditch characteristics like width, depth, side slopes, and longitudinal slopes vary considerably and in some locations, are nonexistent. There are areas where the ditches encroach onto private property or where they have been filled for driveway approaches without installing culverts. There are a number of locations where positive surface drainage is not achieved resulting in low spots, or sloughs on private property. This can also result in road safety and durability problems as water pools over and adjacent to existing roadways.

Storm water runoff from the hamlet is received by boundary roadway ditches, and in some instances, could flow into adjacent agricultural lands. A portion of the hamlet drains to the east of 8th Street, through the culvert under 8th Street at Baynes Avenue. ***The County should have agreements in place with adjacent landowners to receive the runoff.***

While the system may function tolerably for minor storm events, this is likely due to the relatively low percentage of impermeable surfaces within the developed areas (i.e., large lots) as well as storm water storage capability in the existing ditches. However, increased storm water flows should be expected with the addition of impervious ground cover associated with future development of land within the hamlet. Since increased runoff has the potential to adversely impact the existing system, as well as downstream property, it is imperative that all new applications for development in the hamlet include a storm water management plan, prepared by a professional engineer.

Current standards dictate that storm water must be addressed during the planning, design and construction of our communities. As stated in Alberta Environment's Stormwater Management Guidelines (1999); "With the passage of time, it has become apparent that the degree of flood protection provided by urban drainage systems designed primarily for convenience is not adequate. Provision must also be made to control the excess runoff resulting from infrequent events." Thus, the storm water management plans should address runoff from various 1:100 year storm events.

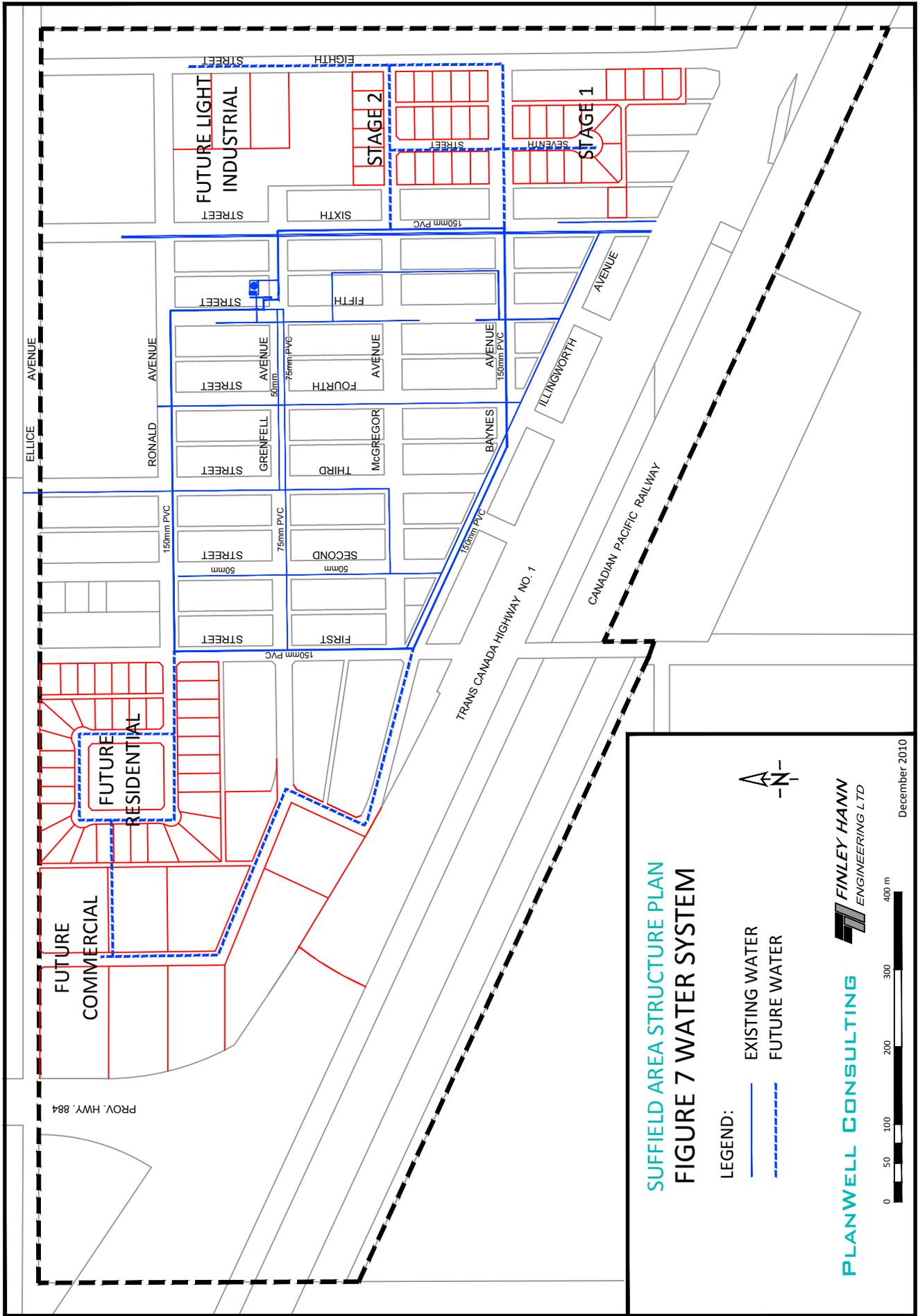
The area designated **Stage 1 Residential Expansion** is located in a low area. Significant fills will be required to ensure positive drainage from the new lots, and careful planning and engineering is required to ensure that adjacent properties are not adversely affected.

