



May 2013

Queens Business Park SW 36 & NW 25 Industrial Area Structure Plan

SW ¼ Sec 36-38-28-W and NW ¼ Sec 25-38-28-W4

Red Deer. Alberta

Bylaw No. 3501/2013

Adopted July 8, 2013



TABLE OF CONTENTS

1	INTRODUCTION.....	1
1.1	PURPOSE.....	1
1.2	AREA LOCATION	1
1.3	PLANNING FRAMEWORK	1
2	EXISTING SITE CHARACTERISTICS	2
2.1	SITE DESCRIPTION AND NATURAL FEATURES.....	2
2.1.1	<i>Tree Stands and Wetlands</i>	2
2.2	RESOURCE EXTRACTION	3
2.3	LANDFILLS	4
3	DEVELOPMENT CONCEPT.....	4
3.1	VISION.....	4
3.2	OBJECTIVES	4
3.3	LAND USE	5
3.4	INDUSTRIAL AND BUSINESS	5
3.5	COMMERCIAL.....	5
3.6	GREEN INFRASTRUCTURE AND ECO-INDUSTRIAL PARK.....	5
3.6.1	<i>Eco-Industrial Park</i>	5
3.7	PEDESTRIAN AND VEHICULAR CIRCULATION	6
3.7.1	<i>Trail System</i>	6
3.7.2	<i>Transit</i>	6
3.7.3	<i>Roadways</i>	7
3.8	OPEN SPACE	7
3.8.1	<i>Public Utility Lots</i>	7
3.8.2	<i>Municipal Reserve Dedication</i>	7
3.8.3	<i>Environmental Reserve</i>	8
3.9	LAND USE STATISTICS	8
4	SERVICING CONCEPT.....	10
4.1	STORMWATER AND DRAINAGE	10
4.2	SANITARY SEWER.....	10
4.3	WATER DISTRIBUTION	10
4.4	SHALLOW UTILITIES.....	11
4.4.1	<i>Power Distribution</i>	11
4.4.2	<i>Natural Gas Distribution</i>	11
4.4.3	<i>Telecommunications</i>	11
5	SAFETY.....	11

5.1	EMERGENCY SERVICES	11
5.2	CPTED.....	11
6	IMPLEMENTATION	13
6.1	DEVELOPMENT PHASING	13
6.2	AMENDMENTS TO THIS PLAN	13
6.3	EXISTING RESIDENTIAL TRANSITION	13

Appendices

FIGURE 1	—	EXISTING CONDITIONS
FIGURE 2	—	PROPOSED LAND USE AND ROADS
FIGURE 3	—	STORM WATER SERVICING
FIGURE 4	—	SANITARY SERVICING
FIGURE 5	—	WATER SERVICING
FIGURE 6	—	PROPOSED PHASING

1 Introduction

1.1 Purpose

The plan is intended to be an Industrial Area Structure Plan (IASP) for the Queens Business Park located within the *West QE2 Major Area Structure Plan* area. IASP are plans for industrial subdivisions, generally covering one or more quarter sections of development, prepared by developers, showing how it ties into the proposed application of the *West QE2 Major Area Structure Plan* (MASP), Council policy, and Municipal and Intermunicipal Development Plans.

This plan describes the sequence of development, industrial land uses and location of transportation routes and utilities within the plan area and has been guided by the *West QE2 Major Area Structure Plan*.

1.2 Area Location

As illustrated in Figure 1, the plan area is comprised of approximately two quarter sections of land totalling 132.8 hectares. It should be noted that the total area includes the Range Road 281 right-of-way. The area as per the land titles is 129.40 hectares. It is located on the west side of the Queen Elizabeth II Highway and south of Highway 11A, within NW 25-38-28-W4 and SW 36-38-28-W4, on the west end of the City of Red Deer, Alberta.

The plan area is bordered by the Burnt Lake Business Park to the east, a proposed Business Park to the northeast, and undeveloped agricultural land to the north, west and south. The subject land is bounded by Range Road 281 to the west.

Prior to the adoption of the *West QE2 Major Area Structure Plan*, the plan area was located within the *Burnt Lake Area Structure Plan* (adopted by Red Deer County Council in March 2000), as the land was previously within the jurisdiction of Red Deer County. These lands were annexed by the City of Red Deer in 2007. The City's *West QE2 Major Area Structure Plan* considered the land uses contained in the *Burnt Lake Area Structure Plan* in its policy development and planning concept. However, due to Red Deer County zoning for NE 26, buffering may be required along the west section line of NW 25, to mitigate the effect of industrial uses on potential adjacent residential development within NE 26.

1.3 Planning Framework

Section 633 of the *Municipal Government Act (MGA)* describes Area Structure Plans (ASP) as providing the framework for the subsequent subdivision and development of an area of land. Additionally, the *MGA* stipulates that ASPs must describe the sequence of development, land uses and location of transportation routes and utilities for the proposed area.

The Queens Business Park Industrial Area Structure Plan (IASP) implements the scope and intent of the City of Red Deer's *West QE2 Major Area Structure Plan*, as well as their *Industrial Planning Guidelines & Standards, Environmental Master Plan (2011)*, and the *Regional Ecological Profile – Proposed Industrial Lands and Associated Natural Areas (2005/2007)*.

The *West QE2 Major Area Structure Plan* indicates that the IASP should be primarily an industrial area, with some public utilities as well as a portion of the plan area designated as an eco-industrial park. The proposed land uses in the Queens Business Park IASP generally conform to those included in the *West QE2 Major Area Structure Plan*.

The Regional Ecological Profile - Proposed Industrial Lands and Associated Natural Areas (2005/2007) provides a detailed overview of the natural environmental features within the plan area along with recommendations for their preservation. In addition, the City of Red Deer's *Industrial Planning Guidelines & Standards* provides guidelines and standards based on Smart Growth principles for the planning and design of industrial areas, including the natural environment, land use, roadways, servicing, heritage, and safety. This document provides the requirements for IASPs and the subdivision approval process.

2 Existing Site Characteristics

2.1 Site Description and Natural Features

As shown in Figure 1, the topography of the plan area is gently rolling with elevations ranging from about 900 m in the southeast corner to about 917 m north of the acreage on the west side of SW 36-38-28-W4. Grades within the plan area are generally less than five percent.

The majority of the 132.8 hectare site is presently agricultural land with limited vegetation and trees remaining. There are three residential acreages present along the west side of the subject lands that have been incorporated into the plan area. The subject lands are presently zoned A1 – Future Urban Development District.

In preparing this plan, the *West QE2 Major Area Structure Plan (MASP)* and the *Regional Ecological Profile- Proposed Industrial Lands & Associated Natural Areas (2005/2007)* were consulted. Figure 1 illustrates the location of Natural Features at the time the eco-space profile was prepared.

2.1.1 Tree Stands and Wetlands

This plan implements the general intent of the *West QE2 Major Area Structure Plan* to preserve tree stands, shelter belts and wetlands, to as great an extent as possible in the development concept for the plan area.

There are a number of tree lines and three larger treed areas in the northwest and southeast sections of the plan area, as shown in the 2010 aerial photograph in Figure 1. These stands consist of both deciduous and evergreen trees and have been identified as natural preservation features in the *West QE2 Major Area Structure Plan*.

