

*Approved*

## **Outline Plan**

**Alluvium  
Redwater, Alberta**

**WSP Canada Inc.  
[www.wspgroup.com](http://www.wspgroup.com)**

**Our file: 131-21455-00**

**May 2, 2014**

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## 1. INTRODUCTION

### 1.1 Purpose

Recent economic activity in the area surrounding Redwater has created a need for additional housing within the Town. The proposed development would take advantage of underutilized land near the Town centre to develop 61 new residential dwelling units. This development proposes a mix of medium density housing options (duplexes and row housing). The proposed housing types provide choice and diversity in the housing market in the Town of Redwater. The higher density housing provided by this development meet the policies outlined in the Town's Municipal Development Plan and allow for greater utilization of the Town's existing infrastructure resources.

### 1.2 Site Location and Context

The subject site is centrally located in the Town of Redwater, north of Highway 38 (48 Avenue), east of the CN Railway and west of 44 Street. The lot, legally known as Plan 882HW, Block B (located within SE30-57-21-W4M) encompasses approximately 8.43 ha (20.83 ac) of land of which 6.72 ha (16.61ac) is proposed to be developed including a 1.14 ha (2.82 ac) stormwater management pond.

The lands to the north and south of the subject parcel are currently developed as residential, with primarily single family detached developed to the south and a manufactured home park developed to the north. It should be noted that there is a parcel zoned for high density between the proposed development and the manufactured home park. The "downtown" commercial core is located to the west of the site across the CN Railway and Industrial development is located to the east.

## 2. DEVELOPMENT CONCEPT

As per the enclosed site plan (Appendix A), the proposed residential development is committed to integrating and extending the residential land use pattern currently in the area. The proposed development is located adjacent to an existing low density residential area and provides a good transition between this low density residential area and the high density residential area to the north. In addition, the proposed development is compatible with these existing residential areas and the mixed use commercial, industrial and residential development in the downtown core to the east.

The development concept proposes 28 new duplex units and 33 new rowhousing units on 4.14 ha of land. A strip of open space is proposed between the CN Railway and the development which will include an earth berm to provide a buffer between these two uses to reduce potential noise concerns from the railway. The remaining lands will consist of roadways and green space. The following land use districts have been used to prepare the development concept:

- Medium Density Residential (R-5) District
- Semi-Public (SP) District

A stormwater management pond is to be developed to the north of this site to service this development and surrounding area.

### 2.1 Residential

Proposed residential land uses include duplexes and row houses. The various housing types provide opportunities for existing and future residents of varying family composition and income levels. Tables 1, 2 and 3 show the land use statistics and housing mix within the development concept area.

**Table 1: Land Use Statistics**

	<b>Area (ha)</b>	<b>% of GDA</b>
<b>Total Property</b>	<b>8.43</b>	<b>--</b>
Not included in proposed development	1.71	--
<b>Gross Developable Area</b>	<b>6.72</b>	<b>100.0%</b>
Open Space	1.74	25.9%
Circulation	1.17	17.4%
Stormwater Management Pond	1.14	17.0%
<b>Net Developable Area</b>	<b>2.68</b>	<b>39.7%</b>

**Table 2: Development Types**

	<b>Area (ha)</b>	<b>% Net Developable Area</b>	<b>Units</b>	<b>Density (units/ha)</b>	<b>% of Total Units</b>
Duplex	1.55	57.84%	28	18.1	45.90%
Rowhousing	1.13	42.16%	33	29.2	54.10%
<b>Total</b>	<b>2.68</b>	<b>100.00%</b>	<b>61</b>	<b>22.8</b>	<b>100.00%</b>

## 2.2 Open Space and Stormwater

A berm is proposed adjacent to the railway track to provide a buffer between the railway tracks and the proposed development. The developer will work with the Town to develop this berm with a height and slope acceptable to the municipality. Portions of the berm may be located within the rear yard of the residential developments. Should this be required, a restrictive covenant will be registered on the affected lots in order to protect the berm in perpetuity.

The remnant area next to the tracks is to remain as green space to provide some amenity space for residents in this area. Additional green space is currently shown in a central location within the development concept. An abandoned wellhead is located on this site. The wellhead will be removed prior to development of this subdivision however no development is proposed on the site containing the abandoned wellhead.

A stormwater management pond approximately 1.14 ha (2.82 ac) in size is proposed for the area to the north of the residential development. This pond will service the proposed development and some of the surrounding developments. The conceptual location of the pond is identified in Appendix B.

