THE CITY OF Red Deer
ENGINEERING SERVICES

Offsite Levy Bylaw Update

2025

Contents

1 Introduction

The Off-Site Levy Model and subsequently the Off-Site Levy Bylaw have not been updated since the model was created in 2019. The Municipal Government Act (MGA) requires that the model and rates be evaluated periodically. The current Off-Site Levy Bylaw (3631-2019) requires that costs, infrastructure projects and net developable area are reviewed periodically to ensure that rates are accurately reflected.

A comprehensive update to the model has been completed in 2024 and 2025 by Engineering Services. This included the following updates:

- Review of levies collected to date.
- Review of infrastructure projects completed to date.
- Review of infrastructure project cost estimates.
- Review of relevancy of current infrastructure projects in the model.
- Review of developable area.
- Addition of a new basin to reflect newly annexed lands.

Methodology of the review is provided in detail in the next section.

1.1 Current Off-Stie Levy Bylaw 3631/2019

The current offsite levy bylaw can be found here:

https://www.reddeer.ca/media/reddeerca/city-government/bylaws/Off-Site-Levy-Bylaw-3631_2019.pdf

1.2 Current Definitions

The current bylaw defines each infrastructure type that is identified to be funded in whole or in part from the levy. Only projects contained within the bylaw can be funded from the levy. The infrastructure is broadly defined in the bylaw.

The MGA provides a broad definition of the types of infrastructure that can be funded through off-site levies. In order to assist with determination of projects contained within the levy,

administration developed more detailed definitions of infrastructure types. The following definitions are from 2019 Corvus report that defined the 2019 off-site levy rates.

1.2.1 Roadways Definition

The City of Red Deer maintains a roadway classification system consistent definition of expressway, arterial, collector and local roads contained in the Transportation Association of Canada's "Geometric Design Guide for Canadian Roads."

Local and collector roadways within new development areas are constructed by developers, at their cost, in conjunction with developments.

Expressway and arterial roadways are designed to primarily provide for the movement of through traffic with controlled intersection spacing and are considered to benefit the City at large. Therefore, new developments should contribute their proportionate share of the cost of these roadways.

"Major Thoroughfare" means an existing or proposed expressway, divided or undivided arterial roadway, including the land for right of way, storm drainage, traffic signals, and street lighting, that has been designated as a major thoroughfare by the City, the cost of same having been included in the calculation of the Transportation Off-Site levy rate.

1.2.2 Water Definition

"Truck Water" means an existing or proposed water main, generally having an internal diameter of 350 mm or greater, complete with related pumping and storage facilities that has been designate by the City as trunk facility, the cost of same having been included in the calculation of the Water Off=Site Levy rate.

1.2.3 Sanitary Definition

"Trunk Sanitary" means an existing or proposed sanitary sewer, generally having an internal diameter of 375 mm or greater, or having a depth of cover greater than 6.0 m, complete with related pumping facilities that has been designated by the City as a truck facility, the cost same having been included in the calculation of the Sanitary Off-Site Levy rate.

1.2.4 Stormwater Definition

"Trunk Storm" means an existing or proposed storm sewer generally defined as having an internal diameter of 1,200 mm or greater, as well as storm water storage facilities and

associated outlet piping that has been designated by the City as a trunk facility, the cost of same having been included in the calculation of the Storm Off-Site Levy rate.

2 Methodology

In simple terms, the off-site levy rate is calculated based on the total value of projects in a particular basin divided by the developable area. As projects are completed and levies are collected the cost of projects and developable areas are adjusted to reflect this in the calculation of the rate. Projects are completed and levies are collected annually and as such, the rate is adjusted on an annual basis.

In order to replicate this process, information was collected and rates were calculated for each subsequent year from 2019 up to and including 2022. It should be noted, that we are always working on data that is a year behind. For instance, in order to calculate the 2019 rate we are looking at receipts collected and projects completed in 2018.

The process is as follows:

2.1 Annual Rate Calculations

Beginning in 2020, the following data was input into the model:

- Levies collected in 2019.
- Projects completed in 2019.
- Known cost escalations in 2019.

Development staging and staging for each of the levy types was simply advanced one year into the future assuming the same growth rates that were applied in the development of the model in 2019.

Cost estimates were updated in the year that they occurred if they were known. For instance, projects on Highway 11A were tendered in 2021 so these project cost estimates were updated in the calculation of the 2021 model.

Based on this information an offsite levy rate was calculated. This process was repeated for 2021, 2022 and 2023.

2.2 2024 Rate Calculation

The input data for 2023 was handled in a different manner than previous years. All of the items listed above were completed for 2023 data.

2.2.1 Cost Estimates

Cost estimates for infrastructure projects were updated to accurately reflect current data where known cost estimate increases were not able to be determined based on prior year projects.

Detailed explanations will be provided in each model years section later in this document. Cost estimates have been provided for each project using current unit rates.

2.2.2 Project Review

A detailed review was completed to ensure accuracy of projects listed in the model. In some cases, projects were included in the model that are not included in statutory plans and projects included in statutory plans were not showing in the model. The best example of this was Transportation projects in Queens Business Park.

2.2.3 Staging Review

Staging is determined in two different areas in the model, development staging and then staging of each type of project typically in advance of development in order to meet development need.

The 2024 model update has included a review of the development staging based on consultation with developers. The model is structured to identify the number of hectares to be developed per year in each basin for a 25 year period.

The second element of staging is within each of the infrastructure types identified in the model. With the revised developable areas identified in the basins, each project that supports this growth has also been adjusted accordingly.

2.2.3 Developable Area Review

Developable area in the City has remained stable since development of the model. There are two areas where changes to land use (Laredo) and the development of a new NASP (Bower Woods) have altered the developable area. A review of development areas was also completed to supplement the development area staging review.

3.0 2020 Rate Calculation

3.1 Levies Collected in 2019

Engineering collected offsite levies under two agreements in 2019:

- DA 2019-003 Evraz Water Connection Agreement – 35.14 hectares
- DA 2018-011 19th Street and Sharpe Avenue – 2.93 hectares

The Evraz agreement only collected the water levy because this basin is undeveloped and there are no sanitary or storm connections. Transportation was also deferred as this was an existing development and there was no intensification of use at the time of agreement.

This presents an interesting feature in the model, typically as receipts are collected the developed area is reduced in the model in consideration that the area has been developed. In this situation, only one levy was collected with three remaining. Reducing the developed area every time an individual levy is collected would overstate the amount of area developed by a factor of four and subsequently affect the calculated rate.

To address this, the dollar value amount for the water portion was captured in the development receipts tab however the net development area was not added. The development area will be added once the final levy is collected. This will ensure that the dollar value contribution is included in the reserve balance without affecting the rate.

The 19th Street and Sharpe agreement is dated from 2018, however receipt of payment did not occur until 2019. Review of the 2019 rate determined that the levies on this parcel were not shown to be collected when the 2019 rate was calculated.

The total levies collected in 2019 are:

Basin	Transportation	Water	Sanitary	Storm
7		$546,532.42		
16	$322,830.33	$43,399.16	$93,434.77	$204,194.63
Total	$322,830.33	$589,931.58	$93,434.77	$204,194.63

3.2 Summary of Project Expenditures in 2019.

Transportation

Work was completed on the following Transportation projects in the model:

- Item 2 - 40296 20 Ave (19 St - 55 St) West Berm/Landscaping & Arterial Trail Construction
- Item 4 - 40318 W QEII NE35 QBP Ph 3
- Item 7 - 40384 - Northland Dr from Hwy 2 to Taylor Dr - 4 lanes (Design)
- Item 9 - 40389 - Road 6: Taylor Drive / Hwy 11A Intersection Improvements
- Item 11 - 40384 - Northland Dr from Taylor Dr to Gaetz Ave - 4 lanes
- Item 25 - 40413/40421 - Northland Drive (Hwy 11A) Twinning & Intersection Improvements
- Item 26 - 40419 - CP Rail Overpass (Hwy 11A between Taylor Dr & Gaetz Avenue)

Water

- Item 5 - 46019 - Delburne Road Water Trunk Bower - 40 Ave
- Item 6 - 46020 - Central Park Water Trunk

Sanitary

- Item 11 - 47029 - Hwy 11A Sani Trunk 59-60
- Item 12 - 47033 - NRDRWWSC Oversizing Regional Sewer

Storm

- Item 8 - 48035 - EHN - NW26 - Northland Dr - Pond H5 & 82-81 Trunk
- Item 9 - 48048 - Area 1: Hazlett Lake - Overflow Drainage Route Improvements

Total expenditures from Off-Site Levy reserves in 2019 was as follows:

Transportation	Water	Sanitary	Storm
$50,630	$3,231	$588,656	$36,522

3.3 Known Cost Escalations in 2019

There were no know cost escalations from projects in 2019.

3.4 2020 Offsite Levy Rates

Basin	Transportation	Water	Sanitary	Storm	Total
1	$66,692	$52,196	$48,473	$65,088	$232,450
2	$66,692	$52,196	$48,473	$38,094	$205,455
3	$66,692	$52,762	$83,064	$65,088	$267,607
4	$66,692	$52,762	$83,064	$18,309	$220,828
5	$66,692	$52,762	$7,398	$18,309	$145,162
6	$66,692	$52,762	$4,044	$38,094	$161,593
7	$66,692	$52,196	$55,336	$38,094	$212,318
8	$66,692	$52,196	$83,241	$38,094	$240,223
9	$66,692	$39,584	$5,037	$40,206	$151,520
10	$66,692	$1,194	$4,003	$2,623	$74,512
11	$66,692	$33,087	$1,861	$23,610	$125,250
12	$66,692	$33,087	$31,204	$23,610	$154,593
13	$66,692	$33,087	$25,995	$109,533	$235,307
14	$66,692	$33,087	$1,861	$30,311	$131,951
15					
16	$66,692	$42,305	$4,003	$5,336	$118,337
17	$66,692	$48,451	$25,995	$109,533	$250,672
18	$66,692	$48,451	$76,528	$112,930	$304,602
19	$66,692	$42,305	$76,528	$112,930	$298,456

In 2019 the average total off-levy rate was $204,816 per hectare. Rates are down slightly in 2020 with an average total off-site levy rate of $201,537 per hectare.

