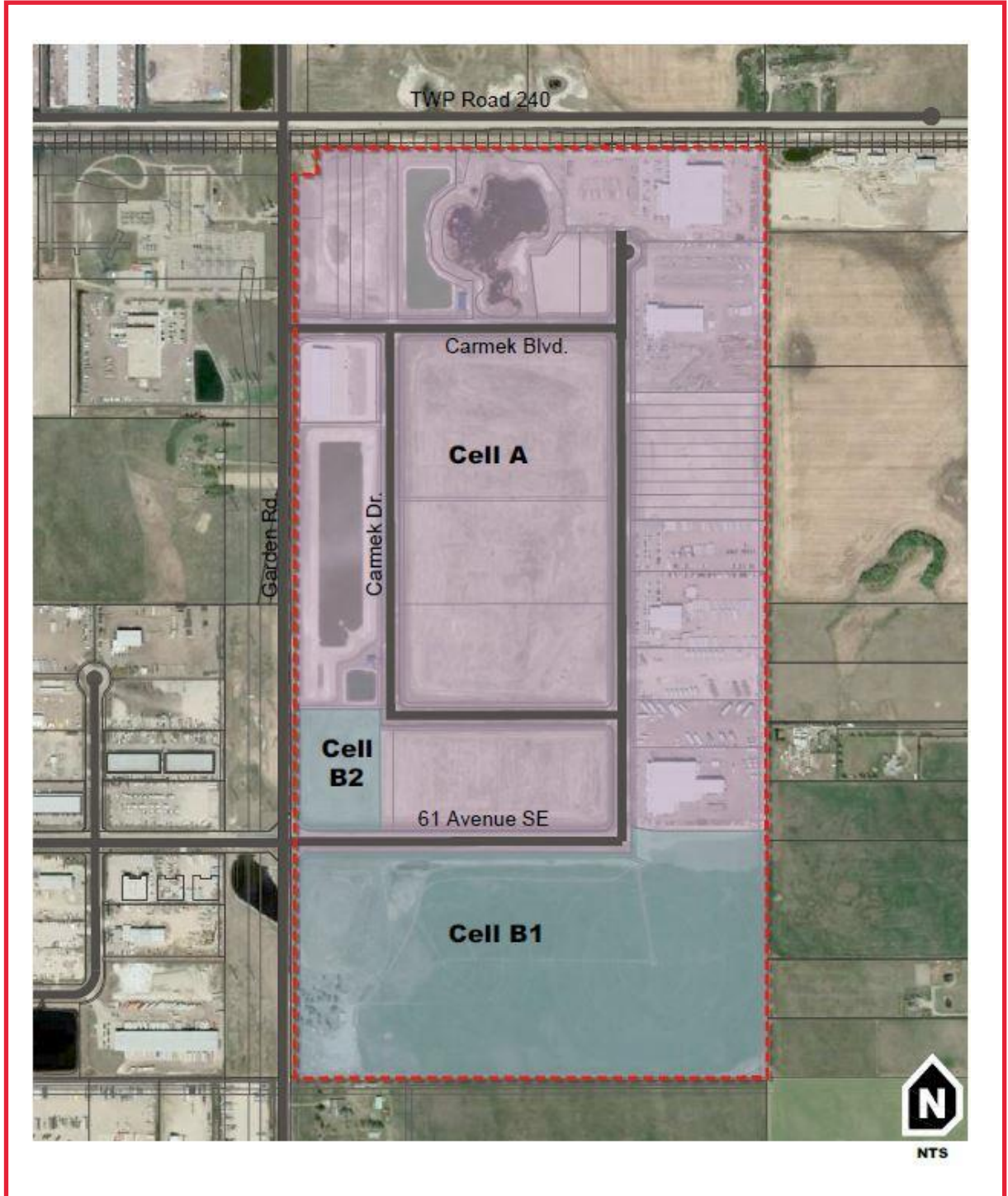


EMCOR BUSINESS PARK CONCEPTUAL SCHEME



Emcor Business Park Conceptual Scheme

Prepared for:

Rocky View County
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Other Reports

The following documents are submitted under separate cover:

- A: Traffic Impact Assessment by DA Watt Consulting March 2012.
- B: Integrated Water Management Report – TC Engineering Ltd. March 2012.
- C: Agricultural Feasibility Report by EBA Consultants February 2011.
- D: Geotechnical Evaluation Patton Industrial Centre Stage 2 by McIntosh & Lalani Engineering Ltd. June 2007.
- E: Patton Industrial Infiltration Study – Sabatini Earth Technologies May 25, 2010 file#1005-7784.
- F: Subsurface Investigation for ponds Emcor Business Park – Levelton Consultants Ltd. April 6, 2012 – file#AB12-0282.
- G: Preliminary Spur line Access for Emcor Business Park- Focus Engineering October 2013.

1.0 INTRODUCTION

1.1. Vision

The Emcor Business Park Conceptual Scheme is intended to establish a context and guide for the subdivision and development of 314.5 acres in Rocky View County located in the West ½ of Section 32, T. 23, R. 28, W4M. Through a comprehensive planning process, the Conceptual Scheme describes an industrial business centre plan designed to adhere to the provisions of the Shepard Area Structure Plan, address the requirements of the local community, efficiently meet the needs of the industrial business market, and provide innovative servicing options.

The Emcor Business Park Conceptual Scheme is a shift from the original plan approved by Council in 2006 known as the Patton plan. The Patton plan was for a limited service industrial park for businesses that require large areas for storage and few site improvements. The land use bylaw Direct Control 113 for the Patton Plan was approved but not implemented.

In the Emcor plan, a fully serviced project will attract businesses that need utility services. These businesses provide employment and result in added tax revenues to the County.

The Emcor servicing concept is unique and will provide the County with an innovative and sustainable alternative to traditional solutions and may serve as a model for other areas.

The Emcor stormwater design is a conservative approach that goes beyond the current standards in providing substantial oversized central stormwater storage and a centralized crop irrigation system for disposing of stormwater. This approach provides sustainable solutions that can be applied almost anywhere, and does not create problems for the surrounding areas.

The Emcor wastewater treatment facility will serve the businesses in the plan area and is designed to service an additional 920 acres of industrial development if desired by local owners and Council.

The Emcor development and the associated servicing solutions for potable water, wastewater and stormwater management have been derived with ongoing review and input from expert staff at the County, Emcor storm-water engineers and Alberta Environment staff.

The result is a sustainable industrial development that meets servicing needs with no off-site inputs required. The project will:

- Dispose of all stormwater on-site using evaporation, spray irrigation of crops, and landscaping irrigation;
- Source on-site well-water to meet potable water demands;
- Explore the use of stormwater for potable water needs;

Emcor Business Park Conceptual Scheme

- Treat wastewater and stormwater on-site; and,
- Use spray irrigation to dispose of treated stormwater or waste water.

Enhanced and future agricultural use of treated water could align components of this plan with the County Agricultural Master Plan.

This concept is consistent with the County's objective of creating "made in Rocky View" sustainable projects that contribute to the ongoing economic well-being of the County.

1.2. Conceptual Scheme Objectives

- To establish a comprehensive Conceptual Scheme for the development of a 314.5 acre parcel within the West ½ of Section 32, T. 23, R. 28, W4M.
- To provide a policy framework that will guide the development of the subject lands to ensure a consistency with the provisions of the Shepard ASP.
- To ensure a land use and subsequent development that is appropriate for future and existing surrounding land uses.
- To allow for a resilient long term development strategy that can adapt to the changing demands of the real estate market and ensure long term viability.
- To establish performance standards and development guidelines for industrial land uses within the Conceptual Scheme Planning Area.
- To effectively manage stormwater throughout the conceptual scheme area.
- To establish a policy framework which will provide a fully integrated and independent servicing strategy utilizing innovative technologies to manage existing site development limitations.

1.2.1. Policy: *Policies included in this Conceptual Scheme shall be implemented in future subdivision and development permitting stages.*

1.3. Plan Format

The Conceptual Scheme report is divided into five sections.

Section 1.0 provides a general framework and sets the principal vision and objectives.

Section 2.0 describes the existing physical characteristics of the Conceptual Scheme Planning Area.

Section 3.0 provides land use information including existing, contextual and land uses and provides preliminary performance standards.

Section 4.0 contains a comprehensive development proposal that includes elements of circulation, servicing and subdivision design.

Section 5.0 concludes with a general statement of report implementation.

All policies contained herein are italicized and numbered as follows:

X.X.X. Policy: .

2.0 PHYSICAL SITE CHARACTERISTICS

2.1. Planning Area

The subject lands are included in the Shepard Area Structure Plan Area. The site comprises 127.3 ha (314.5 acres) in the West ½ of Section 32, T. 23, R. 28, W4M and is bounded by the half section line on the east, Garden Road on the west, the CNR right-of-way and TWP Road 240 on the north and the section line on the south, as shown on Figure 2.

2.1.1 Policy: *Policies contained herein shall apply to all lands within the Conceptual Scheme Planning Area as shown on Figure 2.*

2.2. Topography, Hydrology and Geotechnical

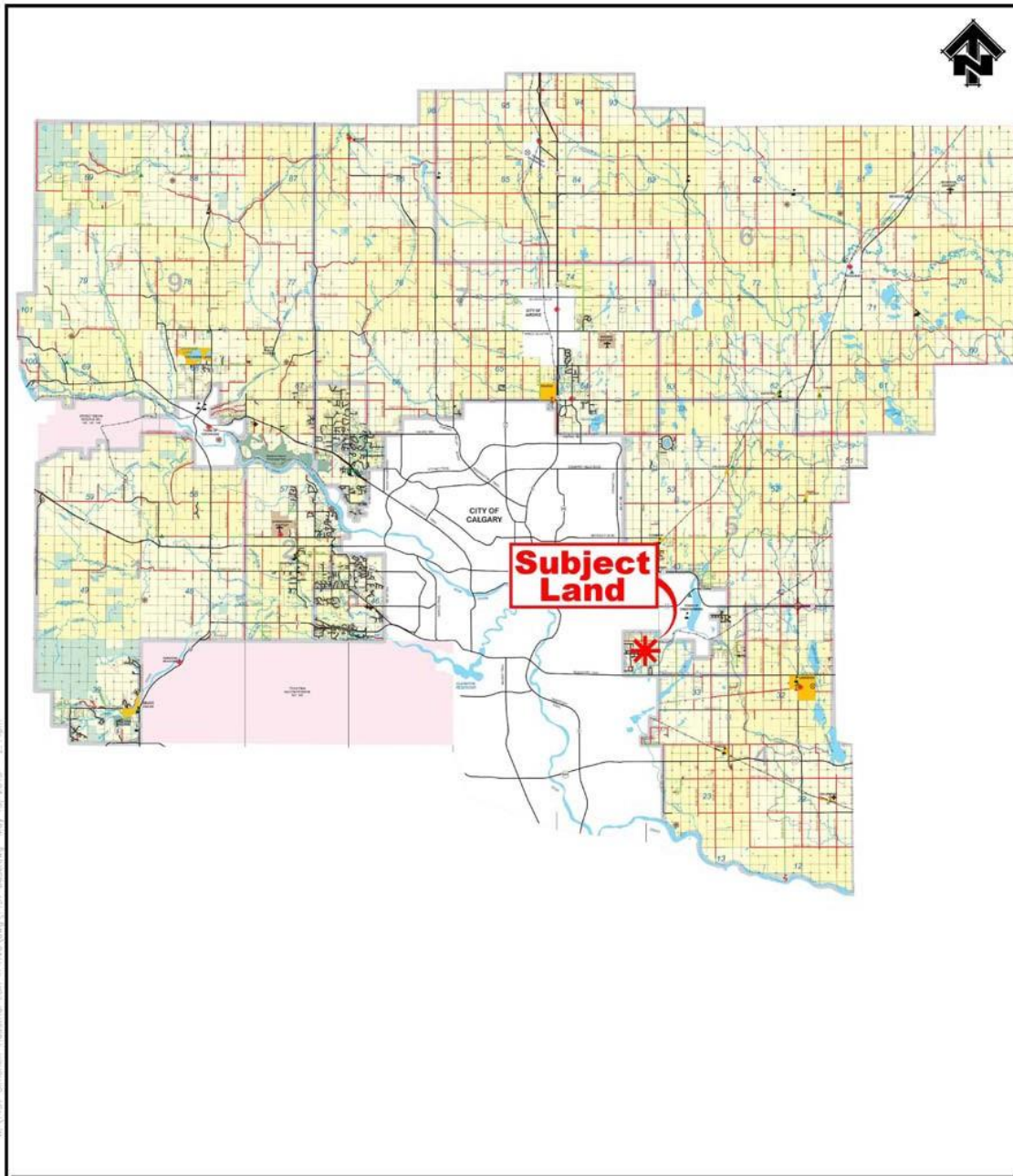
The topography of the site consists of predominantly flat prairie with an elevation range of approximately 6 metres from 1033 m to 1039 m as shown on Figure 3. The lowest point is a wetland located along the west central area of the subject site. The highest point is located in the northwest portion of the site.