## 2.3 Roads and Access

The proposed development is to be serviced by a 20 m road right of way with the majority of development also serviced by lanes. The lanes allow for the access to the rear of the property enabling garages for the townhouses to be located off of the lane. All duplexes within the proposed development area will include front attached garages.

The local road network will be developed to a 9 m wide local road standard with sidewalks along both sides of the street and off set from the curb to enable planting of street trees. A buffer area located along railway may be developed to include trails to provide recreational and alternative transportation opportunities through this development. This is in line with the Town's Municipal Development Plan policies which encourage the development of recreational trails throughout the community.

A Roadside Development Application has been made to Alberta Transportation as the proposed development is within 800 m of a provincial highway (Highway 38/48 Avenue).

Two (2) accesses are proposed to the new development: one via existing 47 Street onto Highway 38 (48 Avenue) and new access proposed east of property to 44 Street. According to the Traffic Impact Assessment (TIA) prepared at the time of this application, no upgrades are required to any of the existing roadways as a result of the proposed development. Overall, the traffic generated by the proposed development will not have significant impacts on the intersections identified in the TIA study. However, it was noted that there are several upgrades planned for arterial roads that will improve access and traffic flows around the subject site. The full TIA Report is provided in Appendix D.

## 2.4 Site Servicing

### 2.4.1 Water

There is currently a 450 mm Town water line 44<sup>th</sup> Street and 51 Avenue. A 200 mm line will be connected to this main to service the site and will be connected through to the existing 150 mm line located at 47 Street. The waterline will form a loop through the majority of the development with the exception of a small length to service the cul-de-sac. A conceptual schematic layout of the water servicing plan is outlined in Appendix B.

### 2.4.2 Wastewater

The Town's Master Services Plan indicates a 250 mm sanitary line which runs along 47 Street and through the property to the north. The Master Services Plan indicates that this line is subject to surcharging however we understand from the Town that this is not currently an issue and does not occur. The Town has indicated that this existing line has the capacity to accommodate the proposed development without surcharging occurring. The intention is to have the development connect into the existing sanitary system as indicated in the conceptual servicing plan outlined in Appendix B.

### 2.4.3 Stormwater

The development proposed to connect into a new stormwater management pond that would be located to the northeast of the development as indicated in Appendix C. The pond will be designed as a wet pond that will provide an opportunity for amenity features (i.e. open space, walking trails) for nearby residents. The pond will be designed to accommodate the stormwater runoff from the catchment area, which includes the development site, the open space area and the future commercial development area, for a 1:100 year flood event. The stormwater will be released from the pond at the maximum allowable discharge rate of 2.5 L/s/ha.

A conceptual schematic of the stormwater management system is provided in Appendix C.

### 3. DOCUMENT REVIEW

In order to properly evaluate the proposed development a review of existing land use policies and growth strategies is required. Furthermore, technical documents must be prepared and reviewed to identify impacts and servicing requirements for the proposed development during the detailed design stage. This section highlights the relevant findings from existing policy documents and technical studies completed to support this development:

#### 3.1 Planning Documents

As part of the review of the subject site and preparation of the proposed development concept the Town's Municipal Development Plan and Land Use Bylaw were reviewed. The following is a summary of those document reviews.

##### 3.1.1 Municipal Development Plan

Within the Municipal Development Plan *Map 1 – Future Land Use Map* identifies this site at "Downtown Core".

*5.3.1 To ensure an adequate supply of residential land and provide a suitable mix of housing to meet people's varying space requirements, economic circumstances and aspirations.*

The proposed development is comprised of duplexes and rowhousing which provides additional housing choice in the Town of Redwater. There is currently a market demand in the area for the housing types being proposed. As such, the proposed development complies with this policy.

*5.3.2 To ensure the development of a residential environment which enhances the quality of life of the Town's residents.*

The proposed development consists of a higher density development and is located near the downtown core. Sidewalks are located on both sides of the street to improve pedestrian movement and walkability of the neighbourhood. In addition, rear lanes and building facades located closer to the street improve the urban form and help to create a more desirable residential environment. To help ensure development is of a high quality form the developer will be implementing architectural design guidelines in this neighbourhood, which will be subject to review and approval by Council and registered on title of each lot as a restrictive covenant. These design guidelines will be administered by the developer.