4.0 2021 Rate Calculation

4.1 Levies Collected in 2020

Engineering collected offsite levies under one agreement in 2020:

- DA 2020-001 Evergreen Stage 2 Surface – 3.64 hectares

Basin	Transportation	Water	Sanitary	Storm
14	$247,305.24	$ 122,045.56	$ 6,974.24	$ 111,282.08
Total	$247,305.24	$ 122,045.56	$ 6,974.24	$ 111,282.08

Levies collected in 2020 were collected using the 2019 rates. The following table illustrates the difference if they were collected using the updated 2020 rates

Rate Year	Basin	Transportation	Water	Sanitary	Storm
2019	14	$247,305.24	$ 122,045.56	$ 6,974.24	$ 111,282.08
2020		$242,760.61	$120,434.91	$6,774.22	$110,332.04
Difference		$4,544.63	$1,610.65	$200.02	$950.04

This represents a total over collection of $7,305.34 in 2020.

4.2 Summary of Project Expenditures in 2020.

Transportation

Work was completed on the following Transportation projects in the model:

- Item 2 - 40296 20 Ave (19 St - 55 St) West Berm/Landscaping & Arterial Trail Construction
- Item 4 - 40318 W QEII NE35 QBP Ph 3
- Item 5 - 40354 - West QEII Business Park (SE35) Phase 4 - Divided arterial roadway construction (N to S)
- Item 7 - 40384 - Northland Dr from Hwy 2 to Taylor Dr - 4 lanes (Design)
- Item 9 - 40389 - Road 6: Taylor Drive / Hwy 11A Intersection Improvements
- Item 11 - 40384 - Northland Dr from Taylor Dr to Gaetz Ave - 4 lanes
- Item 25 - 40413/40421 - Northland Drive (Hwy 11A) Twinning & Intersection Improvements
- Item 26 - 40419 - CP Rail Overpass (Hwy 11A between Taylor Dr & Gaetz Avenue)

Water

- Item 5 - 46019 - Delburne Road Water Trunk Bower - 40 Ave
- Item 6 - 46020 - Central Park Water Trunk

Sanitary

There were no expenditures on Sanitary projects in 2020.

Storm

- Item 9 - 48048 - Area 1: Hazlett Lake - Overflow Drainage Route Improvements

Total expenditures from Off-Site Levy reserves in 2020 was as follows:

Transportation	Water	Sanitary	Storm
$192,466	$3,016	$0	$7,733

4.3 Known Cost Escalations in 2020

There were no know cost escalations from projects in 2020.

4.4 2021 Offsite Levy Rates

Basin	Transportation	Water	Sanitary	Storm	Total
1	$64,906	$50,456	$46,360	$63,070	$224,792
2	$64,906	$50,456	$46,360	$36,912	$198,635
3	$64,906	$51,000	$79,443	$63,070	$258,418
4	$64,906	$51,000	$79,443	$17,741	$213,090
5	$64,906	$51,000	$7,075	$17,741	$140,722
6	$64,906	$51,000	$3,868	$36,912	$156,686
7	$64,906	$50,456	$52,924	$36,912	$205,198
8	$64,906	$50,456	$79,613	$36,912	$231,887
9	$64,906	$38,261	$4,813	$38,959	$146,939
10	$64,906	$1,154	$3,824	$2,541	$72,424
11	$64,906	$31,970	$1,776	$22,874	$121,526
12	$64,906	$31,970	$29,840	$22,874	$149,589
13	$64,906	$31,970	$24,858	$106,132	$227,866
14	$64,906	$31,970	$1,776	$29,331	$127,983
15					
16	$64,906	$40,881	$3,824	$5,170	$114,781
17	$64,906	$46,826	$24,858	$106,132	$242,722
18	$64,906	$46,826	$73,189	$109,428	$294,349
19	$64,906	$40,881	$73,189	$109,428	$288,404

In 2020 the average total off-levy rate was $201,537 per hectare. Rates are down slightly in 2021 with an average total off-site levy rate of $195,098 per hectare.

5.0 2022 Rate Calculation

5.1 Levies Collected in 2021

Engineering collected offsite levies under two agreements in 2021:

- DA 2021-004 Evergreen Stage 2B Surface – 4.44 hectares
- DA 2021-004 Evergreen Central Park – 1.93 hectares

Basin	Transportation	Water	Sanitary	Storm
14	$433,055.93	$213,713.85	$12,212.58	$194,865.93
Total	$433,055.93	$213,713.85	$12,212.58	$194,865.93

Levies collected in 2021 were collected using the 2019 rates. The following table illustrates the difference if they were collected using the updated 2021 rates.

Rate Year	Basin	Transportation	Water	Sanitary	Storm
2019	14	$432,784.54	$213,576.73	$12,202.82	$194,745.77
2021	14	$413,448.21	$203,651.24	$11,314.62	$186,838.09
Difference		$19,336.34	$9,925.49	$888.20	$7,907.68

This represents a total over collection of $38,057.71 in 2021.

The cumulative over or under collection to date is presented below:

Rate Year	Transportation	Water	Sanitary	Storm	Total
2020	$4,544.63	$1,610.65	$200.02	$950.04	$7,305.34
2021	$19,336.34	$9,925.49	$888.20	$7,907.68	$38,057.71
Total					**$45,363.06**

5.2 Summary of Project Expenditures in 2021.

Transportation

Work was completed on the following Transportation projects in the model:

- Item 2 - 40296 20 Ave (19 St - 55 St) West Berm/Landscaping & Arterial Trail Construction
- Item 7 - 40384 - Northland Dr from Hwy 2 to Taylor Dr - 4 lanes (Design)
- Item 9 - 40389 - Road 6: Taylor Drive / Hwy 11A Intersection Improvements
- Item 11 - 40384 - Northland Dr from Taylor Dr to Gaetz Ave - 4 lanes
- Item 25 - 40413 - Northland Drive (Hwy 11A) Twinning & Intersection Improvements

- Item 26 - 40419 - CP Rail Overpass (Hwy 11A between Taylor Dr & Gaetz Avenue)
- Item 55 – 40421 - Northland Drive Right of Way Acquisition

Water

- Item 5 - 46019 - Delburne Road Water Trunk Bower - 40 Ave
- Item 6 - 46020 - Central Park Water Trunk
- Item 8 – 46022 – Water Model Update
- Item 18 -46023 - Hwy 2A Trunk (600/450mm) from Pump Station to Twp Rd 391- East. (Includes East/West leg at the end)

Sanitary

- Item 17 - 47036 - Sanitary Trunk (NE3) - adjacent to Hwy 2A, connecting shared Regional Line to the area (City Snow Site)

Storm

- Item 8 - 48035 - EHN - NW26 - Northland Dr - Pond H5 & 82-81 Trunk
- Item 9 - 48048 - Area 1: Hazlett Lake - Overflow Drainage Route Improvements

Transportation	Water	Sanitary	Storm
$118,057	$161,445	$22,232	$191,326

5.3 Known Cost Escalations in 2021

In 2021 five projects in the off-site levy model on Highway 11A were tendered. Due to budget shortfall the project did not proceed, however this gave an accurate market assessment of the these projects in the model. These model estimates were updated accordingly:

Item	Project Description	2019 Model Estimate	2022 Model Estimate
7	Highway 11A from QE 2 to Taylor Drive – Twinning	$5,028,213	$7,696,165
9	Highway 11A and Taylor Drive Roundabout	$54,252,755	$8,919,627
11	Highway 11A from Taylor Drive to Gaetz Avenue – Twinning	$15,466,071	$28,666,884
20	Northland Drive – Gaetz Avenue to 49 Avenue	$1,038,361	$768,978
25	Highway 11A and Gaetz Avenue Roundabout	$9,229,083	$11,833,578
26	CP Rail Overpass – Highway 11A	$12,978,473	$29,729,914
NEW	Highway 11A Right of Way Acquisition	$0	$9,229,000
Total		**$97,992,955**	**$96,844,146**
Difference		**-$1,148,809**	

The project description for Item 9 indicates that estimate is comprised of two projects at Highway 11A and Taylor Drive, the first being intersection improvements in 2025 and construction of an interchange in 2029+. Analysis during the Highway 11A project determined that an interchange would not be required until sometime between the 130,000 and 188,000 planning horizons. Recent growth updates indicate these horizons to be well beyond the 25 year time frame. Project estimates were updated to separate these two projects, with the current estimate occurring withing the next 25 years and the interchange beyond 25 years if ever. In future, individual projects will be estimated in model updates and not combined regardless of their timing in the 25 year window.

The other change to the estimates involved the addition of a new project to capture right of way expenditures for the Highway 11A projects. The City prefers to aggregate right of way projects into one job number, even though in this case right of way was purchased for each of the other six projects. The new project estimates do not contain right of way costs. For tracking of expenditure purposes, adding a new project was the simplest method to accurately reflect these costs in the model. The percentage of cost share was estimated to be 75% municipality and 25% developer based on percentages attributed to other projects on Highway 11A.

The last financial item updated in the 2022 model update was contribution from 3rd parties. In 2021, the City negotiated two separate agreements for cost sharing on this project, one with Alberta Transportation and Economic Corridors for $15 million and one with CP Rail for approximately $3 million dollars. The contribution from TEC was included in the 2019 model, the contribution from CP is new.