Site drainage is generally from the north and east to a wetland located centrally on the west boundary. A portion of the south area of the site drains off-site to the southeast. Drainage is primarily internal to the site into low lying poorly drained meadows. Stormwater naturally evaporates or is taken up by cultivated crops.

Subsurface conditions were investigated by McIntosh & Lalani Engineering Ltd. The Geotechnical Evaluation June 2007 File ML3492 reports that shallow groundwater was measured in 16 standpipes installed across the site. The geotechnical evaluation determined the local area has a “perched groundwater condition” and relatively impermeable soils that do not act to recharge the true ground water table. There is no watercourse or ditch system to convey storm drainage to the Bow River, and virtually no ground water infiltration.

Shallow infiltration Tests were carried out by Sabatini Earth Technologies Inc. The Patton Industrial Infiltration Study May 25, 2010 file#1005-7784 found the shallow infiltration rate to be high as the tests were carried out in the root zones. Although rates of 10^{-4} cm/s were found, the study recommends the use of more conservative infiltration rates such as 10^{-6} cm/s. This rate is used for any design calculations requiring infiltration. Deeper infiltration rates were investigated by Levelton Consultants Ltd. in Subsurface Investigation for Ponds Emcor Business Park April 6, 2012 file AB12-0282. The report shows average deeper infiltration rates below the root zones to be 10^{-6} cm/s which is in the range for satisfying the use of native soil for liner purposes.

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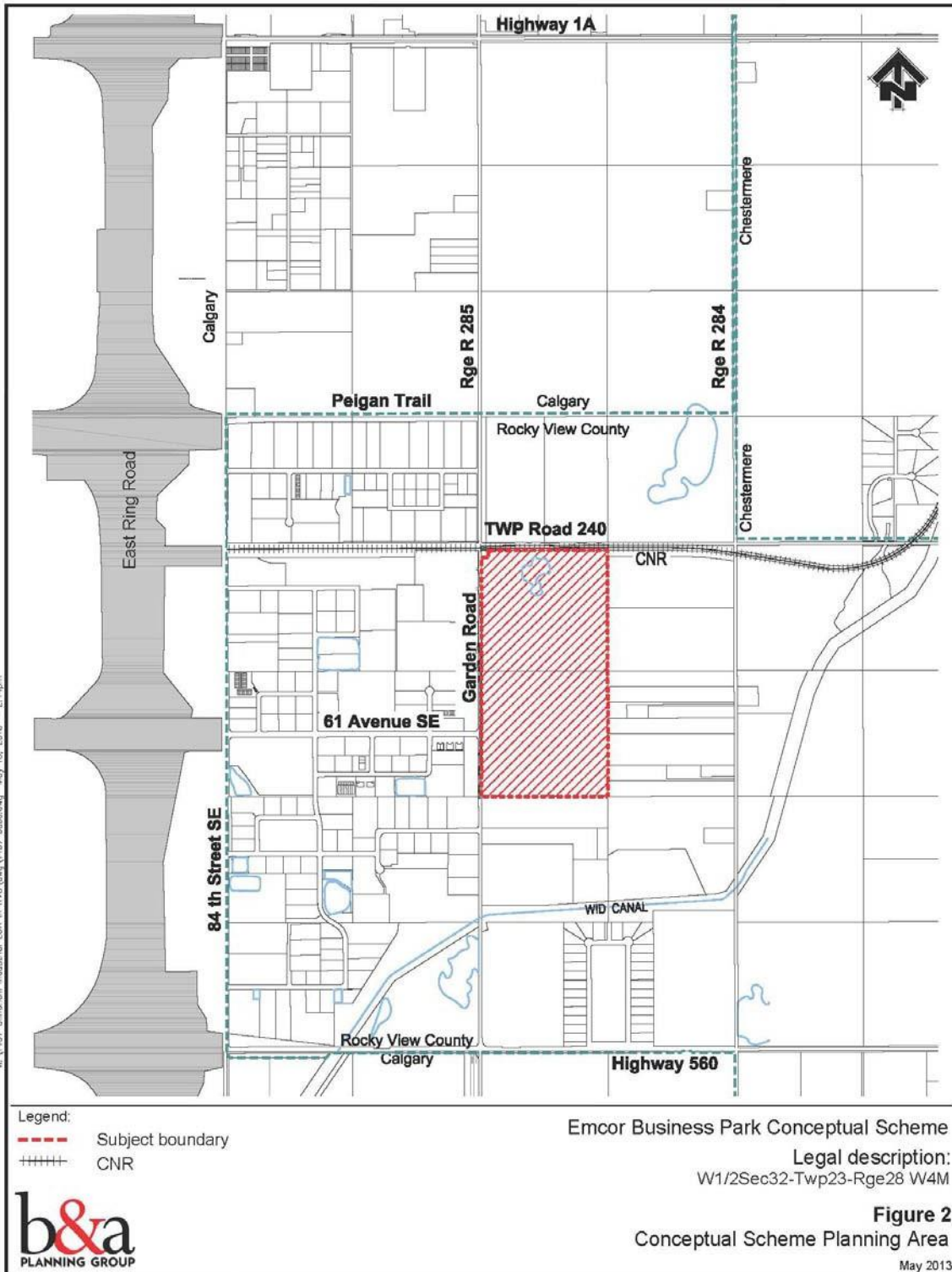
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W1/2Sec32-Twp23-Rge28 W4M

Figure 1
Location Plan

May 2013

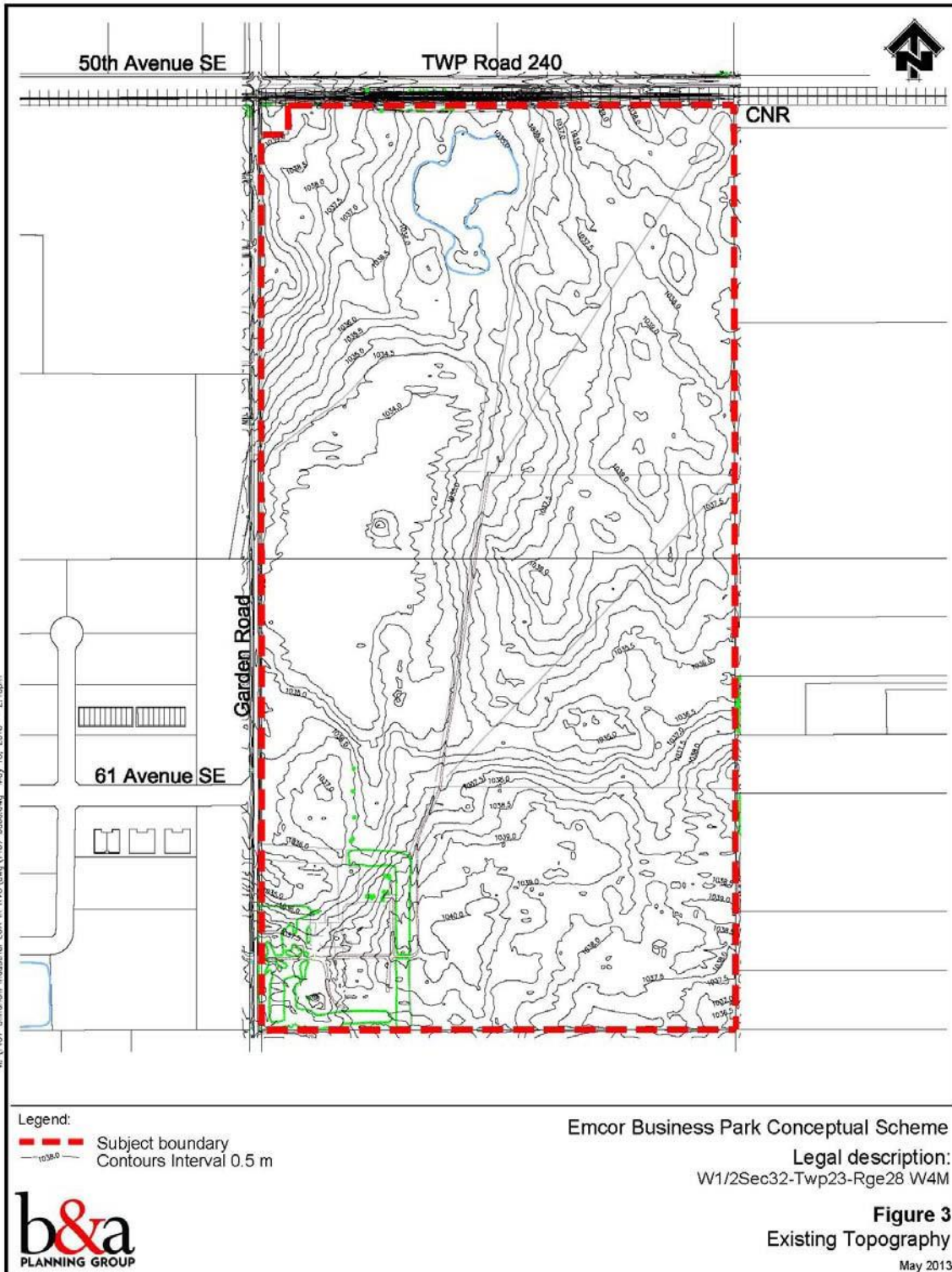


Emcor Business Park Conceptual Scheme



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Emcor Business Park Conceptual Scheme



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Emcor has designed a management system to eliminate any surface flooding that is common in other developments in the area, and in addition, eliminates the need for off-site discharge following development of the industrial properties.

2.2.1 Policy: *For buildings, detailed site specific geotechnical investigations shall be provided by the applicant for development permit applications.*

2.2.2 Policy: *The developer shall ensure the stormwater generated on the entire site (including the small area located in the south portion of the site that currently drains off-site), shall be redirected to the central storm management facility.*

2.2.3 Policy *The developer shall ensure that stormwater will not cause local area flooding and undermining of road structures.*

2.2.4 Policy *The developer shall ensure that runoff entering the site from existing offsite sources is effectively managed such that there is no appreciable change to drainage patterns on the adjacent properties.*

2.3. Existing Structures

The older structures have been removed.

2.4. Vegetation

Site vegetation is non-native crops that are actively farmed. Typical prairie species surround the wetlands such as common cattail, common great bulrush, three-square rush, water foxtail, foxtail barley, mat muhly, nuttall's salt-meadow grass, slough grass and common burdock. The few shrubs and trees on the subject lands are remnants of the farmstead.