Cameo Lake is located on the south side of the site as shown in Figure 1. This 50 acre (20.23 hectare) lake has approximately 15.62 acres (6.32 hectares) within the plan area and extends into the quarter section south of the subject lands. The *Phase 1 Environmental Site Assessment* indicates that surface drainage would collect in various low regions within the plan area as well as in Cameo Lake and the surrounding wetland area.

As identified in the *West QE2 Major Area Structure Plan*, there is a major wetland within the plan area which straddles the northerly boundary of Cameo Lake. The primary function of wetlands is to act as a filter and natural catchment areas for surface water, as well as to recharge and conserve ground water.

As shown in Figure 2, both Cameo Lake and the wetland have been identified as natural preservation features and are classified as Environmental Reserve (ER) and Municipal Reserve (MR) within the development concept as they are sensitive areas with high ecological value.

In addition to Cameo Lake and the major wetland, the MASP identifies a stream which extends from the southern portion of the plan area to Cameo Lake. This stream will be abandoned with the grading of the subdivision, as per the *Industrial lands Sanitary Sewer and Storm Sewer Trunks Project – Pre-Design Report*, by Al-Terra Engineering (2005).

Cameo Lake is fed by approximately 355 hectares of land to the west and north. Options for the management of this lake are identified in the *Industrial Lands Sanitary Sewer and Storm Sewer Trunks Project – Pre Design Report* prepared by Al-Terra Engineering (2005). At this time there are no plans in place to help maintain optimum water levels during a dry season. The developer will be responsible for evaluating the history and for providing recommendations on future operational and maintenance of the lake and its water level at the servicing study stage. The servicing study will be required to provide the following additional details regarding Cameo Lake:

- The history of the lake and its surroundings, including any existing developments.
- The effects of the proposed development, including the eco-industrial development.
- Recommendation for future operations and maintenance of the lake.

In 2004/2005, EXH Engineering Ltd. (now GENIVAR Inc.) completed a flood study on behalf of Serge Bissonnette, who wished to construct on a lot adjacent to Cameo Lake (*Bissonnette Flooding Investigation, Cameo Lake Site - SW 25-38-28-4 (Lot 1 Block 3 Plan 012-2188 April 18, 2005)*). A detailed historical study of Cameo Lake was completed, and estimated a revised/natural 1:100 year floodplain elevation of 905.20 metres. The study recognized natural drainage outlets to the south and east of Cameo Lake. Over the years, modifications to these outlets have impacted the lake levels, resulting in the high water elevation being increased and ranging between 905.5 m to 905.8 m. At this time, the existing 1:100 year flood level is not known, but for the basis of this IASP the 905.2 elevation is being used, and the ER is based on a 30 m setback from that elevation. Based on the higher water elevations, there will be some flooding of the ER area during high rainfall/snow melt events.

There is no special flood protection measures anticipated at this time for lots adjacent to Cameo Lake, other than providing site grading that has been designed to be above the high water level.

2.2 Resource Extraction

As illustrated in Figure 1, the plan area does not contain any operable gas or oil wells. There are three abandoned oil wells as illustrated in Figure 1 and Figure 2 known as Talisman Energy Inc., Chevron Canada Ltd. and Rustum Petroleums Ltd. wells. There were no spills reported in the Energy Resources Conservation Board (ERCB) Environmental Information System Database. Contact has also been made with the relevant companies. Information is still being collected from the various companies. As information is collected, it will be forwarded to the City of Red Deer, as well as included in future permit application stages. It should be noted that the developer will be responsible to confirm that the requirements of ERCB Directive 079 are met prior to the subdivision or development permit stage.

The Talisman Energy Inc. and Rustum Petroleums Ltd. wells were abandoned in May 1990 and December 1999 respectively. Reclamation certificates have been issued for both wells, Talisman Energy Inc. in 1996 and Rustum Petroleums Ltd. in 2001; however, subsurface contamination was not included in the investigation. Therefore, prior to any soil disturbance (i.e. site grading or stripping) in the areas where these wells are located, the developer is required to contact the licensee's to confirm that there is no subsurface contamination for these well sites. As well, to avoid disturbance of these areas following construction, the abandoned wells require a 5 m setback that will need to be demarcated through appropriate fencing, as per ERCB Directive 079. Additional requirements of Directive 079 will be reviewed at the subdivision stage.

The Chevron Canada Ltd. well is located within the private acreage in the southwest corner of SW 36. This well, while still licensed to Chevron Canada Ltd., is now under the control of PennWest Exploration. It was drilled on September 1, 1953 and abandoned the following day. The well was a stratigraphic well, drilled solely to determine geological data, and was not used to produce oil or gas. Casings are typically not installed for this type of well, and usually the well is filled with drilling mud and covered with a simple cap, typically made from wood. Due to the wells description, it should not affect the placement of the east-west arterial road. The well has also been listed as being exempt from Reclamation requirements under ERCB guidelines.

Two active gas pipelines owned and operated by ALTA Gas and ATCO Pipelines are located within the plan area as illustrated in Figure 1. The ATCO Pipeline is high pressure.

An abandoned gas line, and associated easement, is located along the south boundary of SW 36. This easement was first registered in 1978 as per land title 782107938 (792089646), but was subsequently abandoned in 1992 in conjunction with the creation of the private acreages. The gas line itself has been abandoned as per information provided by ATCO Gas. It is anticipated the abandoned pipeline will be removed where there are conflicts with the proposed roadway construction and deep utility construction. The removal limits will be determined as part of the Development Agreement submission. There is a live gas service line, located along the same alignment as the abandoned easement, which runs westward from the private home. Removal or relocation of the live gas service will be directly related to the construction phasing for the development, and will be determined during the Development Agreement submission.

Required setback distances for pipelines and abandoned well sites are indicated on Figure 1. The required setback distance for pipelines is considered to be the right-of-way, although proximity approvals are required for any work within 30 m of the pipeline. The setback distance for abandoned wells is considered to be a 5 m radius around the well site.

The plan area is located significantly higher than the surrounding lands, and in anticipation of having excess material, the land owner has extracted clay material from the south east corner of SW 36. Reclamation of this area will consist of placing topsoil back on the disturbed areas.

2.3 Landfills

A Phase 1 Environmental Assessment of the plan area indicates there are no landfill sites present within the plan area.

3 Development Concept

3.1 Vision

The vision of the Queens Business Park is to create a business/industrial park which supports a high-quality built and natural environment encouraging sustainable economic growth through increased economic opportunities and principles of industrial ecology, which fosters vibrancy within the community.

3.2 Objectives

- To facilitate the establishment of highly desirable businesses and employment by providing infrastructure and a planning framework to support a high quality industrial subdivision.
- To support the development of an eco-industrial park in the southern portion of the plan area through incorporating principles of industrial ecology and environmental sustainability into the design concept.
- To protect and preserve natural features of high ecological value which have been identified in the plan area.
- To support the intent, goal and objectives of the *West QE2 Major Area Structure Plan*

In pursuing these objectives, the plan complies with the City of Red Deer's *Industrial Area Planning Guidelines & Standards*. In addition, the plan attempts to address principles of environmental sustainability through the use of green infrastructure, principles of industrial ecology and ecological conservation.