A summary of changes to contributions is shown below:

Rate Year	Special Provincial Grants	Other Contributions	Total
2021	$19,752,584	$0	$19,752,584
2022	$15,000,000	$3,041,000	$18,041,000
		Difference	**$1,711,584**

The effect of the reduced contributions will increase the reduced project cost in the model, however this is offset by the decrease in the overall cost estimate.

The biggest implication was related to the significant difference in the CPR overpass estimate, which is funded 25% from the levy and increased the developer's share by approximately $3.4 million.

5.4 Development Area Adjustments

Because property was acquired for the Highway 11A project in 2021, the developable area calculations in three basins can be adjusted to reflect the addition of arterial roadway.

5.4.1 Basin 7

Four properties were purchased on the north side of Highway 11A between Taylor Drive and Gaetz Avenue. This right of way is incorporated into the existing Highway 11A road right of way, which is classified as an arterial and will reduce the developable area in Basin 7.

Parcel	Area Purchased (ha)	Reference
Civic Tire	2.36	Civic Tire and Battery IOP
Melcor	2.64	Melcor IOP
Moe	1.14	Moe IOP
Chiles	1.5	Chiles IOP
Total	7.64	

The current arterial roadway area for Basin 7 is 25.32 hectares. In the 2022 model update this area was increased to 32.96 hectares.

5.4.2 Basin 8

Two properties were purchased on the north side of Highway 11A between west City Limits and Taylor Drive. This right of way is incorporated into the existing Highway 11A road right of way, which is classified as an arterial and will reduce the developable area in Basin 8.

The Kremp parcel was an acreage bought in it's entirety, however this was more right of way than what was required for the project. The Kremp Remnant was included in the Landsdowne parcel which was adjacent. This was removed from the total area purchased as the 0.24 hectares given to Landsdowne is not arterial road right of way, it is developable land.

Parcel	Area Purchased (ha)	Reference
Kremp	0.70	Kremp IOP
Kremp Remnant	-0.24	Kremp Remnant Calculation
Landsdowne	1.42	Landsdowne IOP
Total	1.88	

The current arterial roadway area for Basin 8 is 10.79 hectares. In the 2022 model update this area was increased to 12.67 hectares.

5.4.3 Basin 10

Two properties were purchased on the south side of Highway 11A between Taylor Drive and Gaetz Avenue. This right of way is incorporated into the existing Highway 11A road right of way, which is classified as an arterial and will reduce the developable area in Basin 10.

Parcel	Area Purchased (ha)	Reference
Ordman	2.09	Ordman IOP
Kingswood	0.39	Kingswood IOP
Total	2.48	

The current arterial roadway area for Basin 10 is 0.06 hectares. In the 2022 model update this area was increased to 2.54 hectares. Right of way plans for each parcel purchased are shown in Appendix A.

5.5 2022 Offsite Levy Rates

Basin	Transportation	Water	Sanitary	Storm	Total
1	$ 67,375	$ 52,952	$ 48,597	$ 65,048	$233,972
2	$ 67,375	$ 52,952	$ 48,597	$ 38,845	$207,769
3	$ 67,375	$ 53,038	$ 83,205	$ 65,048	$268,667
4	$ 67,375	$ 53,038	$ 83,205	$ 18,347	$221,965
5	$ 67,375	$ 53,038	$ 7,500	$ 18,347	$146,261
6	$ 67,375	$ 53,038	$ 4,099	$ 38,845	$163,357
7	$ 67,375	$ 52,952	$ 57,077	$ 38,845	$216,249
8	$ 67,375	$ 52,952	$ 84,804	$ 38,845	$243,976
9	$ 67,375	$ 39,687	$ 5,048	$ 40,368	$152,478
10	$ 67,375	$ 1,197	$ 4,014	$ 2,651	$75,237
11	$ 67,375	$ 33,005	$ 1,858	$ 23,583	$125,821
12	$ 67,375	$ 33,005	$ 31,215	$ 23,583	$155,178
13	$ 67,375	$ 33,005	$ 26,004	$ 109,453	$235,837
14	$ 67,375	$ 33,005	$ 1,858	$ 30,478	$132,716
15					
16	$ 67,375	$ 42,213	$ 4,014	$ 5,363	$118,964
17	$ 67,375	$ 48,379	$ 26,004	$ 109,453	$251,211
18	$ 67,375	$ 48,379	$ 76,563	$ 112,861	$305,178
19	$ 67,375	$ 42,213	$ 76,563	$ 112,861	$299,012

In 2021 the average total off-levy rate was $195,098 per hectare. Rates are up in 2022 with an average total off-site levy rate of $203,076 per hectare. This is attributed to the increase in cost estimate and reduction of developable area. This is still below the 2019 average which was $204,816 per hectare.

6.0 2023 Rate Calculation

6.1 Levies Collected in 2022

Engineering collected offsite levies under two different methods in 2022 related to the Provincial Therapeutic Recovery Centre.

- 50% of the levies were paid by the Province directly through invoice.
- 50% of the levies were paid by the City's operating reserve, to provide monetary support to the project.
- Total development area was 4.05 hectares.

This direction was made by Council resolution on June 15, 2021.

Basin	Transportation	Water	Sanitary	Storm
5	$275,161.04	$218,501.56	$30,480.30	$74,860.20
Total	$275,161.04	$218,501.56	$30,480.30	$74,860.20

Levies collected in 2022 were collected using the 2019 rates. The following table illustrates the difference if they were collected using the updated 2022 rates.

Rate Year	Basin	Transportation	Water	Sanitary	Storm
2019	5	$275,161.04	$218,501.56	$30,480.30	$74,860.20
2022	5	$272,870.65	$214,454.28	$30,376.03	$74,303.72
Difference		$2,290.64	$4,049.02	$105.54	$557.25

This represents a total over collection of $6,445.20 in 2022.

The cumulative over or under collection to date is presented below:

Rate Year	Transportation	Water	Sanitary	Storm
2020	$4,544.63	$1,610.65	$200.02	$950.04
2021	$19,336.34	$9,925.49	$888.20	$7,907.68
2022	$2,290.64	$4,049.02	$105.54	$557.25
Total	**$26,171.61**	**$15,585.16**	**$1,193.76**	**$9,414.97**

6.2 Summary of Project Expenditures in 2022

Transportation

Work was completed on the following Transportation projects in the model:

- Item 7 - 40384 - Northland Dr from Hwy 2 to Taylor Dr - 4 lanes (Design)
- Item 9 - 40389 - Road 6: Taylor Drive / Hwy 11A Intersection Improvements
- Item 11 - 40384 - Northland Dr from Taylor Dr to Gaetz Ave - 4 lanes
- Item 25 - 40413 - Northland Drive (Hwy 11A) Twinning & Intersection Improvements
- Item 26 - 40419 - CP Rail Overpass (Hwy 11A between Taylor Dr & Gaetz Avenue)
- Item 55 – 40421 - Northland Drive Right of Way Acquisition

Water

- Item 8 – 46022 – Water Model Update
- Item 18 -46023 - Hwy 2A Trunk (600/450mm) from Pump Station to Twp Rd 391- East. (Includes East/West leg at the end)

Sanitary

- Item 17 - 47036 - Sanitary Trunk (NE3) - adjacent to Hwy 2A, connecting shared Regional Line to the area (City Snow Site)

Storm

- Item 8 - 48035 - EHN - NW26 - Northland Dr - Pond H5 & 82-81 Trunk
- Item 9 - 48048 - Area 1: Hazlett Lake - Overflow Drainage Route Improvements

Transportation	Water	Sanitary	Storm
$91,892	$614,643	$970,876	$216,265

6.3 Known Cost Escalations in 2022

There were no know cost escalations in 2022, however there were two adjustments made to project cost estimates based on a review of two levy projects, one water and one sanitary.

Water

Item 18 in the water levy was adjusted to reflect an updated project decision. In the 2019 model, this project was originally scoped to run from Highway 11A to Township Road 391 along Highway 2A. The purchase of a regional water line on the west side of Highway 2A several years prior negated the need for most of this project. The remainder of the project was required to provide water to lands east and west of Highway 2A near Township Road 391.

This resulted in a change of total project cost from $4,546,323 in the 2022 model to $790,157 in the 2023 model.

Sanitary

Item 17 in the sanitary levy was also adjusted in 2022. The project was a combination of two projects, one running north/south from Chiles to Township Road 391 and the other along Township Road 391 connect east and west of Highway 2A.

Although combined together in the 2022 model, the projects function separately and with different need years so these projects were split into two projects. Item 17 is completed and updated in the 2023 model, a new project was created to provide for the future project servicing basins to the west side of Highway 1A

6.4 2023 Offsite Levy Rates

Basin	Transportation	Water	Sanitary	Storm	Total
1	$73,060	$60,737	$56,681	$73,147	$263,626
2	$73,060	$60,737	$56,681	$43,697	$234,176
3	$73,060	$31,898	$97,635	$73,147	$275,740
4	$73,060	$31,898	$97,635	$20,604	$223,197
5	$73,060	$31,898	$13,969	$20,604	$139,531
6	$73,060	$31,898	$4,837	$43,697	$153,492
7	$73,060	$60,737	$72,635	$43,697	$250,130
8	$73,060	$60,737	$100,352	$43,697	$277,847
9	$73,060	$45,531	$5,973	$45,411	$169,975
10	$73,060	$1,373	$4,749	$2,983	$82,165
11	$73,060	$37,871	$2,198	$26,531	$139,660
12	$73,060	$37,871	$36,938	$26,531	$174,400
13	$73,060	$37,871	$30,771	$123,135	$264,838
14	$73,060	$37,871	$2,198	$34,288	$147,417
15					
16	$73,060	$ 48,436	$ 4,749	$ 6,033	$132,279
17	$73,060	$ 55,512	$ 30,771	$ 123,135	$282,479
18	$73,060	$ 55,512	$ 90,600	$ 126,969	$346,142
19	$73,060	$ 48,436	$ 90,600	$ 126,969	$339,066

In 2022 the average total off-levy rate was $203,076 per hectare. Rates are up in 2023 with an average total off-site levy rate of $226,984 per hectare. This is attributed to the increase in borrowing costs used in the model rising from 2.79 percent in 2022 to 4.62 percent in 2023.