2.5. Environmental Assessment

An assessment identified eight wetlands. The County, Alberta Environment, Alberta Sustainable Resource Development and Ducks Unlimited have reviewed the wetland assessment. One wetland in the northern portion of the Plan Area is Crown owned bed and shore under the Public Lands Act. The boundary of this wetland has been surveyed in the presence of Sustainable Resources and this survey will be incorporated into the subdivision plan. The wetland will be managed in compliance with AESRD regulations and dedicated as an Environmental Reserve Easement. The setback of 30 metres around the wetland generally, as shown on Figure 5, shall be dedicated to the satisfaction of Council.

The balance of the temporary wetlands are incorporated into developable land. The required compensation has been paid to Ducks Unlimited.

2.5.1 Policy: *The Crown owned wetland and the surrounding buffer located in Cell A shall be dedicated as environmental reserve easement as a condition of the first subdivision approval.*

3.0 LAND USE

3.1. Existing

The lands have historically been used for crop production, pasture and wetlands. The original home site buildings have been removed.

3.2. Land Planning Context

The Shepard Plan – Part B Area Structure Plan identifies the subject lands as a “Business Area”.

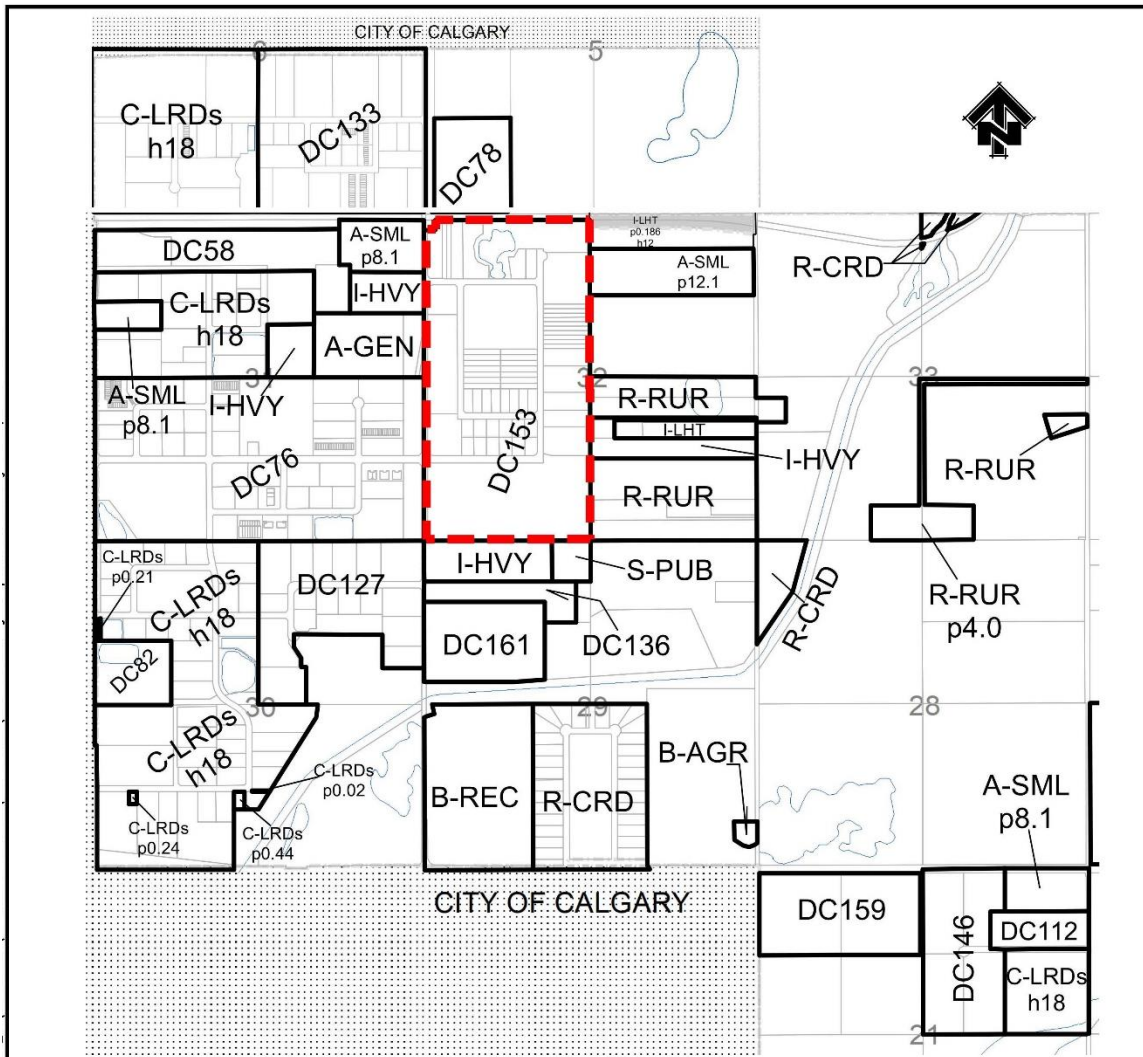
The subject lands are the industrial growth area, one mile east of the City of Calgary fully serviced industrial growth area. Both jurisdictions have identified the industrial growth for the lands between 144 Avenue, Glenmore Trail and Peigan Trail alignments. The Patton Industrial Centre and other new limited service subdivisions are located to the west and north west. Most are built-out with a wide range of commercial and industrial businesses.

To the north are lands designated as Direct Control for an electrical generation plant, and Ranch and Farm District. In time, these lands will be part of the Rocky View County industrial development.

To the east, the lands are designated as Ranch and Farm, Hamlet Industrial and Residential Two District. Figure 4 illustrates the surrounding land use designations. The surrounding owners have been aware of the industrial growth corridors for many years. Development will provide special consideration to the interface with residences.

The Province of Alberta is completing the east Calgary ring-road with interchanges at Glenmore Trail and Peigan Trail. The 61 Avenue SE flyover will cross the ring-road and provide convenient access between the industrial areas of Calgary and Rocky View County.

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A-GEN	Agricultural, General District	C-HWY	Commercial, Highway District
A-SML	Agricultural, Small Parcel District	C-LRD	Commercial, Local Rural District
R-RUR	Residential, Rural District	C-LUD	Commercial, Local Urban District
R-CRD	Residential, Country Residential District	C-MIX	Commercial, Mixed Urban District
R-URB	Residential, Urban District	C-REG	Commercial, Regional District
R-SML	Residential, Small Lot Urban District	I-LHT	Industrial, Light District
R-MD	Residential, Mid-Density Urban District	I-HVY	Industrial, Heavy District
R-MRU	Residential, Multi-Residential Urban District	S-PUB	Special, Public Service District
B-AGR	Business, Agricultural District	S-FUD	Special, Future Urban Development District
B-REC	Business, Recreation District	S-PRK	Special, Parks and Recreation District
B-REG	Business, Regional Campus District	S-NOS	Special, Natural Open Space District
B-LOC	Business, Local Campus District	S-NAT	Special, Natural Resource District
B-LWK	Business, Live-Work District		

Legend:

- - - Subject boundary



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Legal description:
W1/2Sec32-Twp23-Rge28 W4M

Figure 4
Existing Land Use Districts

October 2022

3.3. Industrial Activity and Intermodal Demand

The northern portion of the Shepard ASP planning area has been a focus of industrial activity. Drawing from the synergy of Calgary industries, access to Glenmore and Stoney Trails, and readily serviceable rail access, demand for limited-serviced and fully serviced industrial lands remains strong. Most significantly, the CNR Calgary Distribution Centre and the Patton Industrial Centre have experienced rapid development and demand for rail service and full water service and wastewater treatment service.

The Canadian National Railway mainline on the north boundary of the subject lands is actively servicing intermodal spurs and through collaborative planning efforts with the CNR Calgary Distribution Centre, the subject lands benefit by a direct connection from this CNR mainline. Railway distribution and delivery will become increasingly important as volatile energy prices threaten the feasibility of long haul tractor-trailer systems. Pound for pound, the shipment by rail costs considerably less than tractor-trailer service, has a smaller environmental impact, and represents a more sustainable form of transport. Lots located adjacent to the CNR mainline are serviceable with spur lines. Preliminary details have been assessed by Focus Engineering in a letter report of October 2013. Further details and impact identification are presented in Section 4.4.

In the future, the Calgary east ring-road has major implications for highly efficient rail to highway distribution opportunities for the Queen Elizabeth Highway corridor. Careful planning for serviced industrial lots and support services will ensure continual viability and investment for the Shepard ASP business districts.

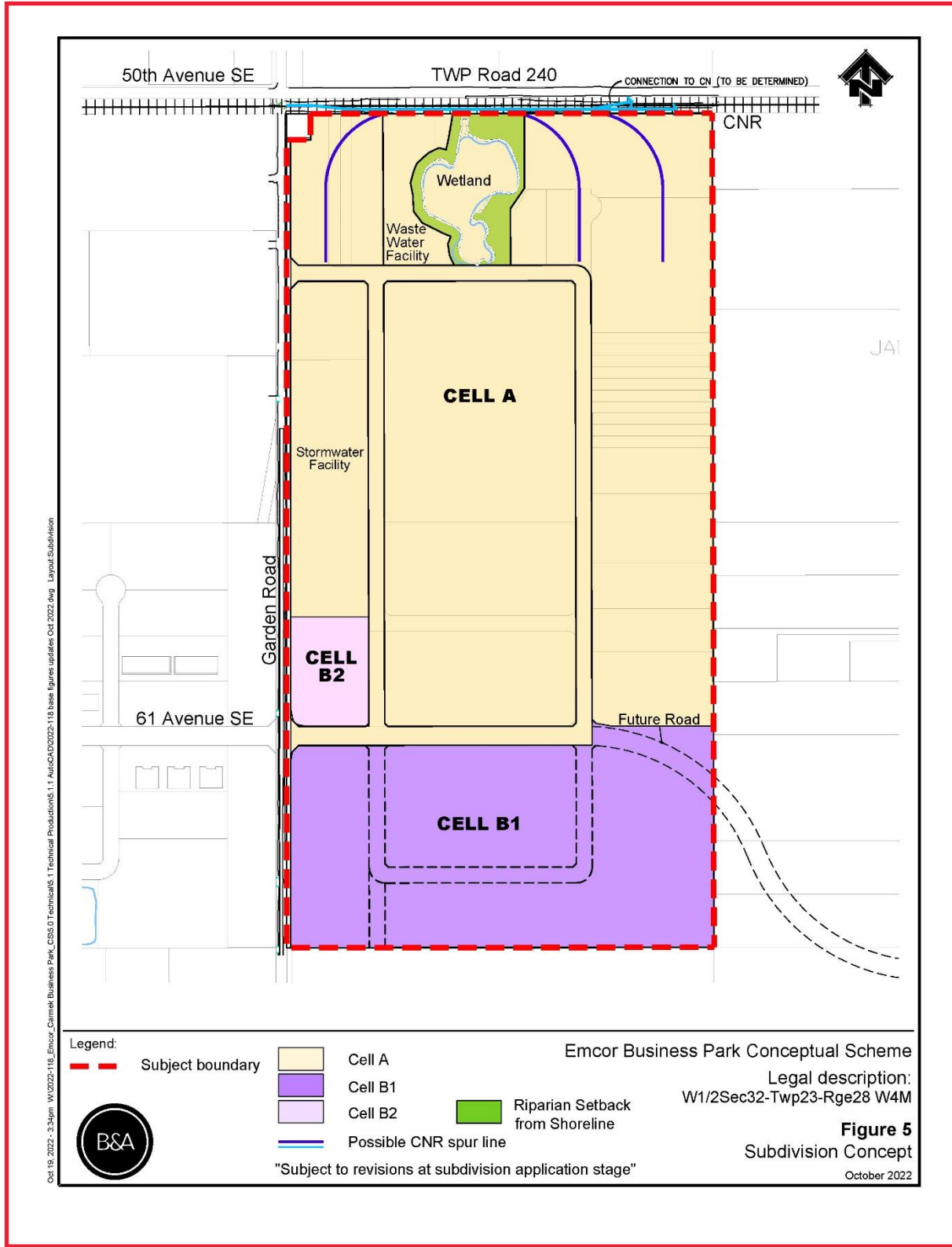
3.4. Emcor Business Park

Pursuant to Section 5.0 of the Shepard ASP, the subject lands will be redesignated to accommodate business uses. This is in accordance with the policies of the Shepard ASP and is consistent with the surrounding industrial businesses.