3.3 Land Use

The land use concept for the IASP is presented in Figure 2. The focus of the plan is the supply of lands for business/industrial uses. Through provisions of the Land Use Bylaw and developer controlled guidelines, a high quality built and natural environment will be achieved.

3.4 Industrial and Business

The majority of the plan area will be developed with a range of industries and businesses including light industrial, warehousing, as well as storage and industrial support services. It is anticipated that uses within the plan area will have a low nuisance factor. The lot configuration will respect the illustrated road layout and be comprised of small to large lots dependent on market demand.

3.5 Commercial

As indicated in Figure 2, there is potential for a commercial area of 2.0 hectares along the 75 Avenue arterial as indicated in the MASP. The intended commercial use can be characterized as vehicular-oriented commercial. At this stage, it has been indicated that the site is intended for industrial uses with the opportunity to change to commercial based on completing the required assessment outlined in the MASP (section 4.1.4, page 4-3).

3.6 Green Infrastructure and Eco-Industrial Park

3.6.1 *Eco-Industrial Park*

As shown in Figure 2, the IASP delineates a 17.83 hectare portion of land at the south end of the plan area, surrounding Cameo Lake, to be used for the purposes of an eco-industrial park, as identified in the MASP.

Eco-industrial parks are planned to accommodate industries that wish to collaborate with each other in an eco-efficient, mutually beneficial, symbiotic partnership. Such parks support the concept of industrial ecology through by-product exchange between businesses and through fostering synergies (e.g. waste-to-feed systems) which enable waste and pollution reduction and help to increase economic gains and environmental well-being. Each park is unique as local conditions, such as the economic factors, shape how an eco-industrial park is designed and operated; however, they consistently share the common theme of industrial ecology. The City may consider additional uses within the proposed eco-industrial park in addition to uses identified within the I1 – Industrial (Business Service) district. These additional uses are intended to allow for broader business collaboration within the proposed eco-industrial park and must correspond with the intent of the *Municipal Development Plan* and the *West QE2 Major Area Structure Plan*.

Although this concept is somewhat new to the City of Red Deer, eco-industrial parks have been, and continue to be, established in Municipal Units across Alberta and Canada. In 2011, the City adopted an *Environmental Master Plan* that sets out goals and targets for protecting air quality, water, soil resources and promotes reduced waste in addition to striving to meet greenhouse gas (ghg) targets. The development of an eco-industrial park is seen as a method that can be utilized to work towards meeting these goals.

The *Environmental Master Plan* has a set of guiding principles that are being used by the City to pursue an environmental vision. Some key linkages to this IASP are the development of a walkable, bike friendly and transit orientated community, the protection of green spaces, parks and trails as well as the creation of the eco-industrial park that is likely to adopt low impact development initiatives.

The Queens Business Park IASP recognizes that to support the development of an eco-industrial park, both planning and design considerations need to be reflected in the plan. As shown in Figure 2, the portion of land delineated for eco-industrial use within this plan area incorporates the following six features which are generally associated with eco-industrial development:

- Economic development and marketing initiatives are targeted at businesses who are interested in forming mutually beneficial partnerships between other neighbouring businesses in order to fulfil their business requirements and goals.
- Industries who locate within the park use their partnerships with other neighbouring industries to be more efficient and environmentally aware, through by-product exchange, shared resources and infrastructure as well as other collaborative initiatives. In general, by-product exchange refers to the recovery, reuse, repair, rent or remanufacture of waste products from a business for use as inputs into another business. Other examples of collaboration may include sharing of equipment, storage space, or collaborating on transportation or energy needs.
- Building lots/sites, and building themselves, are designed in a manner which supports environmental sustainability. Such design elements may include the incorporation of 'green' building designs that use environmentally-friendly materials or construction processes, eco-friendly alternatives to parking surfaces such as permeable surfaces, maximizing energy efficiency, or the incorporation of eco-health components such as green roofs, roof top gardens, trails and the use of natural landscaping that are consistent with the preservation features identified in the IASP and MASP.
- The eco-industrial park uses green infrastructure elements such as naturalized stormwater drainage (e.g. swales, bio-retention), minimizing road width and surfacing, and other such elements.
- Industries within the eco-industrial park make a commitment to work with one another to manage their environmental and resource issues. In working together, business can reach the goal of improving their economic performance while reducing their environmental impact. This collaboration can be expected to extend into all areas of business activity, such as shared training and research, partnerships in transportation, security and other business aspects that help support individual industries while minimizing their overall costs and environmental impact.
- An emphasis on partnering, sharing and collective support is reflected in the overall site planning of the eco-industrial park. During the site planning of the eco-industrial park, attention would be given to which business would be located next to one another and if they are exchanging by-products/inputs. Site planning would also respond to the potential need of businesses to have centralized shared spaces for storage, warehousing and energy generation.

Development proposals for the lands which are identified as eco-industrial within the Queens Business Park IASP will be presented in such a manner which exemplifies eco-industrial park use intent.

3.7 Pedestrian and Vehicular Circulation

3.7.1 *Trail System*

In accordance with the *West QE2 Major Area Structure Plan*, all trails shall be 3.0 m wide and be provided adjacent to all arterial roadways. As shown in Figure 2, a 3.0 m paved trail is located adjacent to the arterial roadway which runs east/west through the plan area as well as along the north/south arterial roads on the west and east side of the plan area. These trails provide pedestrian linkages throughout the site.

In addition to trails, 1.5 m wide monolithic sidewalks will be provided along one side of all collector roadways within the plan area as well as key links on local roadways.

3.7.2 *Transit*

The arterial and collector road structure will be designed to accommodate transit. In general, the feasibility and viability of transit service within the plan area will be dependent on demand/use

projections and may also be dependent on partnerships with area businesses. Figure 2 indicates potential locations for bus transit stops.

3.7.3 Roadways

Figure 2 identifies roadways in accordance with the major road network determined within the *West QE2 Major Area Structure Plan*. Proposed local roads are also identified in Figure 2 and may not be completely constructed as illustrated on the Development Concept. The construction of local roads is heavily dependent on market trends and needs (large lot development compared to smaller lot development). It should also be noted that temporary traffic control measures may be required at the newly developed intersections during road construction. The developer will contact the City of Red Deer Engineering Department concerning future traffic requirements.

Where a local road is deemed unwarranted it will not be constructed. In the event that a local road, or portion thereof, is to be developed it is to be constructed within the road boundaries and access locations shown in the development concept (Figure 2). Any variation which is deemed significant in the judgement of planning staff, from the identified locations, may require and result in a minor plan amendment. In the event that the complete network of local roads is not constructed, right of ways or public utility lots will be required to protect access to municipal utilities.

The development of the IASP will also need to proceed in a manner which takes into consideration relationships with adjacent developments. Neighbouring developments will influence the phasing of development for these lands and/or when upgrades to roadway infrastructure or installation of underground infrastructure are required. This analysis will be further provided during the servicing study stage.

3.8 Open Space

3.8.1 Public Utility Lots

Public utility lots constitute 5.22 hectares of the plan area. Identified in Figures 3, 4 and 5, public utility lots have been set aside for stormwater retention ponds, electric transmission lines, water reservoirs as well as for the necessary setbacks to accommodate well sites or oil/gas pipelines.