7.0 2024 Rate Calculation

7.1 Levies Collected in 2023

Engineering collected offsite levies under two Development Agreements in 2023:

- DA2023-001 Timber Ridge Phase 6A (Surface) - 3.2 Hectares
- GH Dawe Expansion

Basin	Transportation	Water	Sanitary	Storm
10	$0	$17,447.40	$61,101.80	$44,744.48
16	$217,071.50	$136,835.46	$13,594.73	$21,000.74
Total	$217,071.50	$154,282.86	$74,696.53	$65,745.22

Levies collected for the GH Dawe Expansion were not collected in a conventional manner. Identified as owing partway through the project, sufficient budget was not available to pay the full amount. What budget was available, was used to pay a portion of the levy. Since we cannot collect levies more than once, it was decided to apply the levy to the Water, Sanitary and Stom levy with the Transportation levy deferred.

The chart below summarizes what should have been collected versus what was collected.

Levies collected in 2023 were collected using the 2019 rates. The following table illustrates the difference if they were collected using the updated 2023 rates.

Rate Year	Basin	Transportation	Water	Sanitary	Storm
2019	16	$217,411.39	$137,048.88	$13,614.60	$21,033.03
2023	16	$233,792.79	$154,996.68	$15,198.05	$19,306.04
Difference		-$16,384.40	-$17,947.80	-$1,583.45	$1,726.99

In 2023, we saw the first instances of under collecting levies in the model updates in Transportation, Water and Sanitary. Storm still represents a slight over collection.

The cumulative over or under collection to date is presented below:

Rate Year	Transportation	Water	Sanitary	Storm
2020	$4,544.63	$1,610.65	$200.02	$950.04
2021	$19,336.34	$9,925.49	$888.20	$7,907.68
2022	$2,290.64	$4,049.02	$105.54	$557.25
2023	-$16,384.40	-$17,947.80	-$1,583.45	$1,726.99
Total	**$9,790.21**	**-$2,362.63**	**-$389.69**	**$11,141.95**

7.2 Summary of Project Expenditures in 2023.

Transportation

Work was completed on the following Transportation projects in the model:

- Item 2 – 40296 – 20 Ave (19 St – 55 St) West Berm/Landscaping & Arterial Trail Construction
- Item 7 - 40384 - Northland Dr from Hwy 2 to Taylor Dr - 4 lanes (Design)
- Item 11 - 40384 - Northland Dr from Taylor Dr to Gaetz Ave - 4 lanes
- Item 26 - 40419 - CP Rail Overpass (Hwy 11A between Taylor Dr & Gaetz Avenue)
- Item 55 – 40421 - Northland Drive Right of Way Acquisition

Water

- Item 8 – 46022 – Water Model Update
- Item 18 -46023 - Hwy 2A Trunk (600/450mm) from Pump Station to Twp Rd 391- East. (Includes East/West leg at the end)

Sanitary

- Item 9 – 47027 – EHC Timberlands Diversion – S ¼ to 67 St
- Item 17 - 47036 - Sanitary Trunk (NE3) - adjacent to Hwy 2A, connecting shared Regional Line to the area (City Snow Site)

Storm

- Item 9 - 48048 - Area 1: Hazlett Lake - Overflow Drainage Route Improvements

Transportation	Water	Sanitary	Storm
$2,117,323	$-1,514	$91,908	$1,324,769

7.3 Cost Estimate Review

As indicated in Section 2.2.1 in the Methodology, cost estimates for all four project types were updated for the 2023 model update.

For each project in the model, estimates were updated using data from recent tender pricing, either through City of Red Deer projects or through other municipalities when information was available. For instance, the City of Calgary has published rates for underground projects.

7.3.1 Transportation Projects

When sufficient information was available for projects in the Transportation Levy, ie quantities were know and provided from previous study, cost estimates were updated by updating unit prices to current year pricing.

When information was not available, transportation estimates were determined by providing a per metre cost estimate based on the roadway classification in the model. For instance, a cost

to construct a one metre stretch of standard arterial roadway was calculated using current year unit prices. This cost per metre was applied to the various project lengths to determine the cost estimate. These estimates were able to translate the per metre cost to actual quantities for each project so they will be easily updatable in the future.

A separate estimate for each transportation project was completed to ensure that future year estimates can be updated with greater ease. Either the quantities for each item can be updated as more detailed information is know, or the unit prices can be adjusted based on new year pricing.

7.3.2 Underground Projects

Projects for sanitary, stormwater and water projects were updated in a similar fashion to transportation projects by using updated unit prices based on recent tendering or other available information. A separate estimate, with quantities, was also completed for each project in order to ensure ease of adjustment for future years.

7.3.3 Project Estimate Totals

To appreciate the impact of updating the estimates, total project costs for 2023 and 2024 are shown below:

Model Year	Transportation	Water	Sanitary	Storm
2023	$715,668,753	$132,452,888	$59,681,468	$125,005,073
2024	$764,024,737	$123,355,999	$73,167,000	$208,290,000
Difference	$48,355,984	-$9,096,889	$13,485,532	$83,284,802

7.4 Project Review

A comprehensive review of projects was completed for the four project types in the model, Transportation, Water, Sanitary and Storm. This included projects that were missing from the levy, new projects that were identified as considered to be eligible under the model and removing projects from the model that were not considered to be eligible in the model.

Projects were also renamed to be more accurately reflective of their location

7.4.1 Transportation Projects

In the 2024 model update, the following changes were made to Transportation projects:

Projects Removed:

Item 6 - 40357 - 2016 Hwy 11A N - Functional Study J40357

This project was not completed as a separate project and was completed in the Highway 11A twinning projects and considered to be redundant.

Item 15 – West QEII Business Park (NW25) Phase 8

Originally included in the 2019 model, upon review of Queens Area Structure plans it was determined that this project did not currently match the road network in Queens and was removed.

Item 17 – 67 Street from Quarter Line to 20 Ave

This item was a duplicate of Item 16.

Projects Changed:

Item 9 – Highway 11A and Taylor Drive Roundabout

In the 2019 model this project contained the intersection improvement and the future interchange in one project assuming that both would happen in the 25 year timeframe. This project was split into the roundabout project as it will be within 25 years, and a new project (See Item 56 in the Projects Added section) for the interchange that will occur outside of 25 years. Cost estimates were split for the two projects.

Item 21 – Northland Drive – Red Deer River Bridge

In the 2019 model this project was combined with the CN Overpass project. These projects were split into two projects in the 2024 model (See Item 58 in the Projects Added section) with the combined costs as well. This This allows for the projects to be staged separately in the model in the future.

Item 53 – 32 Street and 20 Avenue Interchange

In the 2019 model, this project combined the 19th Street and 32nd Street interchanges at 20th Avenue. These projects were split into two projects in the 2024 model (See Item 59 in Projects Added section) with the combined cost split as well. This allows for the projects to be staged separately in the model in the future.

Projects Added:

Item 55 – 40421 – Northland Drive Right of Way Acquisition

This project was contained within the Highway 11A projects in the model and was separated out for tracking purposed. The amount of this item was subsequently reduced from the other Highway 11A projects (Items 7, 9, 11, 25 and 26).

Item 56 – Highway 11A and Taylor Drive Interchange

See Item 9 in the Projects Changed section.

Item 57 – Ross Street from 600 metres east of 20 Avenue to 10 Avenue – 4 lane divided arterial

This project was missing from the 2019 model.

Item 58 – Northland Drive – CN Rail Overpass
See Item 21 in the Projects Change section.

Item 59 – 19 Street and 20 Avenue Interchange

See Item 53 in the Projects Change section.

Item 60 – New Roadway from Twp 391 to 880 metres north – 4 lane divided arterial

This project was missing from the 2019 model

Item 61 – Ross Street from Donley Avenue to 20th Avenue – 4 lane divided arterial

This project was missing from the 2019 model

Item 62 – 67 Street from 400 metres east of 20th Avenue to 10 Avenue – 2 lanes to 4 lanes

This project was missing from the 2019 model

Item 63 – 22 Street and 20 Avenue Roundabout

This is a new project resulting from the analysis completed to revise the intersection configuration at 22nd Street in the Laredo NASP amendment. This analysis determined that the existing flyover and jughandle was not required and a roundabout would provide sufficient capacity to support development to the east.

7.4.2 Water Projects

In the 2024 model update, the following changes were made to Water projects:

Projects Removed:

Item 9 – Queens Business Park (QBP) (SW36) – Water Trunk
This project included a trunk main in the Queens Business Park. Servicing review completed in 2022 has indicated that a trunk size pipe is no longer needed at this location and thus the project was removed.

Area 2: Trunk - Twp Road 391 from Central Pk to RR 274 (800m) (East/West Leg)
This project included a trunk main along TWP Road 391 near the Central Park neighbourhood. Servicing review completed in 2020 has indicated that a trunk size pipe is no longer needed at this location and thus the project was removed.

Hwy 2A Trunk (600/450mm) from Pump Station to Twp Rd 391- East. (Includes East/West leg at the end)
This project included a trunk main along Highway 2A, north of Highway 11A. Servicing review completed in 2020 has indicated that this project is no longer needed at this location and thus the project was removed.

Area 3 (SE4 & SW4): 750/600mm Trunk from Pump Station to tie-in East of Hwy 2. (Includes Booster Pump)

This project was removed due to the updated servicing concept (2020) of the North of 11A lands.