Due to the proximity to Highway 1A, Secondary Highway 560, railway connections, other business uses, and 61st Avenue, this site has the ability to effectively serve several industrial uses for example distribution facilities; manufacturing; warehousing; fabrication; assembly; disassembly; production or packaging of materials, goods, or products; indoor and outdoor transshipment; containerization; storage of materials, goods or products; small scale retail; and commercial recreational uses.

The plan includes the option for rail access depending on market demands as shown on Figure 5.

Emcor Business Park Conceptual Scheme



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The east side of the plan area interfaces with Residential Two District parcels. Landscaping and/or berms will be provided in the site design to provide visual screening and noise attenuation.

The many unique features of the Emcor Business Park necessitate the need for a specific Direct Control land use bylaw. Innovative shared potable water, shared storm water facilities, and shared wastewater services require regulatory controls that go beyond the standard land use bylaw districts.

3.4.1 Policy: *Land use regulations shall generally conform to the intent of this conceptual scheme and a Direct Control Bylaw, which will include the appropriate range of uses, development regulations, subdivision and servicing requirements.*

3.4.2 Policy: *The developer shall provide visual screening and noise attenuation on parcels that have an interface condition with residences where appropriate to the satisfaction of the Development Authority.*

3.5. Development Concept

The developer provides full services to each business. A centralized well-water system is provided by the developer. Rather than each lot providing its own wastewater disposal and its own storm water management, the developer provides shared facilities with centralized management. The Emcor servicing plan is designed to dispose of treated stormwater and treated wastewater in Cell B reserved for that purpose.

A wide range of parcel sizes is envisaged for large and small businesses according to market demand from 1.23 acres to 40 acres generally as shown on Figure 5.

An important opportunity is for flexibility in creating parcel sizes customized at the time of lot purchase by consolidation of adjacent land titles. Lot sizes will include frontages ranging from 10 metres to 400 metres to allow for maximum flexibility to accommodate a wide range of businesses as described in Section 4.0.

Development standards and architectural guidelines will be utilized at the Development Permit stage to ensure that all new site development will be compatible with adjacent land uses. These standards are generally compatible with adjacent area developments to ensure a seamless edge and development appearance. Architectural Controls and Restrictive Covenants, reflecting the "Commercial, Office and Industrial Design Guidelines" passed by Resolution of Council (July 2010). It is an objective to have LEED Certified and/or LEED designed buildings that utilize innovation in environmental design and this shall be detailed and registered on title at the subdivision stage.

3.5.1 Architectural Guidelines and Implementation

Architectural controls shall be established at the subdivision stage.

The use of “green” building technology and enhanced energy efficiencies will be encouraged. Objectives for environmental consideration include: use of green energy (i.e. wind or solar); water conservation and recycling; on-site storm water treatment (bio-swales); preservation and enhancement of the natural environment; LEED Certified and/or LEED designed buildings that utilize innovation in environmental design; re-use of by-products between businesses; sharing of resources and facilities between businesses.

3.5.1 Policy ***Green building and site design techniques shall be utilized. Architectural Controls and Restrictive Covenants, reflecting the “Commercial, Office and Industrial Design Guidelines” passed by Resolution of Council (July 2010), and shall be detailed and registered on title at the subdivision Stage.***

3.5.2 Policy: ***Implementation of the Architectural guidelines will be by the Developer, as an instrument on title, and applications for building will not be permitted to proceed to the Building Permit stage without adherence to the Architectural Guidelines.***

3.5.3 Policy: ***Architectural Controls shall inform quality in the built environment and include but not be limited to the following to promote a seamless appearance with adjacent area developments:***

i. Emphasis and a higher degree of articulation on elevations that interface and may be visible from Garden Road and 61 Avenue.

ii. Screening of all roof top mechanical and electrical equipment.

iii. Coordinated colour, material and finishes of all buildings to achieve a reasonable continuity of appearance.

iv. Quality exterior finishing materials which may include metal, pre-cast-concrete, architectural site cast concrete, architectural tile, and commercial grade brick or masonry. Wood, unfinished concrete and concrete block may be used as a secondary finishing material only.

v. Façades of buildings that exceed 31 metres measured horizontally, and facing public roadways, shall incorporate wall plane projections or recesses having a depth of at least 3% of the length of the façade and extending at least 20% of the length of the façade.

vi. Façades of buildings facing onto Garden road and 61 Avenue shall include at least three of the following architectural elements: colour change; texture change; material module change; expression of architectural or structural bay through a change in plane such as an offset, reveal, or projecting rib.

vii. Roofs should have at least two of the following features: parapets concealing flat roofs and/rooftop mechanical and electrical equipment; overhanging eaves extending past the supporting wall; sloping pitched roofs with two or more roof slope planes; roof-top gardens that support ecological functions such as stormwater retention, building insulation, bird habitat, outdoor green space, etc.

viii. Each primary building shall have a clearly defined main entrance featuring at least two of the following: Canopy or portico; overhang or arcade; raised corniced parapet over the door; outdoor amenity area; upgraded window glazing areas; integrated planters or landscaped sitting areas.

ix. A minimum 3.0 metre landscaped area shall be provided between the front of any primary building and any adjoining parking or lot areas.

x. Loading docks, garbage storage and other service areas shall be concealed from public view through use of screening materials that are consistent or complementary with the architectural theme of the primary building and shall not be located on building facades facing Garden Road and 61 Avenue.

xi. Outdoor display, storage, and operations yards, shall not be located within minimum required landscaped yards.

3.5.4 Signage

Signage is intended to promote business and ensure a coordinated and pleasant presence in the business park.

3.5.4 Policy: *The size and placement of all signage shall be considered an integral part of site development and compliment the overall character of the development.*

3.5.5 Lighting

Rural residents appreciate the “Dark Skies”. Development in the Emcor Business Park shall support the implementation of dark skies lighting and are directed to utilize lighting in accordance with the International Dark Sky Organization’s Model Lighting Ordinance.

3.5.5 Policy: *All private lighting including site security lighting, parking area lighting, and signage shall be designed to conserve energy, be directed downwards, and reduce glare. All development will be required to design lighting in accordance with Dark Skies policies being promoted by the International Dark Sky Organization and ensure that spill over-glare and other unnecessary lighting is eliminated from use on the site.*

3.5.6 Fencing

In order to promote a seamless appearance between this Conceptual Scheme Area and adjacent area developments, the fencing strategy for the site will be equivalent to that already in place in the vicinity.

3.5.6 Policy: *The following shall be considered as guiding principles for fencing:*

- i. No security fencing shall be erected in a required front yard facing a public street. Front yard areas may contain decorative low level fencing that is architecturally consistent and integrated with the overall building design.*
- ii. Impermanent and/or lightweight fencing materials will not be acceptable.*
- iii. The County may require that all lots in a particular subdivision phase be provided with a good-quality project fence to be maintained*

by the Developer or the Lot Owners' Association.

- iv. Vinyl coated chain link fencing combined with landscaping is preferred for site areas that are visible to public roadways. Use of standard security chain link fencing should be limited to portions of the site where security is necessary.*

3.5.7 Landscaping

Care and consideration in landscaping are important considerations.

3.5.7 Policy: *A Landscape Plan shall be submitted with each development application to demonstrate the following requirements:*

- i. Plant material proven for the climate zone for the Calgary region and also addresses low available water resources for long-term maintenance;*
- ii. The same or similar mix of tree species planted in front yards and/or boulevards along both sides of a road for visual continuity;*
- iii. Avoid species monoculture over large areas;*
- iv. Retaining walls and front yard fencing shall be decorative as well as functional and integrated into the front yard landscape design;*
- v. Decorative feature walls or low profile landscaped berms including mass plantings of flowering shrubs, evergreen shrubs, or decorative tall grass species should be incorporated into the landscape designs at key public intersections and entryways without interfering with necessary traffic sight lines;*
- vi. No potable water is to be used for irrigation.*

3.5.8 Grading

3.5.8 Policy: *The Development Authority may issue a development permit for stripping and grading prior to issuance of a development agreement; or, prior to subdivision approval; or, prior to development permit issuance for a business provided the following conditions have been met.*

- i. A preliminary grading plan depicting subgrades, an erosion and sediment control plan, and a construction management plan that are satisfactory to the County.*
- ii. The Owner shall furnish securities in an amount satisfactory to the County.*
- iii. No topsoil shall be removed from the plan area without prior approval by the County.*
- iv. A storm water management plan that is satisfactory to the County.*

3.6. Performance Standards

As required by Section 5.1(e) of the Shepard ASP Performance Standards and Development Guidelines, the following policies are guidelines to manage potential nuisances. A Direct Control Bylaw will implement performance standards through the development permit process.

3.6.1 Policy: *The developer shall ensure the project meets or exceeds the minimum performance standards and development guidelines of the Conceptual Scheme and Direct Control Bylaw to the satisfaction of the Development Authority.*

3.6.2 Policy *Development performance standards shall be included in a Direct Control Bylaw and implemented on a site specific basis in accordance with the guidelines established in the Conceptual Scheme.*

Air Contaminants, Visible and Particulate Emissions

Airborne particulate matter originating from storage areas, yards or roads shall be minimized by landscaping, paving, or application of water on these areas or by other means considered appropriate by the County as defined in a Development Permit and in accordance with sound environmental practices.

Odorous Matter

No use or operation on any site shall cause or create the emission of odorous matter or vapour beyond the building or site that contains the use or operation.

Toxic Matter

No use or operation shall cause or create the emission of toxic matter beyond the building that contains it. The handling, storage and disposal of any toxic or

Emcor Business Park Conceptual Scheme

hazardous materials or waste shall be in accordance with the regulations of any government authority having jurisdiction and in accordance with any Chemical Management Plan that may be required by the County and as defined in a Development Permit.

Garbage Storage

Garbage and waste material at any location on the site shall be stored in weatherproof and animal proof containers located within buildings or adjacent to the side or rear of buildings, and those areas shall be screened from view by all adjacent properties and public thoroughfares. Mechanical waste compactors are encouraged.

Fire and Explosion Hazards

Uses and operations on the site which store, manufacture, or use materials or products considered hazardous due to their corrosive, poisonous, flammable, reactive, or explosive characteristics shall comply with the applicable fire regulations of the County and the regulations of any Government Act or Regulation and in accordance with any hazard or emergency management plan required by the County, and as defined in a Development Permit.

Utilities

The County, the developer or a third party acceptable to the County is responsible for operating and maintaining the water system, the fire protection system, the wastewater system, the crop irrigation area, and the stormwater management facilities to the satisfaction of the County.

4.0 SUBDIVISION AND DEVELOPMENT

4.1. Subdivision Design

Figure 5 illustrates the road plan and general lot concept for commercial and industrial businesses.

A wide range of parcel sizes is planned for large and small businesses according to market demand, from 1.23 acres to 40 acres in Cell A, as shown on Figure 5.