3.8.2 Municipal Reserve Dedication

Based on the requirements of the Municipal Government Act, the subject lands within the IASP are required to provide either a ten percent (10%) municipal reserve (MR) allocation at the time of subdivision or cash-in-lieu of land, or a combination of the two. Based on the MASP, the Development Concept identifies the land to be set aside for municipal reserve. The total MR dedication will be approximately 10.47% (12.53 hectares). It should be noted that the MR area containing active pipelines (0.38 ha) will not be counted towards the overall MR dedication and any subsequent compensation for over-dedication of municipal reserve.

Future subdivision of the two acreages that straddle the boundary between the NW 25 and SW 36 quarter sections may trigger the provision of municipal reserves. The provision of municipal reserves owed from the creation of the third acreage in the southwest corner of the NASP area was addressed at the time of its creation through a deferred reserve caveat (DRC) that is currently registered on the title of the balance of the NW 25.

It should be noted that developers will be required to protect municipal and environmental reserve areas by constructing a post and cable fence prior to construction. The disturbed area is to be kept to a minimum in areas where native tree stands are designated as MR areas and where construction activity is anticipated. Additionally, fencing will be required to be installed where municipal reserve areas abut private land. A fence may not be required in circumstances where written permission has been obtained from the City of Red Deer's Recreation, Parks & Culture Department.

The design of service locations avoids municipal reserve lands and will not significantly impact vegetation removal. Additionally servicing in the municipal reserve areas has been designed to minimize the impacts on trees as shown on Figures 3 – 5.

3.8.3 Environmental Reserve

In accordance with the Municipal Government Act, MASP, and based on the information provided in the Natural Features Map, there are environmental features which qualify for environmental reserve dedication, as show in Figure 1. Specifically, the portion of Cameo Lake and surrounding wetland which falls within the subject lands are set aside for environmental reserve and have been included within the Development Concept. The required boundaries and setbacks to define the environmental reserve shall be studied in more detail during subdivision stage, and shall include consultation with the City of Red Deer and Alberta Environment. During the preparation of the MASP, Westhoff Engineering prepared a report, *Wetland Ecological Assessment* that discussed the various sensitive areas throughout the MASP, and shall be referred to when reviewing the required ER around Cameo Lake. Additionally, fencing will be required to be installed where environmental reserve areas abut private land.

For the purposes of this IASP, the ER area has been set at a minimum 30 m from the approximate water edge as shown. The final area dedicated for ER may impact the land use data provided in Section 3.9 which will be determined at the subdivision stage. In general, consideration shall be given to the existing vegetation zones, as well as the floodplain for Cameo Lake, as the water's edge fluctuates from year to year, as noted in previous studies.

3.9 Land Use Statistics

The following tables represent key land use statistics for the plan area along with a breakdown for each quarter section. It should be noted that the total area covered in the plan is 132.82 hectares, which includes the Range Road 281 right-of-way. The area as per the land titles is 129.40 hectares. Tables 1, 2, and 3 include the Range Road 281 right-of-way as separate information.

Table 1: Overall Land Use Statistics

Land Use Category	AREA (ha+/-)	% of Gross Developable Area
Plan Area	132.82	
Environmental Reserve (including Cameo Lake)	13.13	
Gross Development Area	119.69	100.00%
Roadways	16.89	14.11%
Municipal Reserve (excluding active pipeline)	12.53	10.47%
MR with Active Pipeline (not credited as MR)	0.38	0.32%
Public Utility	5.13	4.29%
Net Development Area	84.76	
Industrial and Business service	64.78	54.12%
Industrial and option to change to Commercial	2.15	1.80%
Eco-Industrial Park	17.83	14.90%

Table 2: Quarter Section SW 36-38-28 Land Use Statistics

Land Use Category	AREA (ha+/-)	% of Gross Developable Area
Quarter Section Plan Area	66.44	
Environmental Reserve (including Cameo Lake)	0.00	
Gross Development Area	66.44	100.00%
Roadways	9.58	14.42%
Municipal Reserve (excluding active pipeline)	4.38	6.59%
MR with Active Pipeline (not credited as MR)	0.00	0.00%
Public Utility (PUL)	4.19	6.31%
Net Development Area	48.29	
Industrial and Business service	48.29	72.68%
Industrial and option to change to Commercial	0.00	0.00%
Eco-Industrial Park	0.00	0.00%

Table 3: Quarter Section NW 25-38-28 Land Use Statistics

Land Use Category	AREA (ha+/-)	% of Gross Developable Area
Quarter Section Plan Area	66.38	
Environmental Reserve (including Cameo Lake)	13.13	
Gross Development Area	53.25	100.00%
Roadways	7.31	13.73%
Municipal Reserve (excluding active pipeline)	8.15	15.31%
MR with Active Pipelines (not credited as MR)	0.38	0.71%
Public Utility	0.94	1.77%
Net Development Area	36.47	
Industrial and Business service	16.49	30.97%
Industrial and option to change to Commercial	2.15	4.04%
Eco-Industrial Park	17.83	33.48%

4 Servicing Concept

The servicing requirements for this IASP are described below. Details regarding servicing will be addressed at the servicing study stage.

4.1 Stormwater and Drainage

The subject lands slope generally east and south and pre-development run-off generally flows downward towards Cameo Lake and to the east. The post-development drainage plan (Figure 3) will incorporate stormwater management facilities that control discharge flowing into the proposed storm trunk mains to pre-development rates or to levels defined by the City of Red Deer. Presently two stormwater management facilities are being proposed in addition to the existing Cameo Lake.

While the details regarding the eco-industrial park are still being finalized, it is anticipated that Low Impact Development techniques will be adopted to reduce runoff from the site, enable natural recharge and to allow for the utilization of stormwater within the properties (e.g. irrigation of landscaped areas).

The overland drainage will be conveyed off site at the SE corner of Sec 25. Overland drainage from this area will require on lot stormwater management that will be discharged to the existing ditch drainage system on 75 Avenue and then drained east to the storm pond in the Sullivan Quarter.

It is noted that the stormwater ponds are not orientated to take full advantage of the natural contours of the site due to the desire for optimal land configuration and marketability. This orientation of the storm ponds may affect the off-site levy repayment amount.

Alternate or interim alignment/connections based on the surrounding development areas not being available, such as storm trunk in 75 Avenue – SE Section 36, will be addressed at the servicing study stage.

4.2 Sanitary Sewer

All sanitary servicing for the development will be required to tie into the City of Red Deer sewer services, and new private servicing will not be permitted. As shown in Figure 4, the proposed sanitary mains within the development will be sized to accommodate the flows in the area. There are three proposed lines, one will connect to the future sanitary main running along 79 Street (NW 36 Sanitary Stub), and the other two will tie to future sanitary mains on 75 Avenue (NE 25 Sanitary Main).

Alternate or interim alignment/connections based on the surrounding development areas not being available will be addressed at the servicing study stage.

4.3 Water Distribution

All water servicing for the development will be required to tie into the City of Red Deer water mains, and new private servicing will not be permitted. As shown in Figure 5, water servicing will be provided to this area through future water mains running along 79 Street, 75 Avenue and the future divided Arterial Road to the west.

Alternate or interim alignment/connections based on the surrounding development areas not being available will be addressed at the servicing study stage.

Along the west boundary of SW 36 (the existing Range Road 281 right-of-way), the water main running through the proposed PUL will tie into the future water main running along the divided arterial. At the tie-in location, it will be the developer's responsibility to obtain any portions of right of way, from the adjacent landowner, required to facilitate the water connection.