Area 3 (SW25 & NW25): 600/450mm Trunk
This project supports lands outside of the current levy basin areas and thus the project was removed.

Area 3 (SW25 & NW25): 500mm Trunk
This project supports lands outside of the current levy basin areas and thus the project was removed.

Area 10 & Area 12 (SE11 & SW11): 400/500mm Trunks
This project supports lands outside of the current levy basin areas and thus the project was removed.

Area 11 (NE11): 450/500 Trunks
This project supports lands outside of the current levy basin areas and thus the project was removed.

Projects Added:

Item 13 – Trunk Taylor & Hwy11A 200m (400mm)

This project was added due to the updated servicing concept (2020) of the North of 11A lands.

Item 30 – Trunk (SE4) 350m (600mm)

This project was added due to the updated servicing concept (2020) of the North of 11A lands.

Item 31 – SL Trunk (SW21/NE17) 1100m (1200mm)

This project is part of the east hill supply line (servicing a future east hill reservoir). It was broken out of the existing project 20 for more logical staging purposes.

Item 32 – Trunk (S26) 1250m (400mm)

This project was added due to the updated servicing concept (2022) of the east hill lands.

Item 33 – Trunk (SW11) 600m (400mm)

This project was added due to the updated servicing concept (2022) of the North of 11A lands.

Item 34 – Trunk (SW3) 350m (400mm)

This project was added due to the updated servicing concept (2022) of the North of 11A lands.

7.4.3 Sanitary Projects

In the 2024 model update, the following changes were made to Sanitary projects:

Projects Removed:

Area 1: Sanitary Trunk (SE5) (800m)

This project included a trunk main in the future Hazlett East development Area. Servicing review completed in 2022 has indicated that a trunk size pipe is no longer needed at this location and thus the project was removed.

Area 8: Lift Station, Trunk Mains and temporary tie-in to SRD Force Main

This project was removed as it is not part of the ultimate servicing concept for this area.

Area 10: Lift Station, Trunk Mains and temporary tie-in to SRD Force Main

This project was removed as it is not part of the ultimate servicing concept for this area.

Projects Changed:

Area 2: Lift Station & Trunk Mains from Northland Drive North (1600m):

The scope of this project was changed due to the updated servicing concept (2022) of the east of 20th Ave lands. It is now contained within project #19. Cost estimates were updated accordingly.

Item 32 – Trunk NE/NW3 350m (750mm)
This project was previously contained within Item/Project 17 in the model. It has been separated out for more logical staging purposes. Costs were updated accordingly.

Projects Added:

Item 25 – Lift Station (SW11)
This project was added to service levy basins 1, 2, and 3.

Item 28 – Forcemain (NE3 & SE10) (1450mm)
This project was added to service levy basins 1, 2, 3 and 4.

Item 29 – Trunk (S10) 1800m (450mm)
This project was added to service levy basins 1 and 2.

Item 30 – Lift Station (SE2/SW1)
This project was added to service levy basin 4.

Item 31 – Forcemain (S11&N2) 2100m (250mm)
This project was added to service levy basin 4.

7.4.4 Storm Projects

In the 2024 model update, the following changes were made to Stormwater projects:

Projects Removed:

Item 10 – 48027 – QBP NE35 Pond I3

This project included the construction of a storm pond in the Queens Business Park. Storm ponds are no longer included in the levy and thus this project was removed.

Item 11 – 48039 – QBP SE36 Pond I4

This project included the construction of a storm pond in the Queens Business Park. Storm ponds are no longer included in the levy and thus this project was removed.

Item 12 – 48016 QBP – SE36 Trunk 92B-94

This project included the construction of a storm pipe from a pond in the Queens Business Park to a trunk main. This storm pipe only served one subdivision (and 1 developer) and does not meet the City's definition of a levy pipe. It was therefore removed from the levy.

Item 13 – 48047 – EHN - SW26 - Pond H2

This project included the construction of a storm pond in SW26 (Emerson). Storm ponds are no longer included in the levy and thus this project was removed.

Item 15 – 48050 – Area 6 (N13) Storm Ponds Project

This project included the construction of a storm pond in N13 (east of 20th Ave). Storm ponds are no longer included in the levy and thus this project was removed.

Item 17 – Queens Business Park (QBP) (NW25) Trunk (94-95)

This project included the construction of a storm pipe from a pond in the Queens Business Park to a trunk main. This storm pipe only served one subdivision (and 1 developer) and does not meet the City's definition of a levy pipe. It was therefore removed from the levy.

Item 18 – (QBP) (SW36) – Trunk (96-Pond I5)

This project included the construction of a storm pipe from a pond in the Queens Business Park to a trunk main. This storm pipe only served one subdivision (and 1 developer) and does not meet the City's definition of a levy pipe. It was therefore removed from the levy.

Item 19 – East Hill North (EHN) – (NE27) Trunk (79-80)

This project included the construction of a storm pipe from a pond in NE27 (west of 30th Ave) to a trunk main. This storm pipe only served one subdivision (and 1 developer) and does not meet the City's definition of a levy pipe. It was therefore removed from the levy.

Item 23 – Sunnybrook (SE4) – Trunks (46-47)

This project included the construction of a storm pipe from a pond in SE4 (west of 40th Ave) to Piper Creek. This storm pipe only served one subdivision (and 1 developer) and does not meet the City's definition of a levy pipe. It was therefore removed from the levy.

Item 24 – Sunnybrook (NE4) Bower Quarter – Trunks (41-40)

This project included the construction of a storm pipe from a pond in NE4 (west of 40th Ave) to Piper Creek. This storm pipe only served one subdivision (and 1 developer) and does not meet the City's definition of a levy pipe. It was therefore removed from the levy.

Item 25 – Sunnybrook (NE4) Bower Quarter – Trunks (42-43)

This project included the construction of a storm pipe from a pond in NE4 (west of 40th Ave) to Piper Creek. This storm pipe only served one subdivision (and 1 developer) and does not meet the City's definition of a levy pipe. It was therefore removed from the levy.

Area 3 (W25): East/West Trunk Mains (Item 52)

This project included the construction of two storm pipes from ponds in Section 25-38-27. These storm pipes only served one subdivision (and 1 developer) and do not meet the City's definition of a levy pipe. They were therefore removed from the levy.

Area 4 (NW24): 67 Street Trunk Mains (Item 35)

This project included a storm pipe along 67th Street east of 20th Ave. It is no longer required based on the current servicing strategy of the area and has thus been removed from the levy.

Projects Changed:

Item 21 – EHN – (NW26) Northland Dr - Trunks (81-83)

This project included a trunk main along the future Northland Drive between offsite levy basin 12 and 14. It is now contained within stormwater project #30.

Item 16 – 48051 – Area 6 (N13) 20 Ave Trunk Main

This project included a trunk main along the future 20th Ave near Section 13. It is now contained within stormwater project #47.

Item 51 – Trunk (N13) 800m (675/750mm)

This project included 2 portions of trunk main within Section 13-38-27. A portion of the project only benefitted one subdivision (1 developer) and does not meet the City's definition of a levy pipe. It was removed from the levy and the cost was updated accordingly.

Area 2/3: Hazlett Lake Trunk & Outfall at Red Deer River (2400m)

This project included a trunk main from Section 4-39-27 to the Red Deer River. It has now been broken up into two projects (Item #14 & #31) for more logical staging purposes. Costs of each were updated accordingly.

Area 8 (W12): Pond Trunk Mains (Item 42)

This project included 2 portions of trunk main within Section 12-38-27. A portion of the project only benefitted one subdivision (1 developer) and does not meet the City's definition of a levy pipe. It was removed from the levy and the cost was updated accordingly.

Area 12 (SE1): Trunk Mains (Item 45)

This project included a trunk main along 19th Street east of 20th Ave. A portion of the project only benefitted one subdivision (1 developer) and does not meet the City's definition of a levy pipe. It was removed from the levy and the cost was updated accordingly.

Projects Added:

Item 46 – Trunk (E9) 2600m (1200/1500mm)

This trunk project will serve multiple future developments within Basin 1. It will connect future stormwater management facilities to the Blindman River.

Item 48 – Trunk (E10) 1500m (1200/1500mm)

This trunk project will serve multiple future developments within Basin 1 & 3. It will connect future stormwater management facilities to the Blindman River.

Item 50 – Trunk (NW1) 880m (1050/1200mm)

This trunk project will serve multiple future developments within Basin 18 & 19. It will connect future stormwater management facilities to the future trunk in 20th Ave.

A comprehensive list comparing the 2019 projects to the 2024 projects is included in Appendix B.

7.6 Development Area Review

Since the last model update, there have been changes to the developable areas due to resulting from land use planning. following developable areas were modified in the update of the 2024 rate calculation:

7.6.1 Basin 7

In 2024 the City annexed area north of the current basin 7, adding 2.95 hectares to the gross development area of basin 7. In addition, Alberta Transportation recently purchased 1.23 hectares of arterial road right of way to basin 7. The addition of these two items has been included in the 2024 rate update.

7.6.2 Basin 16

Bower Woods NASP

In 2024, the City received application for the Bower Woods NASP. This document provides a better definition of the Environmental Reserve component of this area which may affect the overall developable area in this basin.

In addition, in 2022 Council approved changing the Molly Bannister extension through this area from an arterial roadway to a collector roadway. The area for the arterial road alignment is currently shown as an exemption in the developable area and as such this will increase the total developable area for this basin.