Cell B1 is for disposal of stormwater and treated wastewater. ~~Cell B2 is for disposal of stormwater.~~ Approximately 31% of the conceptual scheme plan area is set aside for storm water management operations. Cell B1 will be planted and remain in agricultural use until such time as more efficient solutions are implemented. Cell B2 ~~is no longer needed for~~ ~~will be used for~~ the disposal of stormwater as more efficient solutions have been ~~until such time as more efficient solutions are~~ implemented. At this~~hat~~ time, ~~Cell B1 or Cell B2 is proposed to develop~~ ~~may be developed~~ with industrial uses similar to Cell A, subject to an amendment to both this Conceptual Scheme and the Direct Control Bylaw. Cell B1 may also be developed when more efficient solutions are introduced, subject to an amendment to both this Conceptual Scheme and the Direct Control Bylaw.

An important opportunity is for flexibility in creating parcel sizes that are customized at the time of purchase. This will be implemented initially at the first subdivision application where lot sizes will be established with a range of frontages from 10 metres to 400 metres to allow for the maximum flexibility by land title consolidation at the time of purchase. In addition, the following guidelines will apply.

Statistics subject to refinement at the subdivision stage.

	Acres	Hectares
Cell A	167.85	67.93
Cell B1	75.66	30.92
Cell B2	6.94	2.82
Stormwater PUL	15.44	6.25
Wastewater Utility	5.88	2.38
Rail Line and spurs	4.29	1.99
Environmental Reserve Pond and Buffer	12.23	4.95
Internal Roads	16.63	6.73
61 Avenue	5.93	2.40
Garden Road Widening	3.00	1.21
TOTAL	314.5	127.27

4.1.1 Policy: *Subdivision plans shall generally be in conformity with Figure 5; however, there may be a variation in the number and size of lots the satisfaction of the Development Authority.*

4.1.2 Policy: *The minimum lot size shall be 1.23 acres.*

4.2. Transportation Context

The Conceptual Scheme Planning area is centrally located within an area that will be serviced by a comprehensive network of provincial and municipal roadways as shown on Figure 7;

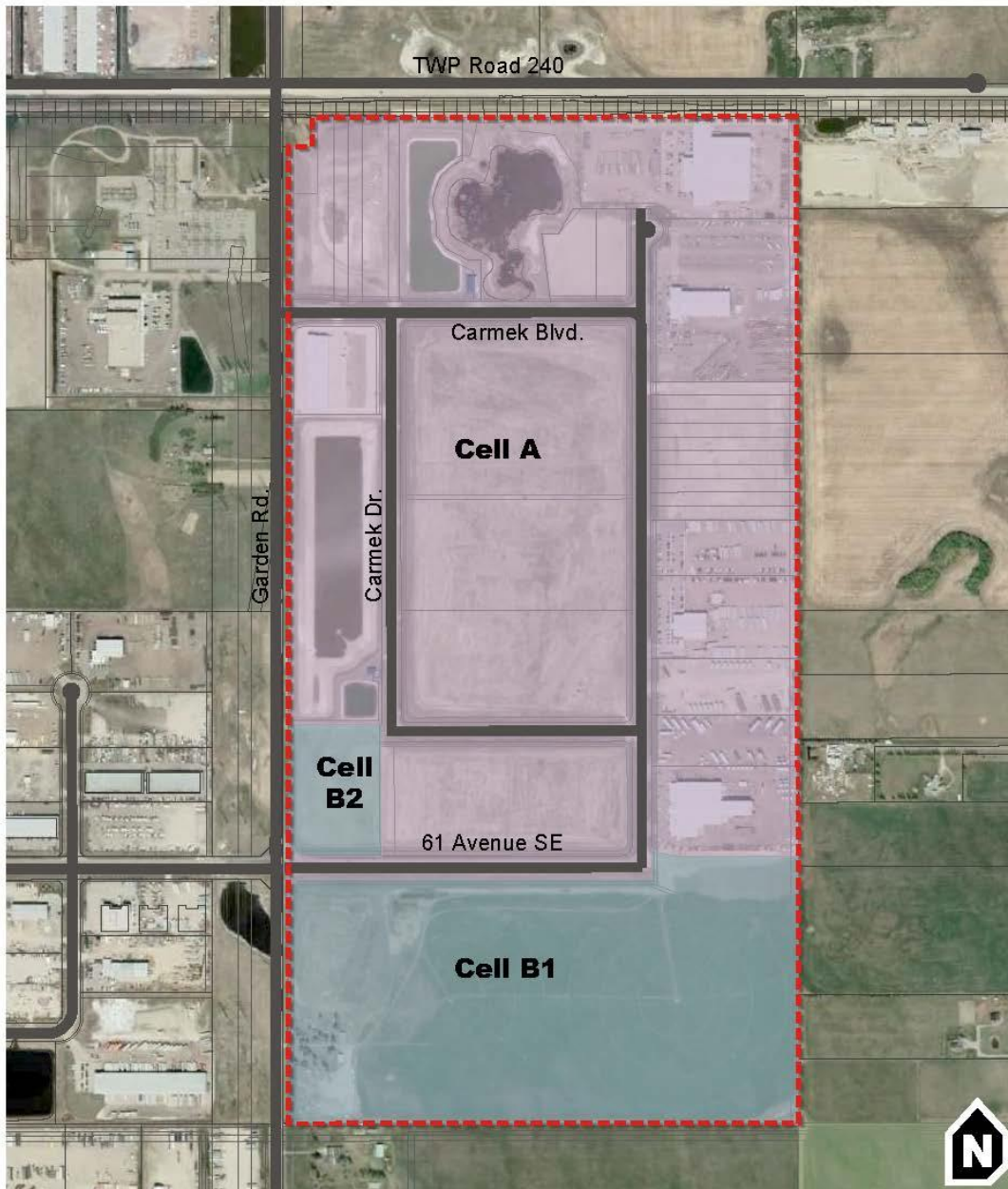
- Calgary East Ring-road Freeway.
- Glenmore Trail (Highway 560).
- 61 Avenue.
- 50 Avenue.
- Peigan Trail.
- Range Road 285 (Garden Road).
- Range Road 284 (Conrich Road).
- Closure of 84 Street at Glenmore Trail.

The Calgary East Ring-road Freeway opened in 2013. There is a full interchange at Glenmore Trail and Peigan Trail. The 61 Avenue SE flyover the ring-road connecting the site to the City of Calgary road network. Figure 7 illustrates the road network.

A Traffic Impact Analysis was conducted by DA Watt Engineering in 2012 is submitted under separate cover. The Traffic Impact Study will be updated in conjunction with a subdivision application.

4.2.1 Policy: *The Traffic Impact study prepared in March 2012, shall be updated in conjunction with subdivision applications. Updated Traffic Impact Studies will be prepared in consultation with the County, the City of Calgary, and Alberta Infrastructure and Transportation. The cost of study and upgrades is borne by the Developer.*

Emcor Business Park Conceptual Scheme



Aug 31, 2022 - 2:34pm W:\2022-118_Emcors_Carmek Business Park_CS\5.0 Technical\5.1 Technical Production\5.1.1 AutoCAD\2022-118 Concept 2022 Aug30th.dwg Layout:FIG PLAN AREA



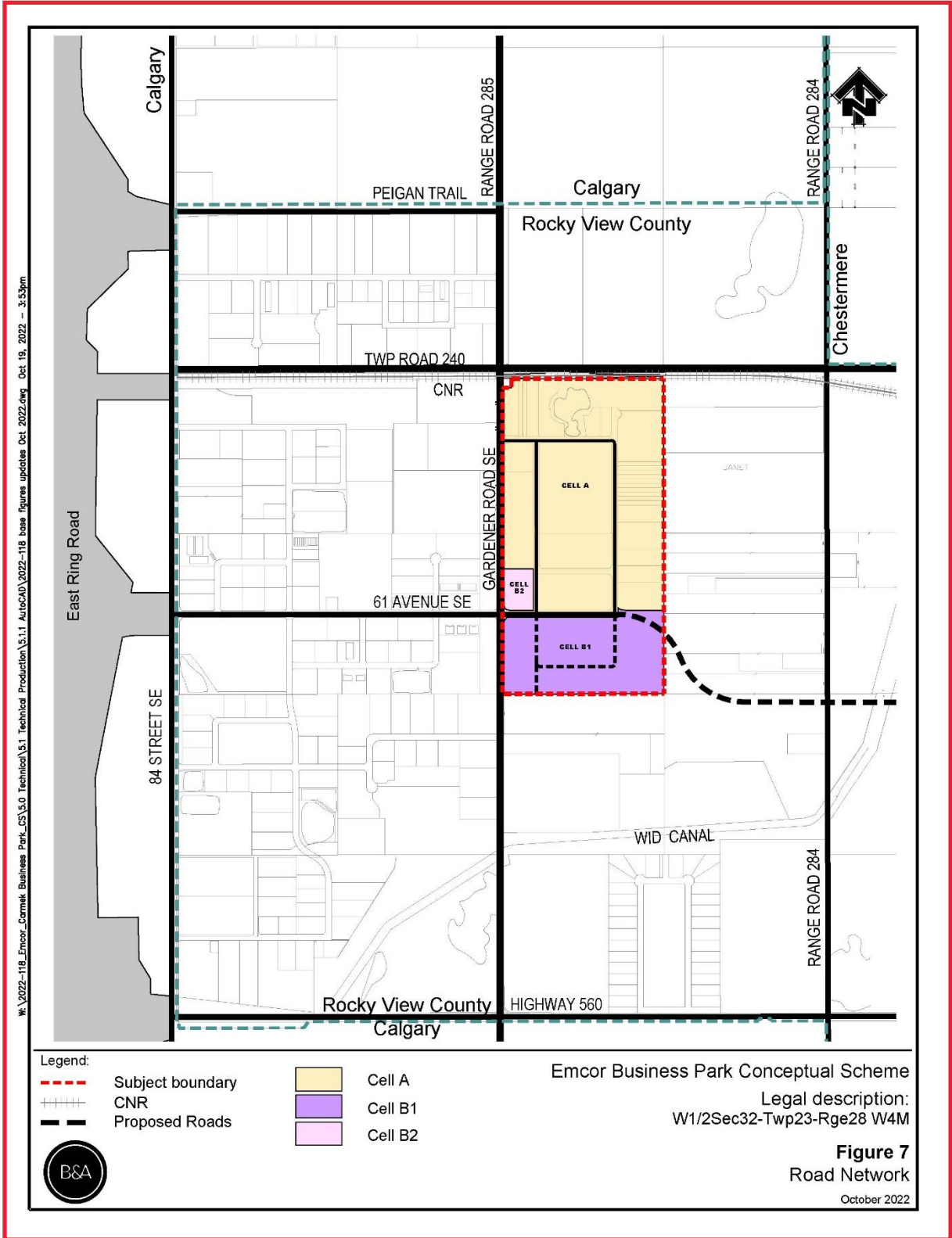
Legend:

- Cell A - Business Development Area
- Cell B1 - Stormwater and Wastewater Disposal
- Cell B2 - Vacant Stormwater Disposal