4.4 Shallow Utilities

4.4.1 *Power Distribution*

The power distribution network will consist of an underground electric distribution network which will be extended to the plan area. The power for these two quarters of land will be distributed in a north-south direction along planned roadway right of ways and easements. The City of Red Deer has negotiated the transfer of six quarter sections of lands to the Electric Light and Power (EL&P) from Fortis Alberta's service area. The owner/developer will contact EL&P for their electrical servicing needs. Boulevard landscaping planning will be subject to EL&P approval to avoid clearance and alignment issues with planned electrical facilities. Coordination with Telus and Shaw Cable is encouraged to share joint use of the trench with EL&P.

The service will be extended from the bordering industrial park, Burnt Lake Business Park. The details of tie-in locations and required easements will be determined at the subdivision approval phase.

4.4.2 *Natural Gas Distribution*

ATCO Gas will service the plan area and already has two existing gas pipelines within the subject lands. The details of tie-in locations and required easements will be determined at the subdivision approval stage.

4.4.3 *Telecommunications*

High capacity, high speed telecommunication infrastructure such as fibre optics will be encouraged in the plan area to maximize communication efficiencies and economic opportunities for business located within the subject lands. Service provider details and locations of tie-ins and required easements will be determined during the subdivision approval stage.

5 Safety

5.1 Emergency Services

The plan area will be serviced by Emergency Service Station No. 5 located within the Johnstone crossing neighbourhood. This Emergency Service Station is in close proximity to the plan area enabling a four to five minute response time. This falls within the City's planning guidelines of a four minute travel time to a fire or medical emergency. The station also has a fully-staffed vehicle 90% of the time.

5.2 CPTED

Crime Prevention through Environmental Design (CPTED) is a comprehensive approach to design of the built environment that can lead to reduced opportunities for crime. CPTED principles incorporate modifications to the physical environment during the planning and building phase of development and may include:

- Providing unobstructed views from buildings of the surrounding area to increase natural surveillance
- Provide appropriate lighting for streets, trails and parks
- Avoid landscaping that may conceal offenders
- Encouraging use of public space by legitimate users, and avoid placing dark, and or hidden areas, near activity nodes
- Identifying ownership by delineating private from public space through real or symbolic boundaries (e.g. low shrubbery, alternative paving stone colour and changes in grade)

- Using physical barriers, security devices and tamper resistant materials to restrict entrance

In addition to modifying the physical environment, CPTED also considers behavioural elements as part of a comprehensive approach to crime prevention. Fostering interactions between businesses to promote vigilance and control over the area, ensuring an area is being maintained and kept free of graffiti, and establishing a Block Watch programme, are all examples of community-based behaviours which complement CPTED design principles. However, in addition to supporting CPTED initiatives, businesses are still encouraged to consider the use of alternative supplementary security measures such as alarms and closed circuit television (video surveillance) systems.

The Queens Business Park recognizes the importance of considering principles of CPTED in its design. In order to incorporate CPTED principles at an appropriate scale, and in an effective way, such design considerations will take place at the subdivision phase. Where possible and appropriate, development within the Queens Business Park will incorporate CPTED design elements.

6 Implementation

6.1 Development Phasing

The stages of development within the Queens Business Park will occur in accordance with the development phasing plan illustrated in Figure 6. However, development phasing may vary in order to more efficiently accommodate municipal servicing needs or to accommodate changing market and development trends.

6.2 Amendments to This Plan

All amendments to this IASP shall be prepared in accordance with procedures as outlined in *Section 63 and 64 of the Municipal Government Act and Appendix "A" of the City's Industrial Areas Planning Guidelines & Standards.*

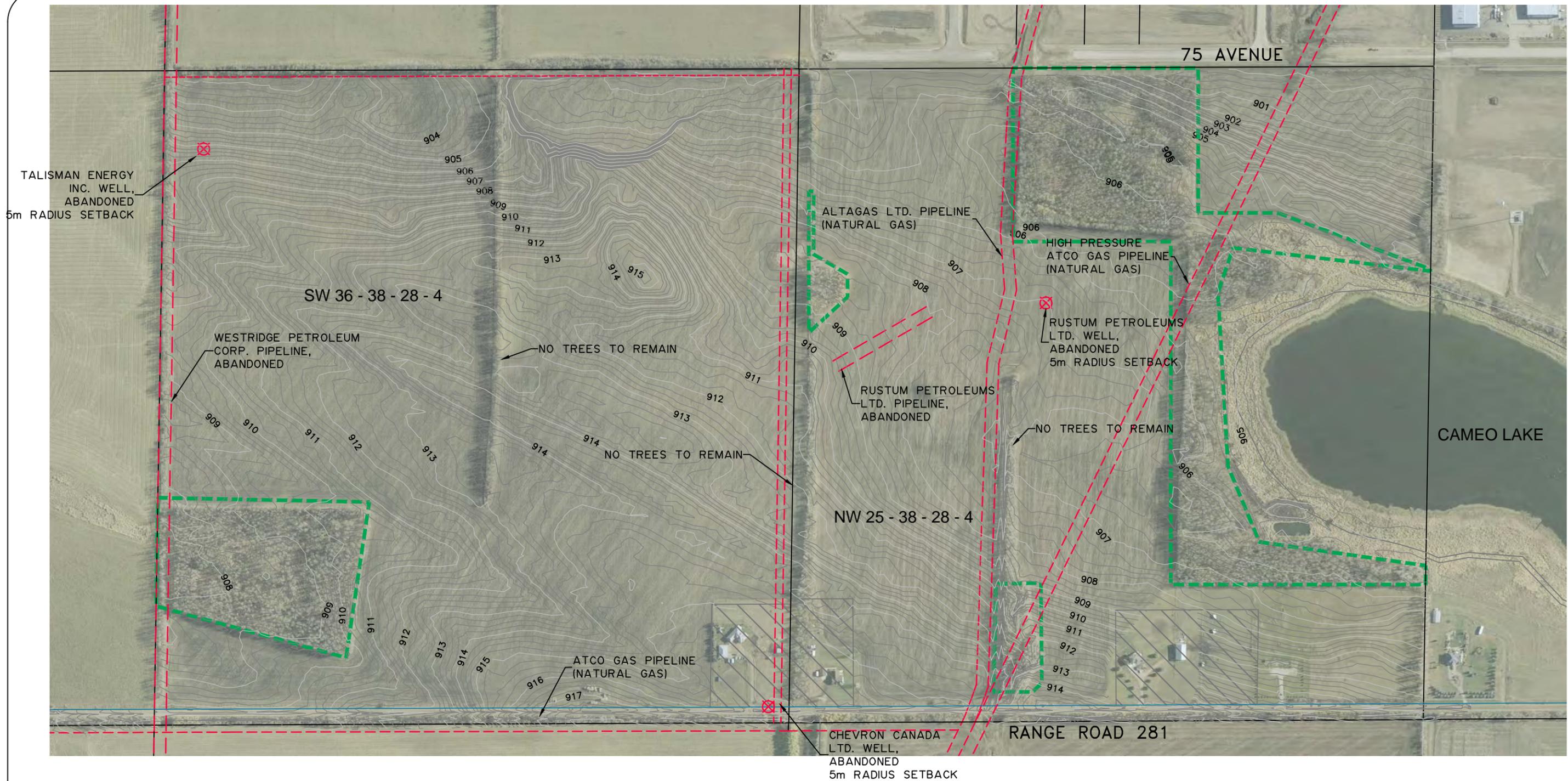
Minor plan adjustments to the proposed land use, boundaries or roadway and servicing alignment may be incorporated where necessary without amendment to the Plan, provided the intent of the IASP is maintained.