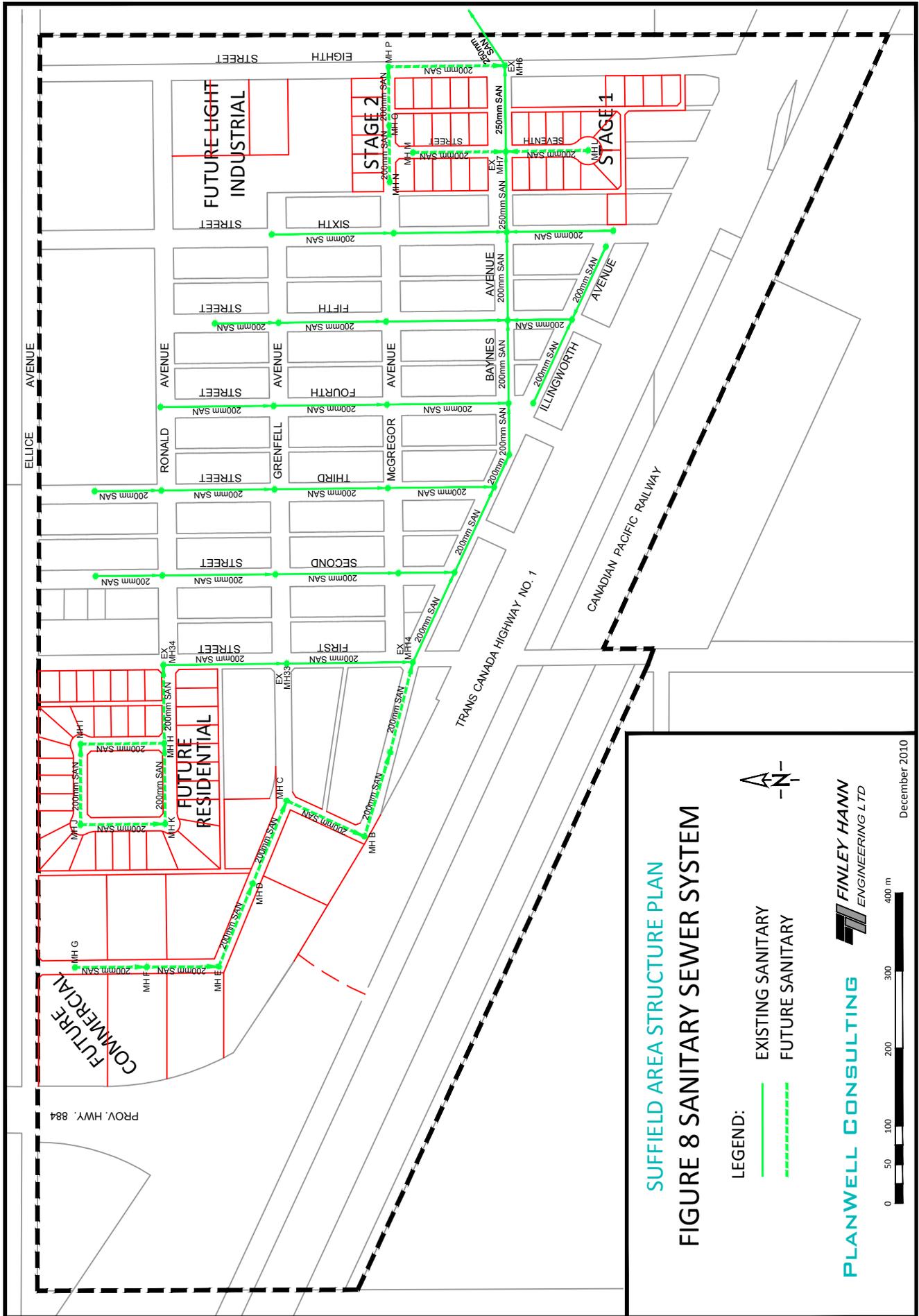
The area designated **Stage 2 Residential Expansion** currently drains to existing roadway ditches along 8th Street and Baynes Avenue and the drainage from the ultimate developed lots should follow this pattern. In addition, the capacities of downstream ditches and culverts should be checked to confirm their adequacy.