Emcor Business Park Conceptual Scheme

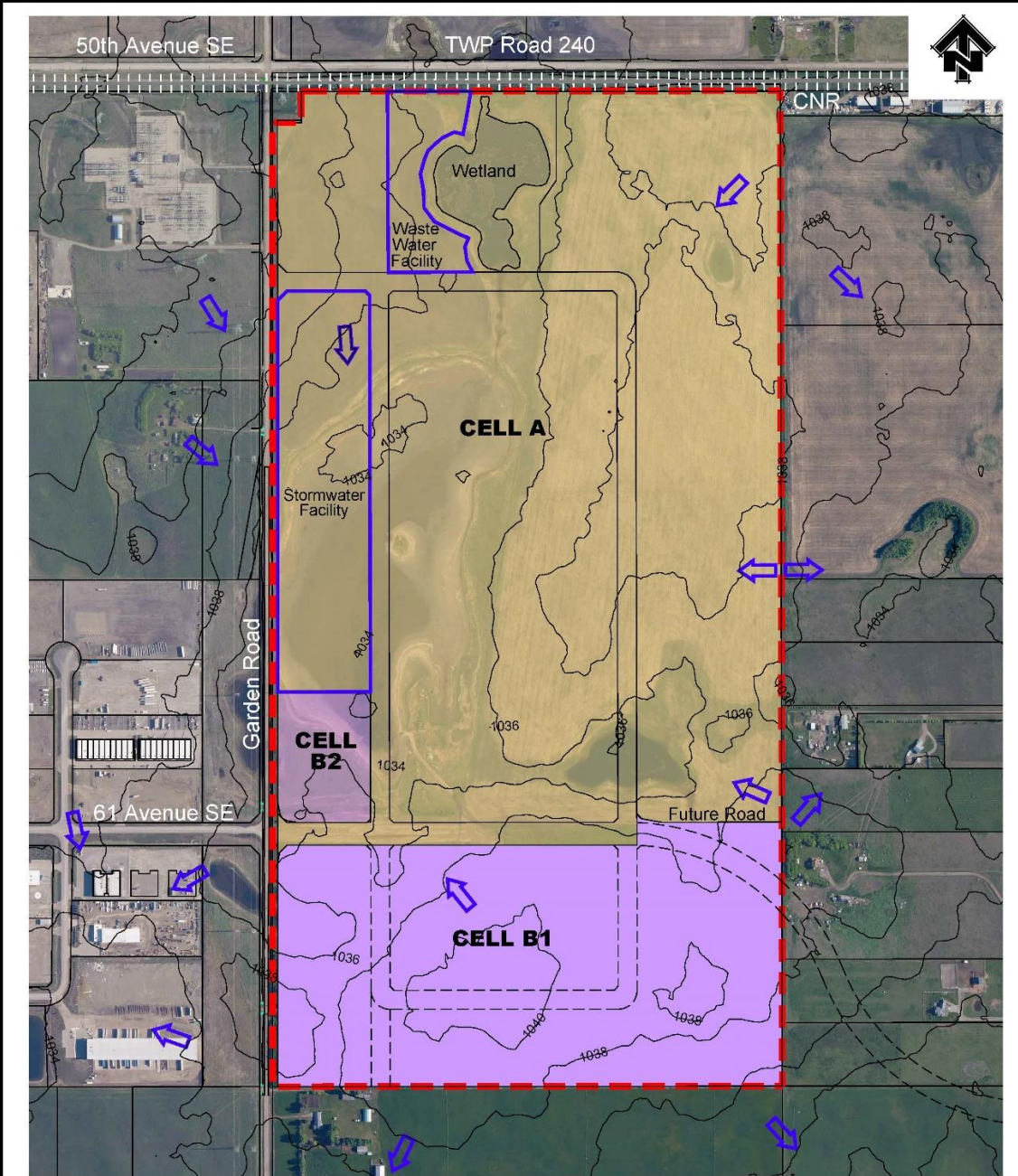
Figure 6
Plan Area
 W 1/2 32-23-28-W4M
 September 2022

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- Legend:
- Subject boundary
 - ↔ Drainage Direction
 - Cell A
 - Cell B1
 - Cell B2



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Legal description:
W1/2Sec32-Twp23-Rge28 W4M

Figure 8
Existing Drainage

October 2022

4.3. Roadways

The subject site has been designed to efficiently accommodate both rail and vehicular service as shown on Figures 5 and 7. Internal roadways have been designed to accommodate both the short and long term traffic flows and 61 Avenue connections to the east industrial growth area in the County.

Range Road 285 (Garden Road) is on the west side. The subdivision concept includes the dedication of additional right-of-way. Garden road SE shall be upgraded from a gravel standard to a two-lane paved road from 61 Ave SE to the north side of Township Road 240. In addition, a pathway will be constructed on the east side of Garden Road SE.

The internal roadway system will be designated as general industrial roadways at the time of subdivision approval. Roadways are designed to accommodate heavy truck movements by providing straight thoroughfares, well-spaced driveways and wide turning radii.

- 4.3.1 Policy:** *The transportation network shall generally follow the provisions in the Shepard ASP, the Concept Plan and the Southeast Industrial Corridor Growth Area Plan – Transportation Study (iTrans June 2009).*

- 4.3.2 Policy:** *The internal road network generally as shown on Figure 5, shall be provided as public road rights-of-way as a condition of the first subdivision approval.*

- 4.3.3 Policy:** *Additional right-of-way along Range Road 285 (Garden Road) shall be provided via road dedication as a condition of the first subdivision approval.*

- 4.3.4 Policy:** *Lots will not have direct access to Range Road 285 (Garden Road).*

- 4.3.5 Policy:** *Lots will have direct access to 61 Avenue however driveways shall be consolidated as much as possible along common property lines to reduce the number of access points along 61 Avenue.*

- 4.3.6 Policy:** *To facilitate future industrial development to the south and east and possible road extensions to these areas, the plan of subdivision will require either dedication of these road rights-of-way or Road Acquisition Agreements generally as shown on Figure 5.*

4.3.7 Policy: *The subdivision plan shall include Industrial / Commercial (I/C) roadway standards for internal roadways.*

4.3.8 Policy: *Garden road adjacent to the concept plan area as shown on Figure 5 shall be upgraded to County standards at the developer's cost as a condition of the first subdivision application.*

4.3.9 Policy: *The developer shall explore the provision of a regional pathway on either the west or east side of Garden Road as a condition of the first subdivision application.*

4.4. Railway Access

Parcels that abut the CNR rail line may be serviced by a spur line generally as shown on Figure 5. There is no intention to create an intermodal transfer site. The rail line connection will originate from the existing Canadian National Railway mainline. A siding line may be required as part of the rail servicing for specific individual businesses. The business operator adjacent to CN lands will be responsible for approvals required from all approval authorities. On site impacts will be subject to the County approval through the development permit process. Consideration will be given to impacts on adjacent lots and impact on traffic for the Garden road crossing. Caveats detailing the possibility of rail service on adjacent lots will be registered on lots abutting CN rail lands and any lot that may abut possible rail serviced lots.

4.4.1 Policy: *Rail access may be included in subdivision and development applications for lots which abut the CNR mainline at the developer's cost. Individual business operators will be responsible for all related approvals from the County, CNR and other authorities.*

4.4.2 Policy: *The developer shall register appropriate caveats on land titles of affected properties as a condition of the subdivision application or development permit application.*

4.5. Municipal Reserve

Municipal Reserve will be provided by cash-in-lieu of land to the County in conformity with the Municipal Government Act.

4.5.1 Policy: *Municipal Reserve shall be provided by cash-in-lieu of land to the satisfaction of Council.*

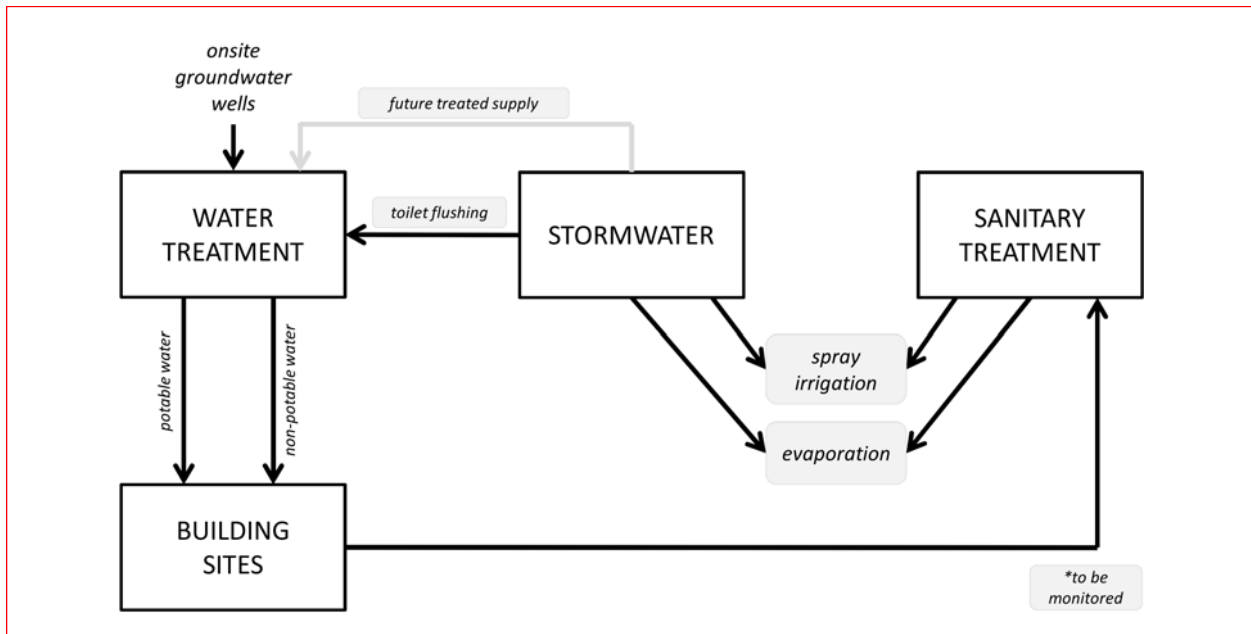
4.6. Innovative Servicing Concept

The servicing strategy utilizes a sustainable and innovative approach that combines emerging technologies to minimize the use of treated water for landscaping and toilets. This approach incorporates sustainability principles where storm water, treated effluent and potable well water create a water balance that satisfies both interim and long-term demands. Refer to Figures 9 and 10.

Because the area does not, at the present time, have an outlet for the release of stormwater, all stormwater must be kept on-site. Storm water is reserved in a central pond and is used for evaporation, irrigation and non-potable applications. The majority of storm water from the central pond will be used to irrigate forage crops, primarily alfalfa in Cell B1.

The water and wastewater systems will service all businesses as indicated on Figure 9. The water system will initially consist of water wells for potable uses. Stormwater for non-potable uses will be provided at the request of the businesses subject to AENV.

A pilot water treatment plant will be constructed by the Developer and operated under the supervision of the County and Alberta Environment with the intent of demonstrating the viability of utilizing stormwater for potable uses. The pilot project will include essentially all processes intended for the final facility. Several parameters including turbidity and alkalinity will be monitored.