6.3 Existing Residential Transition

On the subject lands that form part of this IASP there are three existing country residential properties that are identified in Figure 1. It has been assumed that the residents are aware of the MASP process that resulted in effectively designating these lands for industrial purposes. It should be noted that there are two key elements that have been identified in relation to the transition of the existing country residential:

- The three country residential properties are located within the third and fourth phases of development, and will be in transition as development occurs.
- Depending on land sales in relation to traffic volume / access, the acreage owners may be affected by development prior to arterial road construction. The developer will be required to secure the necessary arterial right of way (undivided arterial) from any and all affected landowners. As part of the servicing study and/or the next level of design, the final alignment of Range Road 281 will have to be reviewed to minimize the impact on the country residential lots. Alternate or interim alignment/conditions based on the surrounding development areas not being available will be addressed at the servicing study stage.

Figure 1 Existing Conditions



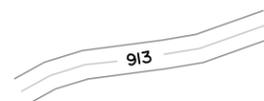
The City of Red Deer

**QUEENS BUSINESS PARK
INDUSTRIAL AREA STRUCTURE PLAN**

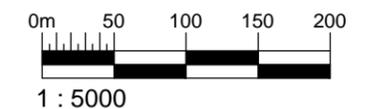
SW 36 - 38 - 28 - W4M / NW 25 - 38 - 28 - W4M

FIGURE 1 – EXISTING CONDITIONS

-  PLAN BOUNDARY
-  EXISTING COUNTRY RESIDENTIAL LOT
-  EXISTING PIPELINE RIGHT-OF-WAY
-  TREES TO REMAIN AS MUNICIPAL RESERVE

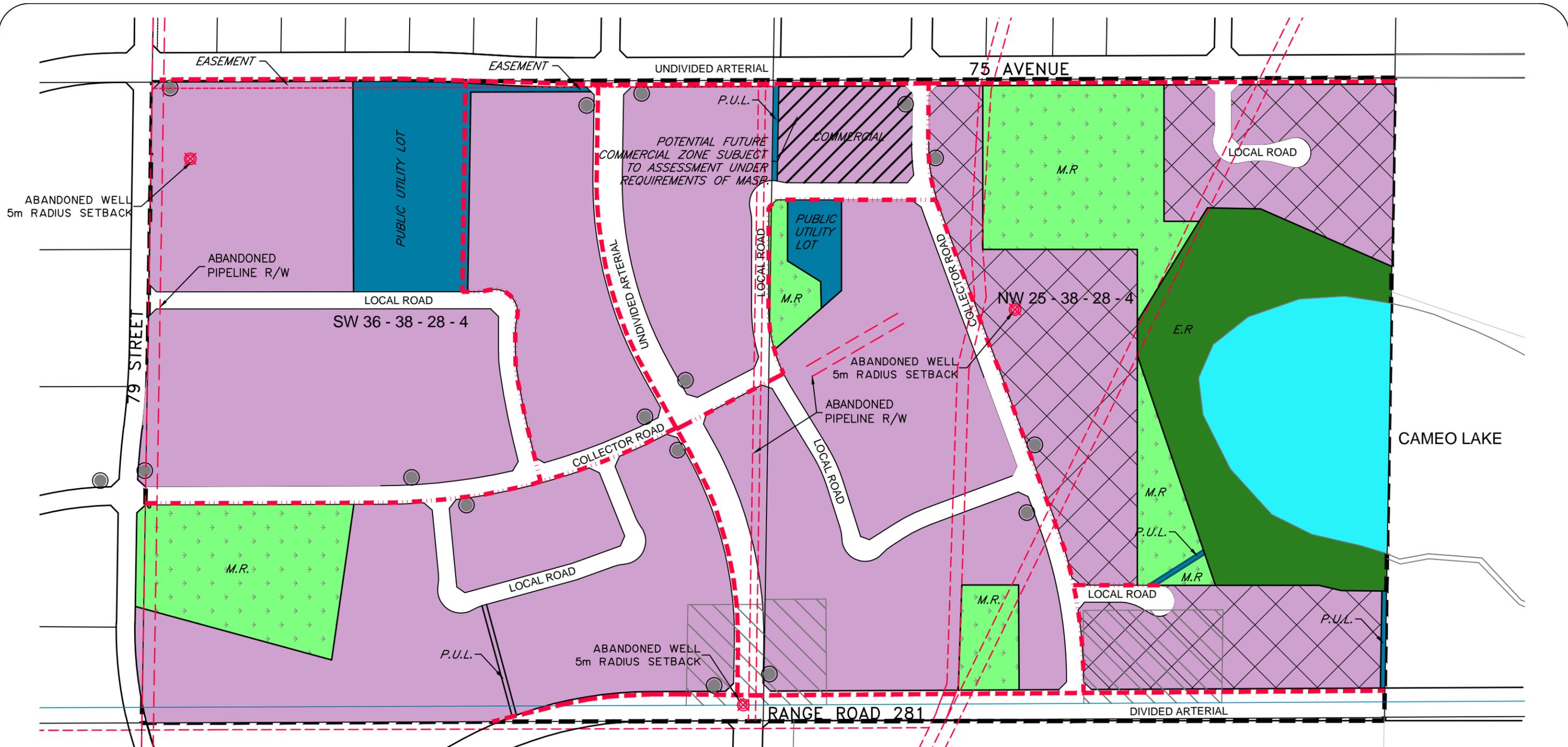


EXISTING CONTOURS
(MAY 2010 SURVEY)



GENIVAR
JUNE 10, 2013

Figure 2 Proposed Land Use and Roads



The City of Red Deer

**QUEENS BUSINESS PARK
INDUSTRIAL AREA STRUCTURE PLAN**

SW 36 - 38 - 28 - W4M / NW 25 - 38 - 28 - W4M

FIGURE 2 – PROPOSED LAND USE
& ROADS

	EXISTING COUNTRY RESIDENTIAL		PROPOSED TRANSIT STOP
	INDUSTRIAL AND BUSINESS SERVICE (I1)		POTENTIAL FUTURE COMMERCIAL
	ECO INDUSTRIAL PARK (I1)		PAVED TRAIL (3.0m)
	ENVIRONMENTAL RESERVE		SIDEWALK (1.5m)
	MUNICIPAL RESERVE		PLAN BOUNDARY
	PUBLIC UTILITY LOT		PIPELINE R/W