*5.5.2 To ensure the development of an economical, efficient and environmentally sustainable municipal servicing system which will serve both the existing community and also future growth areas within the Town.*

The proposed development site is located in a central area within the Town with easy accesses and logical extension of existing infrastructure. The proposed development includes higher density and alternative housing types not typically seen in this community. The proposed density and the use of the existing infrastructure create a development that has an efficient use of the Town's existing land and infrastructure resources.

*7.1.4 In order to ensure that the Downtown Core area remains and is enhanced as a viable "downtown hub" area, any development of residential uses in the Downtown Core, other than residential uses which are strictly accessory to commercial uses or located in apartment buildings where the main floor of the building is entirely occupied by commercial uses, will be considered as discretionary uses and considered on a case by case basis.*

Based on the above policy we understand that the proposed residential development will be considered a discretionary use. The developer has worked closely with the municipality to ensure the proposed development meets the intent of this policy by developing at a higher density while also considering the form of the surrounding residential neighbourhood and its relative isolation to the downtown based on the railway line, which creates a division. In our opinion, the proposed development provides a balance, providing higher density without adversely affecting the character of the existing neighbourhood to the south.

*7.1.8 The Town will endeavour to ensure that the maximum amount of land in the Downtown Core area which is currently vacant or being used for residential purposes is developed for commercial uses, mixed uses or high density residential uses within the time frame of this Plan.*

As noted above, the proposed development is of a higher density than typically seen in the Town of Redwater. Through the review of the existing servicing and the surrounding neighbourhood the proposed development concept was created. While the site is designated “Downtown Core” in the Municipal Development Plan it is separated from the historic downtown commercial core by the CN Railway. The proposed development is of a higher density, consistent with the intent of this policy, while providing a good transition between the downtown core and the residential area to the south.

*8.1.1 In cooperation with developers and other government agencies, the Town will endeavour to ensure the provision of:*

- a) a range of dwelling and lot sizes;*
- b) a variety of housing types;*
- c) an adequate supply of rental units;*
- d) social housing to meet special housing needs in the community; and*
- e) affordable non-market housing to meet the needs of the community.*

The proposed development provides for housing types that are not typical for this community. While this development is smaller and does not provide a great range of lot sizes, dwelling sizes or housing types, it does provide an alternative dwelling size and type within the Town.

*8.1.2 All new or revised residential area structure plan areas will have a residential housing mix normally reflecting a ratio of 80% low and medium density residential development and 20% high density residential development. A larger percentage of higher density residential development may be allowed by the Town if the developer can demonstrate the following:*

- a) that the development can be serviced in a manner that is consistent with the Town’s Master Servicing Study;*

The proposed servicing for the site is consistent with the master Services Plan Update, prepared by Associated Engineering in August 2010. This plan provides the ability to develop a stormwater management pond in the area to the north and indicates connections to the existing water and sanitary lines. The report does include comments that the modeling indicates potential surcharging of the existing line. It is our understanding, from discussions with the Town, that there is capacity to accommodate the sanitary from the development within these existing sanitary lines without the system surcharging. We also understand that there is sufficient pressure in the system to deliver water to the residential dwellings.



*b) that the overall development pattern is complementary to adjacent land uses and infrastructure;*

The proposed development takes into consideration the surrounding context and endeavors to provide a higher density residential development that provides a sensitive transition to the adjacent residential development to the south.

*c) that the development will provide a high percentage of social and/or affordable housing; and*

The proposed duplexes and row housing will provide for greater housing choice within the Town of Redwater and a more affordable market housing option than a single detached dwelling, which is the more typical market housing option in the Town.

*d) that the development will provide a higher percentage of public amenity areas, including but not limited to, park areas, trails, recreation amenities and/or public art.*

While there is no formal Municipal Reserve area within the proposed development, the railway buffer, utility reserve area and the proposed stormwater management pond to the north provide natural recreation corridors. During consultation with the Town our client was advised that they did not require specific Municipal Reserve lands due to the size of the development.

*8.2.2 The Town will require the preparation and approval of an Area Structure Plan or Outline Plan/Development Concept prior to the approval of a new residential neighbourhood. The preparation and costs associated with the preparation of a new Plan or amendment to an existing Plan will be the responsibility of the developer. If the Town incurs costs while reviewing a proposed Plan or Plan amendment then costs associated with the review will also be the responsibility of the developer.*

This Outline Plan has been prepared as per the requirements of policy 8.2.2. The Outline Plan identifies any required infrastructure upgrades or development restrictions associated with the proposed plan.