The current developable area in the Bower Woods NASP is 45.07 ha. Through development of the NASP, that area has been refined and is now 46.60 hectares leading to a net change of 1.53 ha. This was understood to be a refinement of the Environmental Reserve area has been reduced by 1.53 hectares in the model

Laredo NASP Amendment

In 2023, Council approved an amendment to the Laredo NASP which returned a small portion of 20th Avenue right of way to the adjacent development. The area of road right of way that was removed from the basin was 1.97 hectares. In the model, the area of arterial road right of way was only shown to be 1.22 hectares. Since there is other arterial road right of way in the basin, and since removing 1.97 hectares would out the arterial road right of way in the negative the 1.97 hectares was added to the gross development area. A reconciliation of road right of way for this basin will need to occur in future model updates.

Overall, the net developable area for Basin 16 has increased by 3.5 hectares.

7.6.3 New Basin for Annexation Area – Basin 20

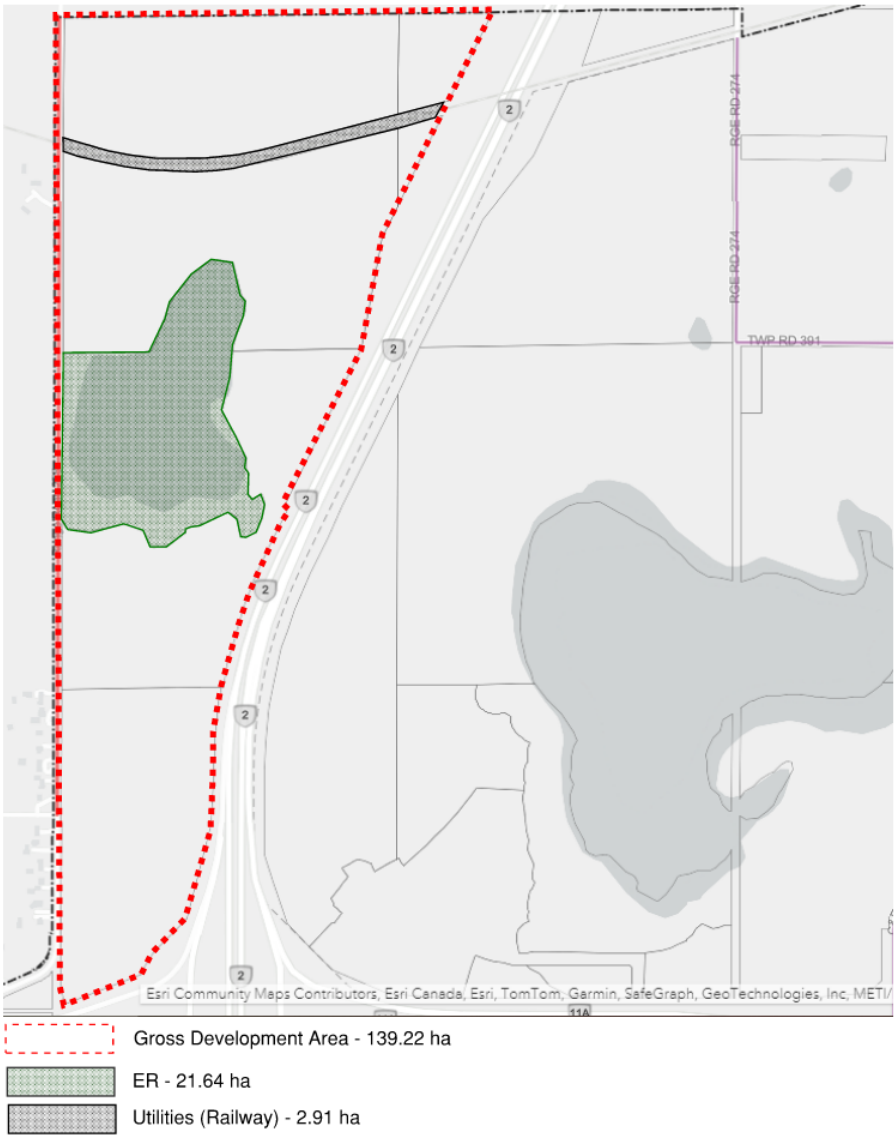
In 2024, the City of Red Deer annexed the following area into the City of Red Deer. The developable area is 114.67 hectares.

This is based on the following calculation:

Gross Plan Area – 139.22 hectares
Environmental Reserve – 21.64 hectares
Railway and Pipeline – 2.91 hectares

These areas are shown in the following figure:

Basin 20



7.6.4 Net Development Area Review

The Corvus model does not allow for the reduction for railways and pipeline exclusions found in the bylaw. As such, these items are included in the municipal reserve column of the model. When the model was developed in 2019, it was assumed that these undeveloped areas made up approximately 10% of a quarter section. The 2019 model calculates this area to be 10% of the gross area minus the environmental reserve. The total number of hectares determined to be excluded was slightly over 1000 hectares.

When reviewing the actual exclusion areas for Basin 20, we determined that the percentage of pipeline and railway exclusions was only 2.5%. This lead to a review of the excluded areas throughout the City.

In total, 16 area structure plans were reviewed to determine areas that were considered undevelopable due to pipeline or railway right of way. In general, while many pipeline rights of way exist many of them are either able to be relocated or incorporated into MR. Of the 16 plans reviewed, only 5 plans had utilities that were not considered developable which totalled 1.68% of the gross area less ER.

To further refine the net developable area calculation, individual basins were reviewed to determine if the percentage reduction could be excluded. Basin 10 and Basin 16 are predominantly built out, however in the 2019 model they are estimated to have over 621 hectares of land excluded from the net development area calculation. We have considered that both of these basins would have no further exclusions and consider the areas in both basins to be zero.

In Basin 9, we have area structure plans for the remainder of Queens Business Park and are able to calculate a percentage area of exclusion specifically for that Basin and calculate the excluded area. The rest of the basins used the City average of 1.68% excluded area to calculate the excluded areas for those basins.

The input to the Corvus model in this field is by percentage and individual fields are not overwritten. After removing the exclusions for Basins 10 and 16 and using the basin specific exclusion for Basin 9, the overall percentage of excluded area is 0.54%. This calculation is included in Appendix C. To be conservative, 1% was used in the model. This significantly reduced the exclusion areas, going from over 1000 hectares in the 2019 model to just over 100 hectares in the 2024 model. The result, is an increase in net development area from approximately 2,500 hectares to approximately 3,500 hectares..

7.7 Development Staging Review

A critical component of the model is the development staging. This identifies the amount of land to be developed in the 25 year time frame and forms the denominator in the rate calculation. The 2019 model is based on all lands in the City being developed in the 25 year time frame.

The implication to the rate calculation is significant. The 2019 model (based on 2,500 hectares) projects an average of 100 hectares per year of development over the next 25 years. Red Deer's average development over the last 10 years is only 10 hectares per year. The areas developed since 2019, based on levies collected in development agreements are even lower:

Year	Area Developed
2020	3.64 hectares
2021	6.37 hectares
2022	0 hectares
2023	3.20 hectares
2024	4.24 hectares

These values are based on residential developments collected through development agreements.

Recent work done by Colliers suggests that the City's expected time frame to reach the 188,000 population has been pushed out to 2067. The infrastructure projects in the model are based on full build out by the 188,000 population. This indicated that adjustments would need to be made in the model to represent some development within 25 years and some development outside of 25 years. This means a lower developable area in the model.

In conjunction with a lower land consumption volume the timing of development also needed to change to reflect current growth rates. The timing of infrastructure projects are all related to when the first development will occur. In our first draft of reviewing development staging, we reduce the amount of hectares by reducing the growth rate and subsequently the amount.

For example, in the 2019 development staging in Basin 1 starts in 2034 with the completion of 4.78 hectares and is fully developed in 2042 with a total of 91.43 hectares completed. Reducing the rate of growth, and subsequently the amount of hectares developed significantly lowers the total area developed. In the same Basin, applying a 0.61% growth rate reduces the number of hectares starting in 2034 to 0.02 and the total to 0.47. While the lower total hectares developed in Basin 1 may be more aligned with reality (the number should actually be lower), because the start date didn't change all of the infrastructure requirements remain aligned with the first development date in the model.

The problem with this process arises in that cost of infrastructure required does not change but the developable area across which this costs are significantly reduced. Using Transportation as an example, the total transportation costs to develop Basin 1 are $73,740,000. Using the 2019 developable area the rate before adjustment is approximately $806,000 per hectare. Using the developable area with the reduced growth rate, rate before adjustment is approximately $157,000,000. (Note this is not the actual rate calculation as costs are distributed across multiple basins, it is meant to illustrate the order of magnitude issue with reduced growth rate methodology.)

In order to attempt to accurately predict the start time of infrastructure projects, a review of development areas was completed. This was done in two phases; phase 1 was a review of development areas that were able to be completed in the next 10 years with minimal to no off-site infrastructure requirements. Phase 2 was a review of a reasonable expectation of areas to be developed in the next 11 to 25 years.