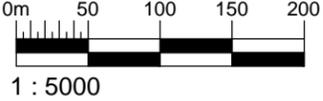
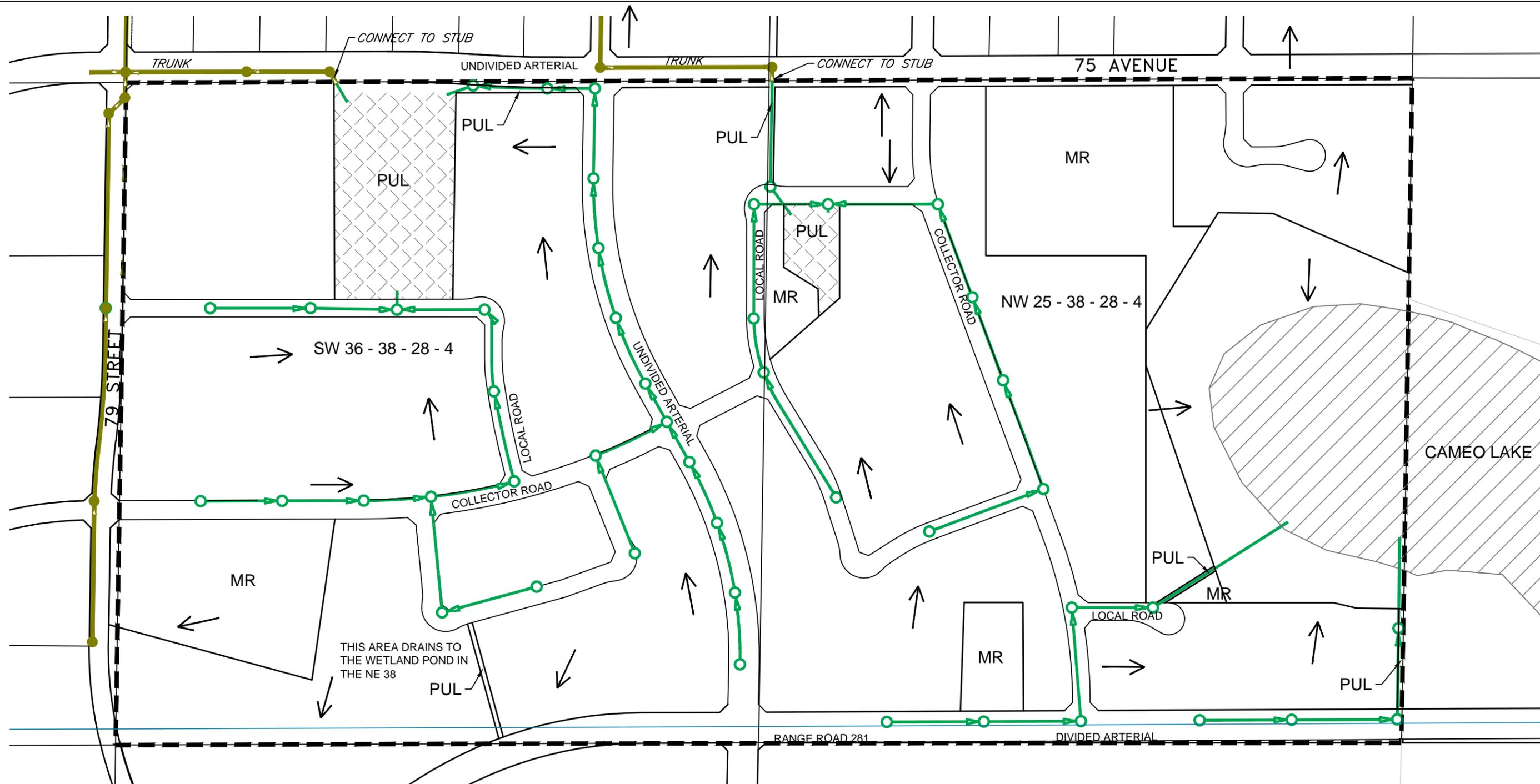



Figure 3 Stormwater Servicing



The City of Red Deer

**QUEENS BUSINESS PARK
INDUSTRIAL AREA STRUCTURE PLAN**

SW 36 - 38 - 28 - W4M / NW 25 - 38 - 28 - W4M

FIGURE 3 – STORMWATER
SERVICING

- | | | | |
|--|--------------------------------------|--|--------------------------|
| | PLAN BOUNDARY | | EXISTING WETLAND |
| | STORM MAIN (BY OTHERS) | | PROPOSED POND |
| | MANHOLE & FLOW DIRECTION (BY OTHERS) | | GENERAL SURFACE DRAINAGE |
| | PROPOSED STORM MAIN | | |
| | PROPOSED MANHOLE & FLOW DIRECTION | | |

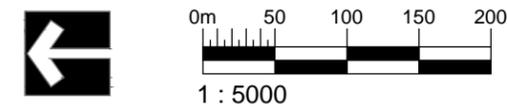
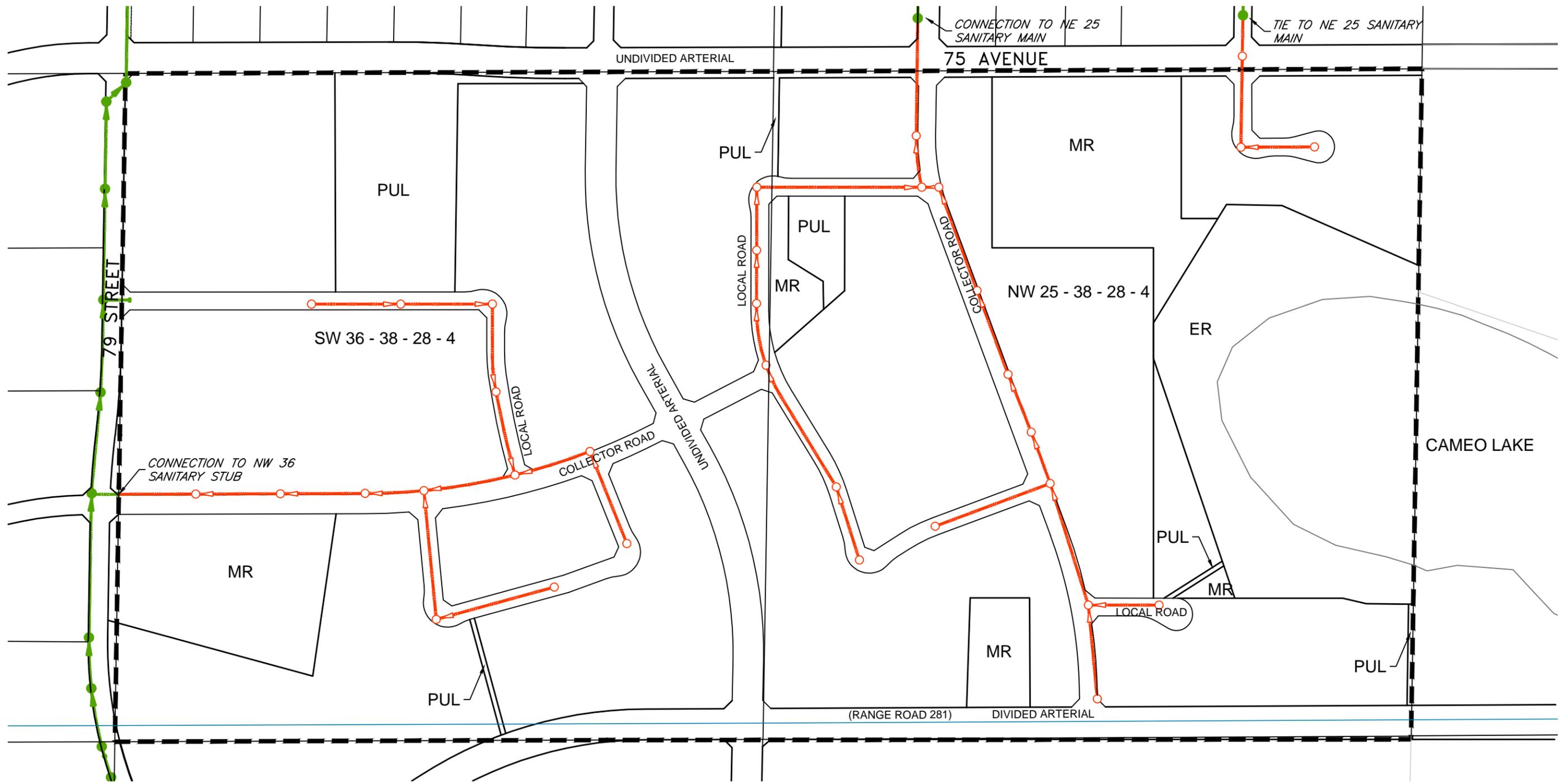