*8.2.3 Outline Plans/Development Concepts will only be permitted, at the discretion of the Subdivision Authority, for parcels of land smaller than 20 ha (50 ac) and/or developments that will generate a total residential population of less than 280 people within the Plan area.*

The proposed development site is less than 20 ha (a total of 4.14 ha residential development) and includes a total of 61-63 dwelling units which will result in a population of approximately 146-151 persons based on an average of 2.4 persons/dwelling (2011 StatsCanada figure for "Average number of persons in private households" in Redwater, AB). As per policy 8.2.3 an Area Structure Plan was deemed unnecessary and this Outline Plan was prepared to meet the requirements of the municipality.

*8.2.5 The Town's overall density of residential development within a designated neighbourhood unit should be approximately 30 persons per net residential hectare. As average household size continues to decline, however, a somewhat higher overall density standard may be considered in specific circumstances.*

As noted above, the proposed development will result in approximately 146-151 persons based on an average of 2.4 persons/dwelling (2011 StatsCanada figure for "Average number of persons in private households" in Redwater, AB). The overall density of this development will result in a residential density of approximately 36 persons per hectare when reviewing the gross developable area. If you only include the net developable area the density is greater with approximately 54 persons per hectare. The proposed development area is very small and

contains only higher density housing options, creating a greater residential density. However it should be noted that the Town is comprised of development which is generally of a much lower density and the impact on the density of the overall two is likely marginal. Due to the location and scale of this particular development a higher density development option is likely suitable.

*10.1.3 Control of access along sections of 48 Avenue and 44 Street, which comprise part of the Provincial Highway system (Highway #38), shall meet the requirements of Alberta Transportation.*

A Roadside Development Permit Application, including the complete traffic impact assessment, has been submitted to Alberta Transportation for review and approval.

*10.2.1 The Town will require the provision, throughout the Town, of a reliable water supply and distribution system in terms of capacity and supply rate, an environmentally acceptable sanitary sewage collection and treatment system, and an efficient stormwater collection and management system. The provision of these systems will be funded either by senior levels of government or by new development.*

As outlined in Section 2.4 of this report, the proposed development will tie into the existing water and sanitary lines and a new stormwater management pond is to be developed to the north of the site to service this development and the surrounding area.

*10.2.4 Where appropriate, municipal services in new areas will be integrated with existing facilities.*

As noted in Section 2.4 of this report the servicing infrastructure for the proposed development will tie into the existing water and sanitary lines. This is further outlined in the conceptual servicing plan in Appendix B.

*10.2.5 The Town will require the preparation of a servicing scheme and a detailed geo-technical study prior to area structure plan or large area subdivision approval.*

A Geotechnical Investigation was conducted in this area and it was determined that the site was suitable for the proposed development. The complete geotechnical report can be found in Appendix E.

*10.3.1 Any new subdivision near a pipeline right-of-way shall be designed in such a manner that a 15.2 m (50 ft.) setback from the nearest edge of any pipeline right-of-way to any permanent structure, may be provided on all lots adjacent to the right-of-way.*

No pipelines right-of-ways are located within the proposed development area. An abandoned well is located within the proposed development area however as part of the proposed development we understand that this wellhead will be removed and the land surrounding the wellhead remediated.

### 3.1.2 Land Use Bylaw

A Land Use Bylaw splits the municipality up into various districts which outline specific regulations regarding what uses are permitted on a site and guides where and how development will occur on a parcel. Currently, the site is districted 'Semi-Public (SP) District' which purpose is to "provide for development of a public service, social service, heritage, or cultural nature, or other uses which are supportive to such uses, whether operated for profit or not-for-profit."

In order to develop this site as a residential development the land will need to be redistricted to Medium Density Residential (R-5) District. The Medium Density Residential (R-5) District will permit the development of both the duplexes and the rowhousing on this site. All land identified as green space, including the stormwater management pond area, will be retained as Semi-Public (SP) District.

It should be noted that the development will require a variance on the front yard setback requirement for the proposed rowhouses. The Land Use Bylaw requires a front yard setback of 7.6 m however it notes this may be reduced if the parking is provided at the rear of the development. All of the proposed rowhouses are serviced by a rear lane and as such the proposed development concept has the rowhousing moved much closer to the street, with a minimum 3.0 m setback. This will help to create a better residential form along the street frontage and better utilize the development pocket on the site. Garages for the rowhouses will be located at the rear of the site will require a variance as well. This variance will permit the garages to be developed further back on the lot providing a greater amenity space within the rear yard between the dwelling and the detached garage.