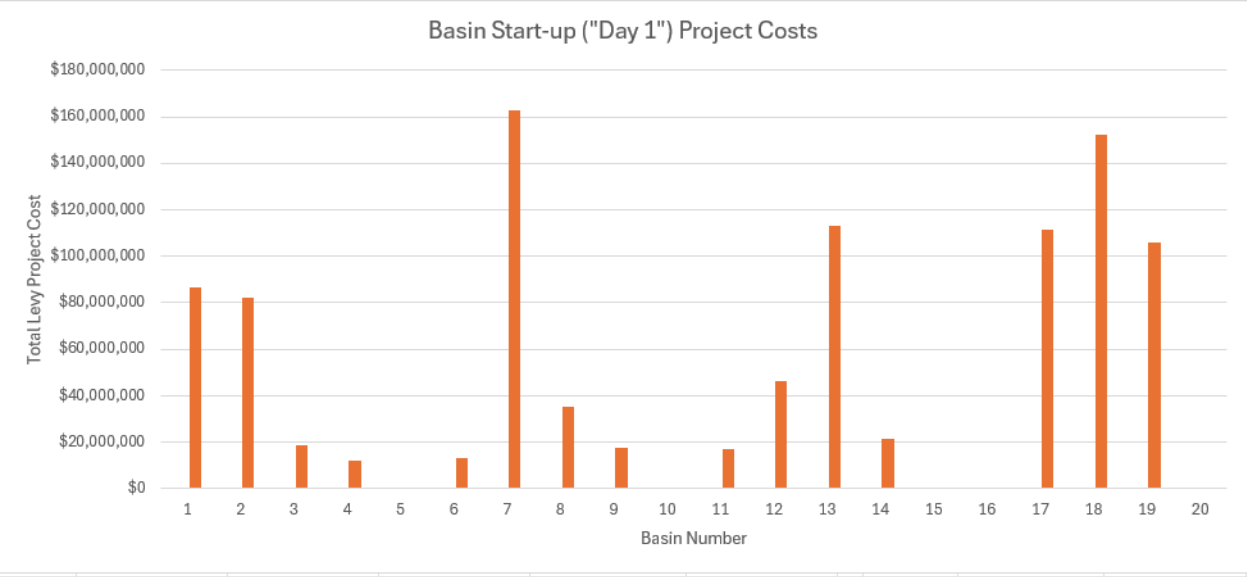
Phase 1 – 0 to 10 Year Development Areas

A key component of this review took the City's current financial position into consideration, particularly related to borrowing capacity. In general, off-site levy projects are fairly large capital investments funded through borrowing. City staff reviewed current development trends and current development areas that looked reasonably developable within a 10 year time frame and determined approximately 210 hectares of developable area. This is represented in the following map, which was presented at the December 12, 2024 workshop.

Phase 2 – 11 to 25 Year Development Areas

In order to get an accurate picture of the amount of development to include in the 25 year model, the next 11 to 25 years of anticipated growth needs to be defined. If not, the remaining developed area left after the 0 – 10 year scenario is simply proportioned in the remaining 15 years. This will leave the same issue with predicting cash flow and recovery, as the timing of development will be overstated.

In order to assist in the determination of the next areas that could be developed, the City provided a total cost to develop each basin individually. While not exact, this exercise will show the order of magnitude comparison for each basin and will illustrate the next areas of id with the lowest off-site costs. This information was presented to developers by email in mid-January 2025. Two costs were provided; costs to fully develop the basin and costs to start up a basin. The Basin start up or "Day 1" project costs are illustrated in the following graph:



Basins were then reviewed for their developability based on a number of factors:

- Basin 1, 2, 7, 13, 17, 18 & 19 all have high costs to develop,
- Basins 3 and 4 have relatively low off-site levy costs, however are not contiguous with existing developed areas in the City and are anticipated to have high on-site costs to develop,
- Basin 11 has little area to develop and is not contiguous,
- Basin 12, 13, 17, 18, 19 both have high off-site levy costs and are not contiguous.

For the remaining 11 to 25 year development period, development areas were determined based on timing information received from developers and the logical progression of development. This identified approximately 440 hectares of additional developable area for a total of 650 hectares to be developed in the next 25 years. This equates to 26 hectares per year over the next 25 years. Development is concentrated in Basin 5, 8, 9, 10, 14 and 16.

7.7 Project Staging Review

The final step in the 2024 rate review was to adjust project staging based on the new areas and revised growth rates. Staging was reviewed for each project and compared with the revised land consumption rates per basin. While we did adjust the consumption of land in each basin, we did not adjust timing of development in the basin, for instance when growth would start. For this reason, the effect on project timing was reduced. Projects required to support the start up of growth in a basin still need to occur on the same timeline, the additional projects that come after are what get delayed because of the slower consumption rate.

After revising the growth percentages, projects were reviewed and construction start years were reviewed to adjust project timing. Projects were validated to ensure that the sequencing made sense and then all four project types were compared to make sure the timing made sense, for instance road projects occurred after underground projects and not before.

This was done as a first draft, and presented at the December 12, 2024 meeting with developers. After this meeting and subsequent feedback regarding the fully developable area within 25 years, infrastructure projects were restaged so that only projects supporting these areas were included in the 25 year time frame.

From the feedback the model was adjusted to only include growth areas that could reasonably completed in the next 25 years and projects required to support that growth were staged accordingly. This resulted in only 11 projects serving 650 hectares in only 7 basins. These rates were presented to developers on February 11, 2025.

For basins with developer areas, rates were relatively accurate with most rates dropping to reflect the lack of infrastructure required to be ready for development. The challenge with this strategy was for basins that did not have developable area the model was not showing accurate results to represent a levy rate easily understood. For example, the 2019 rate in Basin 19 was $302,644 per hectare. In this scenario the rate dropped to $38,655 per hectare because there were no projects in the 25 year period. Publishing this rate would have been misleading for someone developing Basin 19. A new rate would need to be calculated adding all of the projects required to develop this basin and the rate would increase significantly.

Based on feedback from developers a balanced approach was developed were more development area would be considered in the model with more scrutiny placed on the projects required to support that development. A tool not used in the 2019 model, or the initial scenario developed and presented on December 12, 2024 would be used to ensure that projects not benefitting development areas in the 25 year period would be excluded from the rate calculation.

This method provides more realistic rates in future areas of growth by including more area in the model, while providing more accurate cost estimates for projects that benefit these areas help to minimize fluctuations in the rate. This provides more stability over the long term and as a result more certainty in the rates. Each scenario is described below.

7.7.1 Transportation Staging – First Draft

In the 2019 model the full build out horizon was assumed to occur within the 25 year build out in the model and as such most projects were included in the model, with the exception of interchanges at major intersections. The full build out horizon was anticipated to occur at the 188,000 population horizon.

were few cases where road network did not exist to facilitate the earlier stage of development. This is referred to as the growth construction year.

The capital plan construction year was then compared to the growth construction year with the latest year used as the new construction start year in the model.

Before finalizing the new construction start year each project was reviewed in sequence to ensure a logical progression of projects. Where a logical progression did not make sense, judgement was used in determining the revised construction start year.

The levy rate calculations are impacted by the value of projects in the 25 year period. The simplest way to illustrate the impact of staging adjustments is to show the value of projects within this time frame by model year. Transportation staging impacts are illustrated below:

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$425,382,067	$290,286,686	59%
2024	$368,576,037	$395,448,700	48%

While the overall project costs in Transportation have increased by $48,355,984 from 2023 to 2024, the total project costs within the 25 year timeframe affecting the rate have decreased by $56,806,030 resulting in a decrease of $8,450,046 in the total project cost used in the levy calculation.

7.7.2 Transportation Staging – Second Draft

Reducing the development area has had the following impact on Transportation projects in the 25 year period.

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$425,382,067	$290,286,686	59%
2024 (1st)	$368,576,037	$395,448,700	48%
2024 – (2nd)	$62,566,305	$701,815,949	8%

7.7.3 Transportation Staging – Final

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$425,382,067	$290,286,686	59%
2024 (1st)	$368,576,037	$395,448,700	48%
2024 – (2nd)	$62,566,305	$701,815,949	8%
2024 – Final	$229,220,232	$534,804,505	30%

7.7.4 Water Staging – First Draft

Water projects were reviewed in the same manner as Transportation projects and then reviewed with Transportation projects to ensure that sequencing did not overlap. For instance, underground projects typically occur before Transportation projects so any projects that occurred in the reverse were adjusted accordingly. A summary of water project staging impacts is shown below:

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$132,452,888	$0	0%
2024	$123,355,999	$0	0%

Water staging adjustments did not identify any projects outside of the 25 year period, the reduced total project cost shown in section 7.3 is a reflection of updated and refined cost estimates.

7.7.5 Water Staging – Second Draft

Reducing the development area has had the following impact on Water projects in the 25 year period.

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$132,452,888	$0	0%
2024 (1st)	$123,355,999	$0	0%
2024 – (2nd)	$4,447,000	$118,908,999	4%

7.7.6 Water Staging – Final

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$132,452,888	$0	0%
2024 (1st)	$123,355,999	$0	0%
2024 – (2nd)	$4,447,000	$118,908,999	4%
2024 – Final	$123,355,888	$0	0%

7.7.7 Sanitary Staging – First Draft

Sanitary projects were reviewed in the same manner as Water and Transportation projects and then reviewed ensure that sequencing did not overlap. A summary of sanitary project staging impacts is shown below:

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$59,681,468	$0	0%
2024	$49,901,000	$23,275,000	68%

While the overall project costs in Sanitary have increased by $13,485,532 from 2023 to 2024, the total project costs within the 25 year timeframe affecting the rate have decreased by $8,780,468 resulting in reducing the increase to $4,705,064 in the total project cost used in the levy calculation.

7.7.8 Sanitary Staging – Second Draft

Reducing the development area has had the following impact on Sanitary projects in the 25 year period.

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$59,681,468	$0	0%
2024 (1st)	$49,901,000	$23,275,000	68%
2024 – (2nd)	$7,338,000	$65,838,000	10%

7.7.9 Sanitary Staging – Final

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$59,681,468	$0	0%
2024 (1st)	$49,901,000	$23,275,000	68%
2024 – (2nd)	$7,338,000	$65,838,000	10%
2024 - Final	$73,176,000	$0	0%

7.7.10 Storm Staging – First Draft

Storm projects were reviewed in the same manner as the other projects. A summary of sanitary project staging impacts is shown below:

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$125,005,073	$0	0%
2024	$168,057,000	$40,233,000	81%

Storm projects saw the most significant increase in cost estimate totals from 2023 to 2024 with an increase of $83,284,802. The impact of staging storm projects also had the most impact, moving $40,233,000 worth of projects the impact of project costs including in the levy by almost half to a reduce increase of $43,051,802.

7.7.11 Storm Staging – Second Draft

Reducing the development area has had the following impact on Sanitary projects in the 25 year period.