The area designated **Future Light Industrial**, drains to the north, and storm water management plans for the development of this area should include the design of appropriate facilities to address the anticipated increase in runoff as well as storm water quality concerns. If runoff to adjacent agricultural land is anticipated, appropriate agreements with the landowner should be negotiated and registered on title.

Most of the runoff from the areas to the west, designated **Future Commercial** and **Future Residential**, flows to internal sloughs and only a small amount flows to the Trans Canada Highway ditch with very little flowing to 1st Street. Development in this area should be preceded by the design and development of appropriate facilities, to address increased runoff. Options include infiltration/evaporation basins with zero discharge, or wet/dry storm ponds if a suitable discharge location can be determined. Storm pond discharge options include:

- The Trans Canada Highway ditch, however the design would have to be approved by Alberta Transportation.
- Piped flows to the existing ditch system within the hamlet. The adequacy of downstream capacities would have to be confirmed, and major upgrades to the existing ditch system along Illingworth Avenue and Baynes Avenue should be expected.





MANHOLE	INVERTS		EXISTING GROUND	COVER	
EX MH14	W	747.662	751.23	3.483	
	E	747.632			
	N	747.747			
MH A	W	748.172	751.54	3.368	
	E	748.142			
MH B	N	748.678	751.59	2.912	
	E	748.628			
MH C	W	749.288	752.33	3.042	
	S	749.238			
MH D	W	749.781	751.18	1.399	*
	E	749.751			
MH E	N	750.294	750.81	0.516	*
	E	750.244			
MH F	N	750.696	752.69	1.994	*
	S	750.666			
MH G	S	751.07	753.36	2.29	*
EX MH34	W	749.685	753.21	3.525	
	S	749.635			
MH H	N	750.139	751.78	1.641	*
	E	750.089			
	W	750.12			
MH I	W	750.621	753.91	3.289	
	S	750.571			
MH J	E	751.037	753.09	2.053	*
	S	751.037			
MH K	N	750.6	752.41	1.81	*
	E	750.55			
EX MH 7	W	743.136	747.52	4.364	
	E	743.106			
	N	743.156			
	S	743.156			
MH L	N	743.581	746.02	2.439	*
MH M	S	746.22	749.22	3	**
EX MH 6	W	742.678	747.57	4.872	
	NE	742.648			
	N	742.698			
MH P	S	743.299	749.56	6.231	
	W	743.329			
MH O	W	743.663	749.57	5.907	
	E	743.633			
MH N	E	743.967	750.97	7.003	

NOTES:

ALL INVERTS CALCULATED USING 0.40% PIPE SLOPE UNLESS NOTED OTHERWISE.

*DENOTES LESS THAN MINIMUM COVER.

**PIPE SLOPE @ 2.6%.

TABLE 2 - SANITARY SEWER SYSTEM

7.0 Implementation

7.1 Levels of Implementation

Implementation of the plan will require four levels of action:

- Public Education - The plan should be widely distributed and publicized to ensure that private investment plans correspond to public objectives.
- Coordination - Approval of the Plan by the Minister of Transportation is required to ensure conformity with highway development plans and to minimize delays in the processing of subdivisions.
- Budgeting - The County capital improvement budget should support the plan.
- Regulatory - The plan should be adopted by by-law and the Land Use By-law should be amended to reflect proposed changes in land use.

7.2 Land Use Districts

The current Hamlet Commercial and Hamlet Industrial Districts in the Cypress County Land Use Bylaw provide for a limited range of land uses. It is recommended that the Hamlet Commercial District be expanded to allow for service commercial activities, such as welding shops and other light industrial uses, in this district in a regulated manner by limiting lot size and outside storage. Other regulations could be incorporated to ensure that these activities do not have a negative impact on the residential character of the hamlet.

7.3 Land Use Bylaw Amendments

Based on the Development Concept in this plan, existing land that is currently in the A2 General Agriculture District could be re-designated to the appropriate hamlet land use districts. However, it is recommended that these amendments only occur at the time of a proposed subdivision or development.