## 3.2 Other Documents

### 3.2.1 Phase I Environmental Site Assessment

The Phase I Environmental Site Assessment identified the existing abandoned well and associated groundwater monitoring wells as areas of potential concern. A subsurface investigation was recommended in the vicinity of the abandoned well site and groundwater monitoring wells to identify if there were any contaminants of potential concern. We understand that the Town is working with Imperial Oil Resources Ltd. to take steps to remove the abandoned well and remediate the site prior to development commencing.

A copy of the Phase I Environmental Site Assessment can be found in Appendix F.

### 3.2.2 Geotechnical Investigation

Geotechnically, the site soil conditions are considered favorable for the proposed development. It was noted that a high water table exists in this area which will need to be considered with the proposed development. Engineering solutions will need to be implemented to address the high water table.

The geotechnical investigation noted that there were abandoned pipelines in the area that may have caused some contamination. A copy of the Geotechnical Investigation Report can be found in Appendix E.

### 3.2.3 Traffic Impact Assessment

A Traffic Impact Assessment was completed for the proposed development and a copy of the report can be found in Appendix D. This assessment indicated that no upgrades are required to any of the existing roadways as a result of the proposed development. It was noted that there are several upgrades planned for arterial roads that will improve access and traffic flows around the subject site.

In addition to the completed TIA a Roadside Development Application was made to Alberta Transportation as the proposed development is within 800 m of a provincial highway (Highway 38/48 Avenue).

### 3.2.4 Town of Redwater Master Services Plan Update

The servicing plan was reviewed as part of the development of this concept. It was identified that there were existing infrastructure services within the area which the proposed development could tie into. The Master Services Plan update notes that there is sufficient water pressure in the water lines to services this development. While it was noted in this Plan that there may be potential surcharging of the existing sanitary line, it is our understanding from discussions with the Town, that there is capacity within the existing sanitary lines and system to accommodate the sanitary from the development without the system surcharging. Lastly, the Plan identifies the need for a stormwater management pond to the north of the residential development. This stormwater management pond will be designed as part of the detailed engineering design.

## 4. CONCLUSIONS

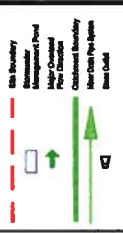
The proposed development provides alternative housing choice to meet the current market demand within the Town of Redwater and meets the policies of the Municipal Development Plan and utilizes existing infrastructure resources in the community. The development is also sensitive to the existing context to provide a use and density that is compatible with the surrounding development.

All completed technical studies have indicated that the proposed development is suitable for the subject site. No significant upgrades to the existing infrastructure are required to service this development. A more in depth review of the servicing will be completed during the detailed design stage. It is recommended that the Town work with Imperial Oil Resources Ltd. to remove the abandoned well located within the development area and remediate the surrounding site. This site will then be retained as green space for area residents.

KEY PLANS



LEGEND



NUMBER OF LOTS	PERCENTAGES
DUPLEX	28
ROW HOMES	55
TOTAL	83

LENGTH OF ROAD
MAIN ROAD
COLLECTOR
TOTAL LENGTH

TOTAL AREA OF DEVELOPMENT
Area of Plot (m <sup>2</sup> )

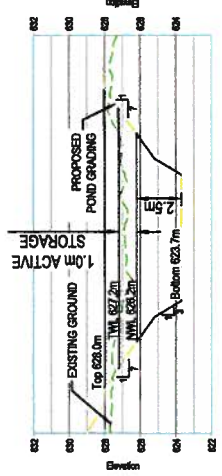
NOTES:  
 1. Stormwater management ponds shall be designed to store runoff from the catchment area.  
 2. Stormwater management ponds shall be designed to store runoff from the catchment area.  
 3. Stormwater management ponds shall be designed to store runoff from the catchment area.

DESIGNED BY: M. ROBERTSON / A. WILSON  
 DRAWN BY: N. ROBERTSON / A. WILSON  
 SHEET NO: 6.2

CONCEPT STORMWATER PLAN  
 RED WATER, ALBERTA

SCALE: 1:500

WSP  
 WATER SERVICES PROFESSIONALS



NWL = 623.2 m  
 STORAGE REQUIRED = 4000 m<sup>3</sup>  
 CAPACITY AT FREEBOARD = 13,561 m<sup>3</sup>  
 PROPOSED = 6.8 m  
 MAXIMUM DISCHARGE RATE = 2.5 L/s/ha