Figure 4 Sanitary Servicing



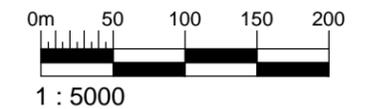
The City of Red Deer

**QUEENS BUSINESS PARK
INDUSTRIAL AREA STRUCTURE PLAN**

SW 36 - 38 - 28 - W4M / NW 25 - 38 - 28 - W4M

FIGURE 4 – SANITARY SERVICING

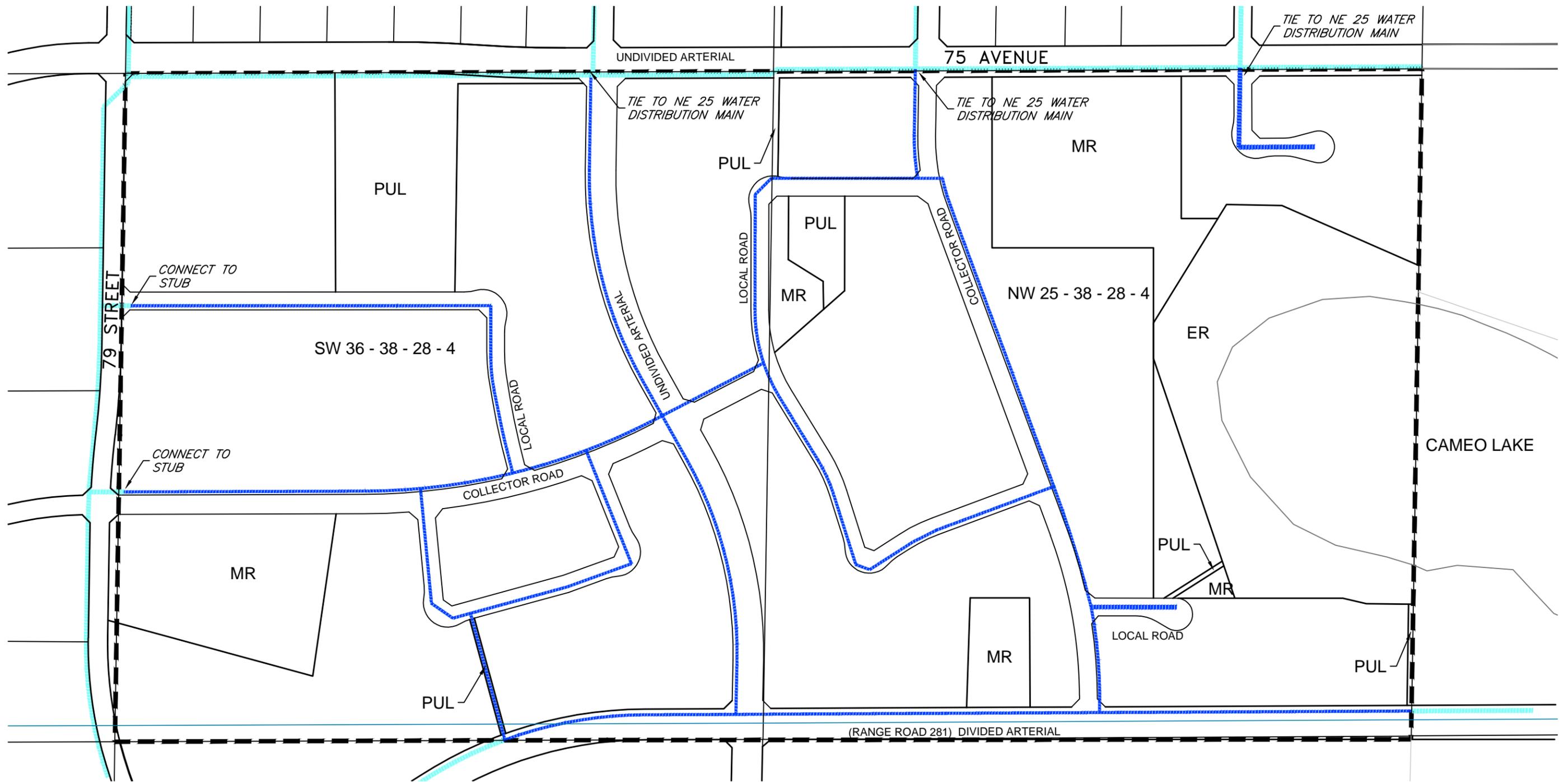
-  PLAN BOUNDARY
-  SANITARY MAIN (BY OTHERS)
-  MANHOLE & FLOW DIRECTION (BY OTHERS)
-  PROPOSED SANITARY MAIN
-  PROPOSED MANHOLE & FLOW DIRECTION



GENIVAR

JUNE 10, 2013

Figure 5 Water Servicing



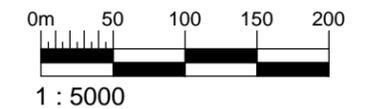
The City of Red Deer

**QUEENS BUSINESS PARK
INDUSTRIAL AREA STRUCTURE PLAN**

SW 36 - 38 - 28 - W4M / NW 25 - 38 - 28 - W4M

FIGURE 5 – WATER SERVICING

- PLAN BOUNDARY
- WATER MAINS (BY OTHERS)
- PROPOSED WATER MAIN



GENIVAR
JUNE 10, 2013

Figure 6 Development Phasing Plan



The City of Red Deer

**QUEENS BUSINESS PARK
INDUSTRIAL AREA STRUCTURE PLAN**

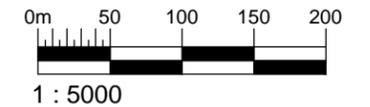
SW 36 - 38 - 28 - W4M / NW 25 - 38 - 28 - W4M

FIGURE 6 – PROPOSED PHASING

-  ENVIRONMENTAL RESERVE (CAMEO LAKE)
-  ENVIRONMENTAL RESERVE
-  MUNICIPAL RESERVE
-  PUBLIC UTILITY LOT

NOTE: ACTIVE GAS PIPELINES NOT INCLUDED IN MR CALCULATIONS

-  PLAN BOUNDARY
-  PHASE BOUNDARY



GENIVAR
JUNE 10, 2013