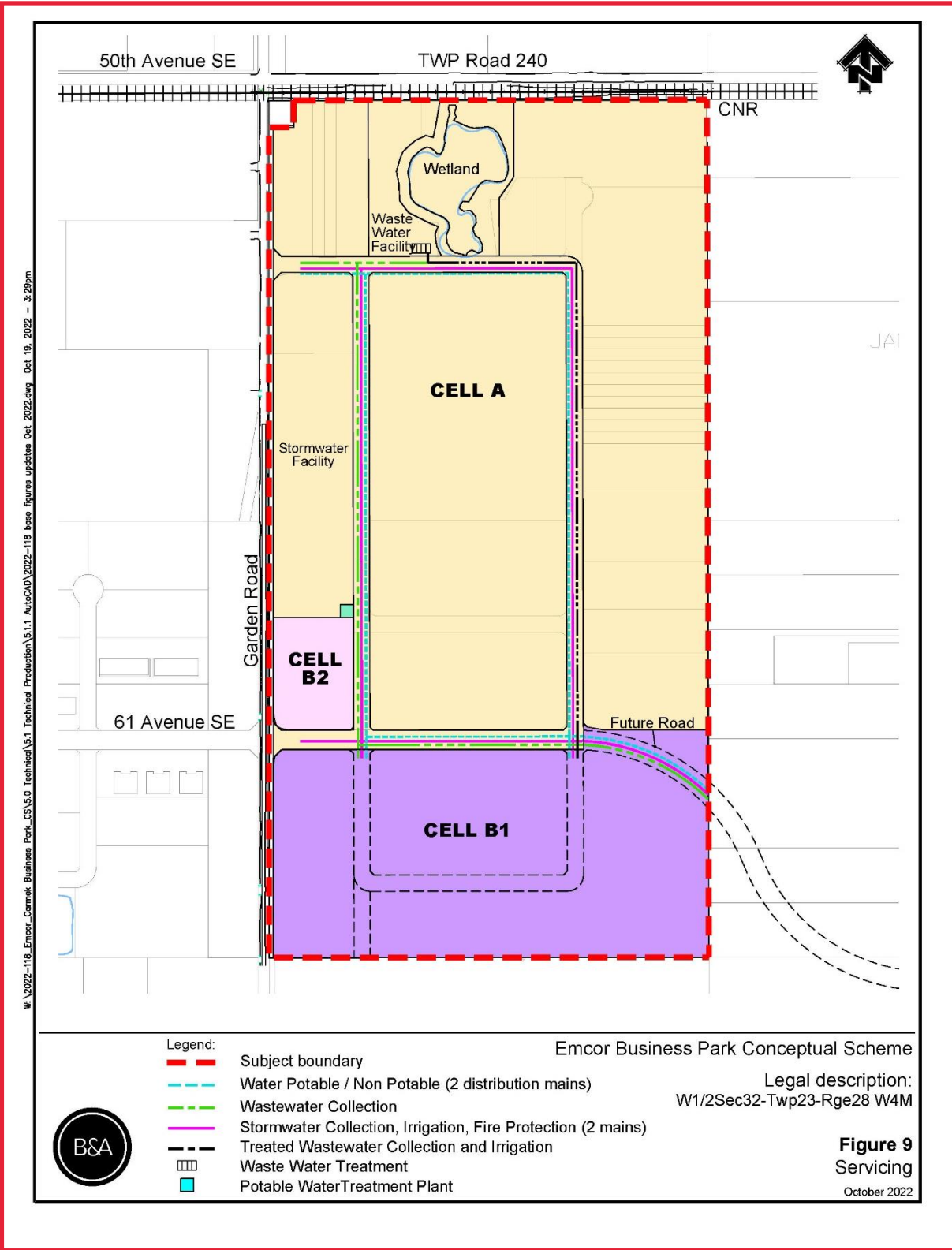


The wastewater plant will treat effluent and pipe the treated water to a storage pond. Treated wastewater will be disposed in the crop irrigation area in Cell B1.

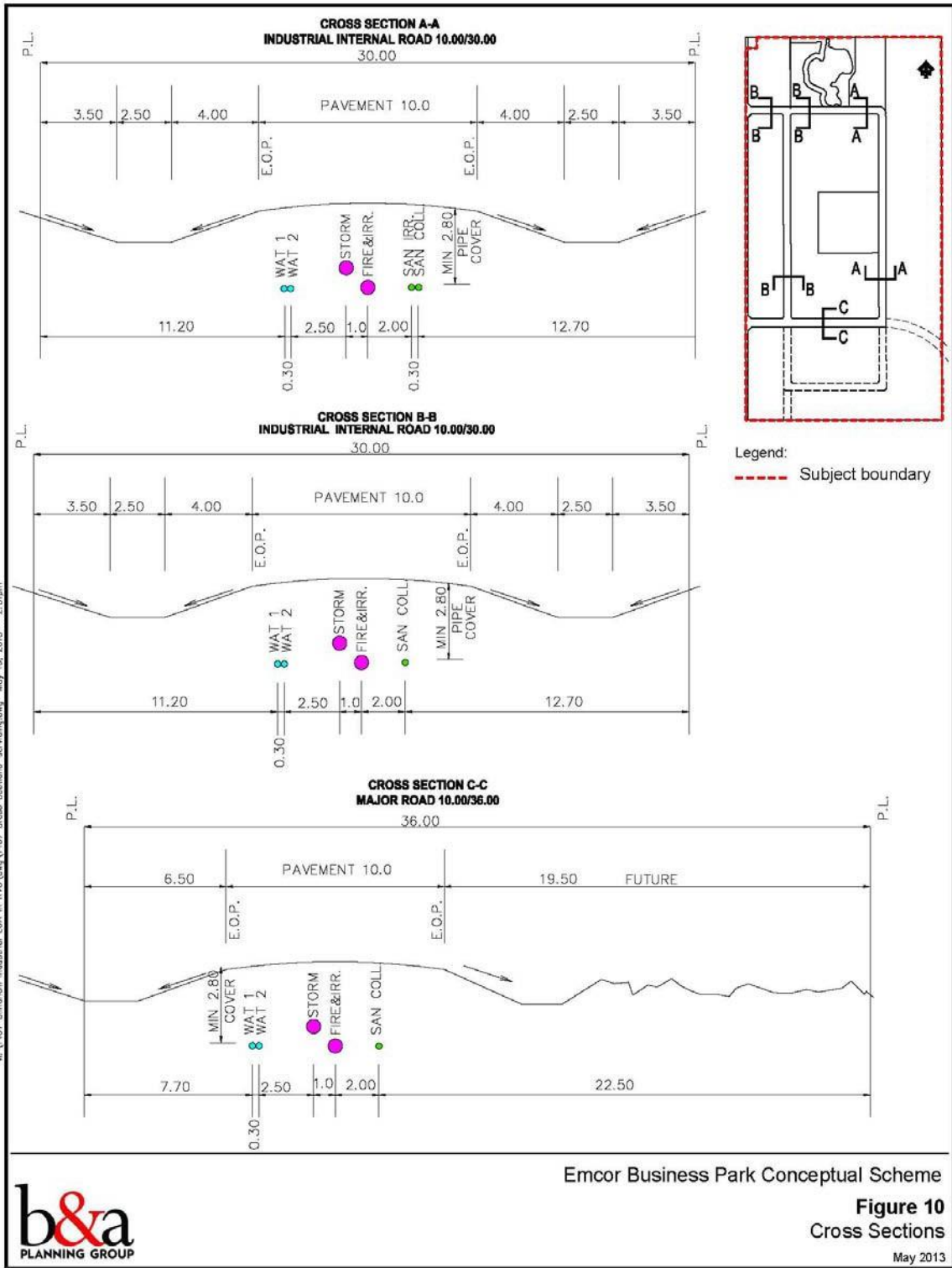
Emcor Business Park Conceptual Scheme

Provision for future regional servicing will provide for the expansion of wastewater treatment facilities generally as shown on Figure 11. The extent of the service area outside the Emcors Plan area will be determined in cooperation with the developers at the discretion of the County.

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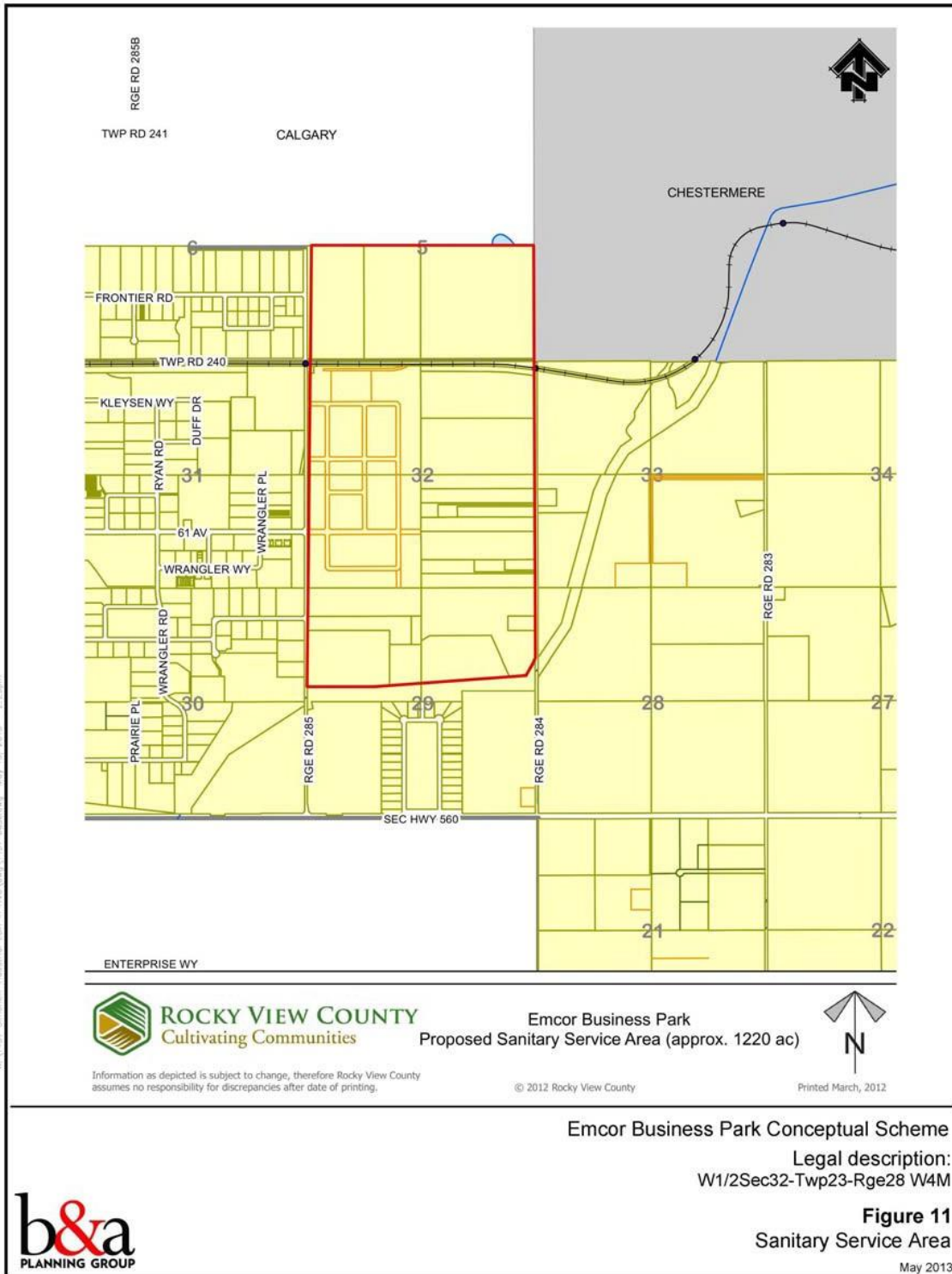


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Utility lots will be identified in the subdivision plan and will accommodate components of the water, wastewater and stormwater systems. The designation and ownership of the utility lots will be determined prior to subdivision approval to the satisfaction of the County.

The developer's preference is implementing the innovative servicing concept as described above. Built into the plan are redundancies for servicing if for any reason innovative servicing components cannot be implemented. If storm water cannot be used for potable and non-potable uses then well water will be used. If well water cannot be used for potable uses then water can be trucked in to cisterns on individual lots. If the sanitary treatment plant has interruptions then sanitary effluent can be trucked from the equalization tank at the plant. Alternatively sanitary effluent can be trucked from the individual septic tanks on each lot. ~~If storage of stormwater is insufficient then the storm pond could be expanded into Cell B2.~~ If disposal of storm water is insufficient, then reserving a portion of Cell A for irrigation may be considered.

4.6.1 Policy: *The primary purpose of Cell B1 is for disposal of treated stormwater and treated wastewater by irrigation. In the event that more efficient disposal solutions are implemented, Cell B1 may be decommissioned and developed in whole or in part with business uses similar to Cell A subject to AESRD and County approval, including an amendment to this Conceptual Scheme and the Direct Control Bylaw.*

4.6.2 Policy: *The primary purpose of Cell B2 is for industrial uses and will be developed with business similar to Cell A. ~~is for disposal of stormwater by irrigation. In the event that more efficient disposal solutions are implemented, the Cell B2 may be decommissioned and developed in whole or in part with business uses similar to Cell A subject to AESRD and County approval, including an amendment to this Conceptual Scheme and the Direct Control Bylaw.~~*

4.6.3 Policy: *The developer shall enter into a Master Servicing Agreement with the County regarding the management of infrastructure prior to the first subdivision approval and in accordance with associated Alberta Environment approvals.*

4.7. Potable Water

A water system consisting of a well water supply, a treatment plant, reservoir and distribution systems will be constructed at the owner's expense. It will provide the

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potable supply for the development and be fully licensed by Alberta Environment under the Water Act. The wells are capable of producing 57,000 cubic metres per year. The projected demand for the development at build-out of Cells A, B1 and B2 is 42,000 cubic metres per year. Stage 1 is projected to use 10,000 cubic metres of well water for potable use.

In addition, through consultation with Alberta Environment and the County, the developer will construct and operate a pilot water treatment plant with the intention of exploring the feasibility of using treated stormwater as the potable supply for the project. The pilot project will include essentially all processes intended for the final facility. Several parameters including turbidity and alkalinity will be monitored. This potable supply will require a licence. Monitoring of the stormwater system will be done by the developer who will report the results to Alberta Environment. Should the results of the monitoring program prove that stormwater can be used as the potable supply, Alberta Environment would be responsible for the approval of that system. In the event that stormwater cannot be treated to levels required for potable use, the stormwater will be used for non-potable uses for the projected demand of 15,000 cubic metres to service Stage 1. The operation and ownership of the stormwater potable supply system is subject to a Master Servicing Agreement prior to subdivision. Non-potable consumptive water use requires the approval of AERSD.

Once constructed, the entire system will be owned and operated by the developer, the County, or a third party established for the sole purpose of providing water service to the development. The establishment of the owner and operator of the potable water system will be done in conjunction with the County and be operated consistent with standards as established by the County and Alberta Environment

4.7.1 Policy: *The developer shall construct a potable water system that includes a supply from groundwater wells, a treatment plant, and a storage reservoir and distribution system and is in compliance with Alberta Environment approvals.*

4.7.2 Policy: *The applicant will provide a cistern on each lot at the development permit stage.*

4.7.3 Policy: *In conformity with Alberta Environment and the County requirements, the developer will construct, manage and operate a pilot water treatment plant for the purpose of exploring the feasibility of using treated stormwater as a potable water supply. The intention is that treated stormwater can be used to supplement well-water.*

4.7.4 Policy: *The developer shall enter into a Master Servicing Agreement with the County regarding the*

management of potable water infrastructure prior to the first subdivision approval and in accordance with associated Alberta Environment approvals.

4.8. Wastewater

A wastewater system consisting of piped collection, a treatment plant, pond storage and an irrigation disposal system will be constructed by the developer. It will be licensed by Alberta Environment and operated by the Developer or the County or a third party to the satisfaction of the County.

Disposal of treated effluent will be by an irrigation system located in Cell B1 as shown on the Concept Plan. The initial 80 acre area may be reduced in size on condition that the disposal function operates as designed. The volume of treated waste water projected at build out to be a maximum of 42,000 cubic metres per year for irrigation is small compared to the volume of treated stormwater used for irrigation. Alfalfa is a heavy water demand crop. Other crops may be explored for maximizing water demand.

Based on discussions with the County and Alberta Environment, the wastewater system will have the potential for expansion to service surrounding businesses as shown on Figure 11. The cost to expand treatment facilities will be the responsibility of each new business owner and will be coordinated by the County. Wastewater from off-site locations could be piped to the treatment facility and once treated, piped back for crop irrigation in other industrial locations to be approved by Council. The option for regional service systems will be further explored through a cooperative effort between the County and the Developer.

4.8.1 Policy: The developer shall construct and operate the wastewater treatment system to the satisfaction of the County and in conformity with the Master Servicing Agreement and Alberta Environment approvals.

4.8.2 Policy: The developer shall construct the treated wastewater disposal system located in Cell B.

4.8.3 Policy: The developer shall enter into a Master Servicing Agreement with the County regarding the management of the wastewater infrastructure and disposal system prior to the first subdivision approval and in compliance with associated Alberta Environment approvals.

4.8.4 Policy: Cell B1 shall accommodate the irrigation system for treated wastewater until such time as a more efficient on-site solution is implemented. In the

event that a more efficient on-site solution has been implemented, the Cell B1 may be decommissioned and developed in whole or in part for business uses in conformity with the Direct Control Bylaw subject to acceptance by the County and Alberta Environment.

4.8.5 Policy: ***The County and the developer will work to examine the provision of a wastewater system in a regional wastewater treatment context.***

4.8.6 Policy: ***The applicant will provide a pump-out tank on each lot at the development permit stage.***

4.9. Stormwater Management

A stormwater management plan has been prepared by TC Engineering Ltd. that provides a sustainable stormwater solution for the Emcor Business Park. Stage 1 of the stormwater management plan provides for servicing the onsite developable lands shown as Cell A within the boundary in Figure 8. Monitoring and testing of the stormwater solution will be ongoing to calibrate its performance, which may allow for further lands to be developed in Cells B1 and B2. The current performance monitoring indicates that Cell B2 is not and has not been needed for stormwater and as such will be developed with industrial uses. The ultimate scenario would be an offsite solution including a continuous discharge. This would result in Cell B1 ~~and B2~~ being converted to developable land.

The Plan recognizes there is no “point of discharge” for stormwater from the site. Recognising the ongoing efforts of the County to establish alternative solutions, the stormwater management system provides an integrated approach to deal with the management and disposal of stormwater that may be used as a model for other projects in the future. The concept coordinates the stormwater management system with the needs of the potable water system and irrigation in a solution that results in complete disposal of all stormwater on-site with no discharge to off-site streams or ditches. Approximately 31% of the land area is set aside for stormwater management purposes.

The design includes using treated stormwater for non-potable water uses, such as flushing toilets, and cooling air conditioning. The design includes the use of untreated stormwater for firefighting and disposal by evaporation and irrigation.

In addition to these strategies, the project could be a model to demonstrate storm water treatment for use as a potable water supply. The stormwater management plan provides a conservative design that will dispose of stormwater and has been reviewed by Alberta Environment.

Excess stormwater will be disposed of through a spray irrigation system in Cell B1 ~~and B2~~, storm and wastewater ponds and landscaped areas in Cell A. When necessary, irrigation shall be applied to road boulevards and undeveloped areas of

Emcor Business Park Conceptual Scheme

Cell A. Undeveloped areas in Cell A shall retain all rainwater and be available for evaporation of storm water from the storm pond. Planted areas will absorb the stormwater at a rate sufficient to dispose of the required volume on-site with no off-site disposal. The effectiveness of the system will be monitored, and the irrigation system may be modified as required. In addition, stormwater will be disposed of by evaporation within the storm and treated wastewater ponds.

Stormwater will be collected by ditches and pipes and discharged into the central stormwater complex. The complex will have 2 ponds. The smaller pond will be used for firefighting and the pilot water treatment plant. The large pond will be used for sediment control and storage for reuse in irrigation.

The stormwater management facilities, including the irrigation system, will initially be owned and operated by the Developer. A master servicing agreement between the Developer and the County will specify that the stormwater system may be acquired by the County at a future date.

4.9.1 Policy: *The developer shall ensure the recommendations of the Stormwater Management Plan are implemented through the regulations of the Direct Control Bylaw, conditions of subdivision approval, conditions of development permit approvals and conditions of building permits in conformity with the Alberta Environment approvals.*

4.9.3 Policy: *Cell B1 shall accommodate the spray irrigation and monitoring system for stormwater until such time as a more efficient on-site solution is implemented. In the event that a more efficient on-site solution has been implemented, Cell B1 ~~and B2~~ may be developed in whole or in part for business uses in conformity with the Direct Control Bylaw and subject to AESRD and County approval.*

4.9.4 Policy: *The developer shall construct the central storm pond facility as a condition of the first subdivision approval.*

4.9.5 Policy: *The developer shall ensure stormwater management facilities are in conformity with Alberta Environment approvals.*

4.9.6 Policy: *The developer shall ensure the goals of the Stormwater Management Plan prepared by TC Engineering Ltd. are implemented, through the design and construction supervision of the stormwater management facilities on each lot. A certified professional engineer shall be responsible*

for implementing and managing the stormwater management infrastructure, to the satisfaction of the County and in compliance with Alberta Environment approvals.

4.9.7 Policy: *The developer shall ensure post-development stormwater runoff shall be not be discharged to adjacent lands unless agreed to by the County, the owners and Alberta Environment.*

4.9.8 Policy: *The stormwater facility generally as indicated on Figure 5 may be modified in size and layout, in conformity with County and Alberta Environment approval of alternate systems.*

4.9.9 Policy: *At the development permit stage, the applicant is encouraged to engage the services of a stormwater engineer to investigate Low Impact Development strategies for stormwater reduction through the use of landscaping, rain gardens, green roofs, treatment for potable uses, treatment for process uses, etc.*

4.9.10 Policy: *Initially, the area generally outlined as Cell B1 on Figure 5 shall be reserved for the disposal of stormwater and treated wastewater. ~~The area generally outlined as Cell B2 shall be reserved for disposal of stormwater.~~ The area has been modified may be modified or reduced in conjunction with a subdivision application provided information is presented that satisfies the County and Alberta Environment that a modified or reduced area will be sufficient for the disposal of treated stormwater and treated wastewater.*

4.9.11 Policy: *The stormwater management facility shall be dedicated as a Public Utility Lot.*

4.9.12 Policy: *The developer shall enter into a Master Servicing Agreement prior to the first subdivision approval to construct, manage and operate the stormwater management facilities until such time as the County elects to take control of same and in conformity with Alberta Environment approvals.*

4.10. Fire Protection

The primary source of fire-fighting protection is stormwater stored in the central pond. A distribution system dedicated for fire-fighting will be constructed with a fire pump system providing continuous flow in accordance with County Fire Flow Specifications and Building Code regulations.

4.10.1 Policy: *The developer shall provide central water sources for fire protection through the use of common stormwater retention facilities, distribution pipelines and hydrants in accordance with the requirements of the County.*

4.10.2 Policy: *The developer shall enter into a Master Servicing agreement with the County prior to the first subdivision approval for the construction, management and operation of the fire-fighting facilities until such time as the County elects to take control of same.*

4.11. Shallow Utility Extensions

Shallow utility services are available in the immediate vicinity of the subject lands and can be extended into the project on a phase by phase basis as required by the utility providers.

4.11.1 Policy: *Electrical service, natural gas, telephone, and cable services are to be extended within the private easement within the lots.*

4.12. Subdivision Phasing

The phasing of the development will be determined by the Developer as follows:

- Facilitate the logical and efficient extension of road access and services from west to east in order to utilize existing service and access infrastructure along Garden Road.
- Be flexible to allow for lots dependent upon market demand for a wide range of lot sizes.
- Recognize the need to extend road access, services and crop irrigation area in an efficient and logical manner.

4.12.1 Policy: *Phasing will be in determined by the Developer and shall include the required utility services, irrigation area in all or part of Cell B1 ~~and Cell B2~~.*

5.0 IMPLEMENTATION

Implementation will require land use redesignation to a DC District, subdivision approval and development permit approvals.

5.0.1 Policy: ***Redesignation, subdivision and development shall be guided by the policies herein and implemented through the Direct Control Bylaw, Conditions of Subdivision approval and Development Permits in consultation with the City of Calgary as required by the Shepard ASP.***