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$125,005,073	$0	0%
2024 (1st)	$168,057,000	$40,233,000	81%
2024 – (2nd)	$6,128,000	$202,162,000	3%

7.7.12 Storm Staging – Final

Model Year	Total Project Cost in 25 Years	Total Project Cost Outside 25 Years	Percentage in 25 Years
2023	$125,005,073	$0	0%
2024 (1st)	$168,057,000	$40,233,000	81%
2024 – (2nd)	$6,128,000	$202,162,000	3%
2024 - final	$200,067,000	$0	0%

For all four infrastructure projects, total project costs have fluctuated from the different scenarios because further review has in some cases (ie Storm) removed additional projects from the model.

7.8 2024 Offsite Levy Rates

Basin	Transportation	Water	Sanitary	Storm	Total
1	$19,068	$93,049	$103,917	$281,830	$497,863
2	$19,068	$93,049	$103,917	$107,970	$324,003
3	$19,068	$22,983	$64,851	$79,109	$186,012
4	$19,068	$22,983	$144,675	$363	$187,090
5	$19,068	$22,983	$14,994	$6,204	$63,249
6	$19,068	$22,983	$3,996	$26,972	$73,020
7	$19,068	$93,049	$47,788	$90,232	$250,137
8	$19,068	$93,049	$96,485	$48,657	$257,259
9	$19,068	$29,773	$3,398	$51,297	$103,537
10	$19,068	$1,115	$2,385	$1,047	$23,615
11	$19,068	$43,450	$1,554	$1,813	$65,885
12	$19,068	$43,450	$20,439	$1,813	$84,771
13	$19,068	$43,450	$10,707	$44,793	$118,018
14	$19,068	$43,450	$1,554	$14,430	$78,501
15					
16	$19,068	$32,541	$2,385	$344	$54,339
17	$19,068	$50,204	$25,780	$231,263	$326,316
18	$19,068	$50,204	$110,191	$175,956	$355,421
19	$19,068	$32,541	$110,191	$140,849	$302,650
20	$19,068	$28,258	$0	$0	

The changes to the 2024 rates are the result of two main factors, one is the increased developable area and the second is removing the cost of projects staged outside of the 25 year return period.

In 2023 the average total off-levy rate was $226,984 per hectare. Rates are down in 2024 with an average total off-site levy rate of $168,422 per hectare.

Developable area calculations are shown in Appendix C of this report. Developer Cost differences are shown below:

	Developer Cost	
	2019	2024
Transpotration	$ 252,708,413	$ 91,451,127
Water	$ 96,538,881	$ 123,508,769
Sanitary	$ 64,943,911	$ 80,318,047
Storm	$ 124,479,600	$ 204,482,350
Total	$ 538,670,805	$ 499,760,294

8.0 2025 Rate Calculation

8.1 Levies Collected in 2024

Engineering collected offsite levies under two Development Agreements in 2024:

- DA2024-001 20 Trinity Close – 0.62 hectares
- DA2024-002 Evergreen Phase 3 (Surface) – 4.24 hectares

Basin	Transportation	Water	Sanitary	Storm
14	$288,069.84	$142,162.96	$8,123.84	$129,625.28
16	$42,122.42	$26,553.36	$2,638.10	$4,075.26
Total	$330,192.26	$168,716.32	$10,761.94	$133,700.54

Because of the significant difference of the inputs for the 2024 rates, an illustration of the comparison of the 2024 rate versus the 2019 rate will not be included in the report moving forward. Moving to annual rate reviews will provide comparisons between model rate years in future. Previous comparisons were done to illustrate the impact of not updating the model on the rate.

8.2 Summary of Project Expenditures in 2024

Transportation

Work was completed on the following Transportation projects in the model:

- Item 7 - 40384- Highway 11A from QEII to Taylor Drive - 2 lanes to 4 lanes
- Item 11 - 40384 - Highway 11A from Taylor Drive to Gaetz Avenue - 2 lanes to 4 lanes
- Item 55 – 40421 - Northland Drive Right of Way Acquisition

Water

There were no expenditures in this category in 2024.

Sanitary

- Item 17 - 47036 - Sanitary Trunk (NE3) - adjacent to Hwy 2A, connecting shared Regional Line to the area (City Snow Site)

Storm

- Item 9 - 48048 - Hazlett Drainage Improvement

Transportation	Water	Sanitary	Storm
$477,756	$0	$12,221	$332,227

8.3 Known Cost Escalations in 2024

There were no known costs escalations in 2024.

8.4 Project Staging Adjustments

In the 2025 model year, the new 25 year period ends in 2049. There were two projects in Transportation where oversizing was removed and projects are now considered in the rate calculation. It was determined that these projects will be required to service the current growth area:

- Item 10 – 40383 - 32 Street from Daines Avenue to 20 Avenue - 4 lane divided arterial
- Item 30 – 20 Avenue from 32 St to 19 St - 2 lanes

These projects will provide access development areas in Basin 18 and Basin 19.

There were an additional five Transportation projects that were also staged in 2049. It was determined they were not required to service the current growth area so the start years were adjusted to 2050:

- Item 5 40354 - 80th Avenue - Phase 2 - 77 Street to 800 metres south of 77 Street
- Item 8 - 40388 - Ross Street from 20 Avenue to 600 metres east of 20 Avenue - 4 lane divided arterial
- Item 35 - Taylor Drive from Township Road 391 to 800 metres north - 4 lane undivided arterial
- Item 39 - 30 Avenue from Northland Drive to Township Road 390 - 2 lanes
- Item 60 - New Roadway from Twp Rd 391 to 880 metres north - 4 lane undivided arterial

8.5 Development Area Adjustments

There were no development area adjustments in 2024.

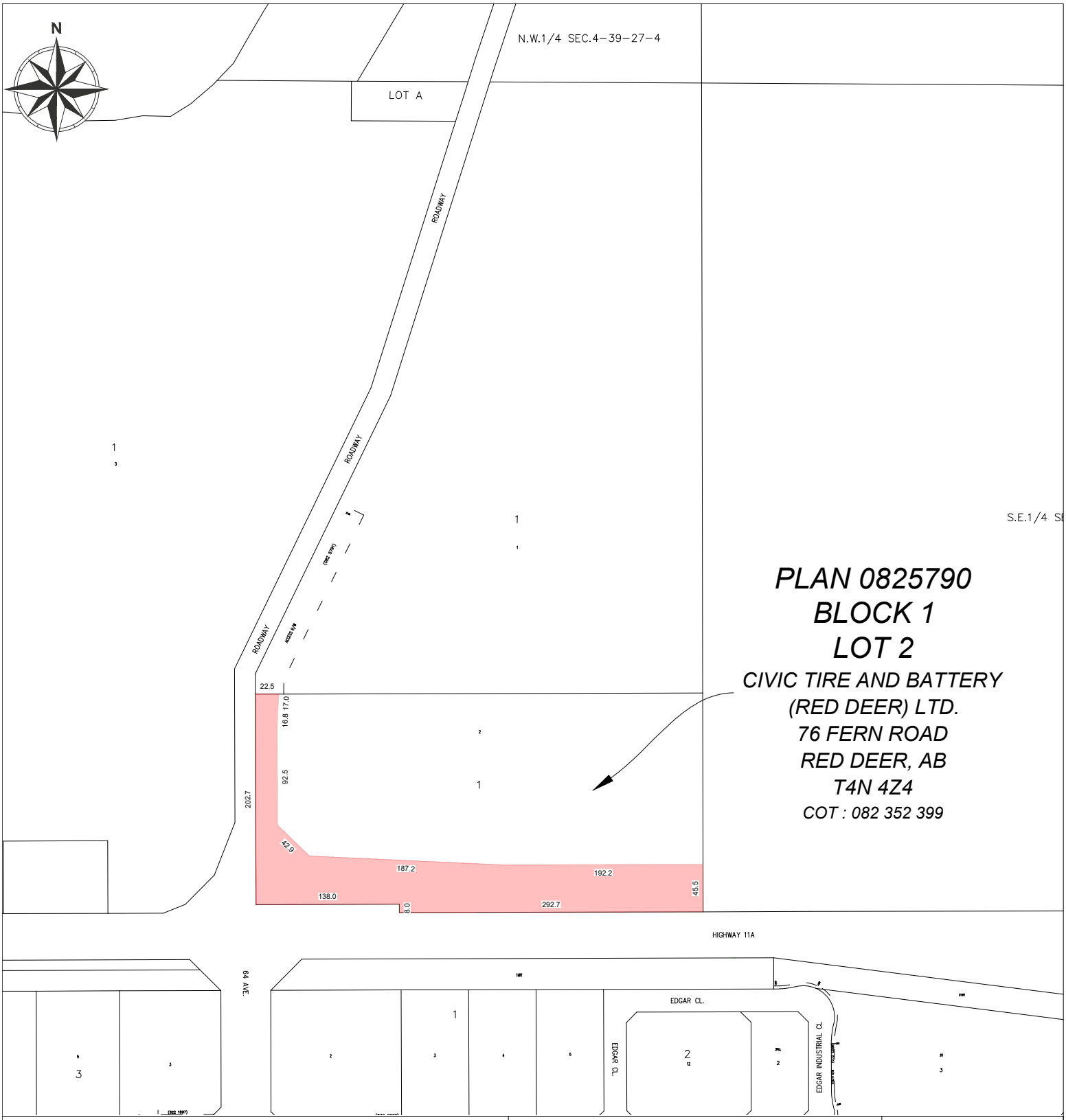
8.6 2025 Offsite Levy Rates

Basin	Transportation	Water	Sanitary	Storm	Total
1	$21,392	$89,850	$96,977	$272,362	$480,580
2	$21,392	$89,850	$96,977	$104,342	$312,561
3	$21,392	$22,193	$60,531	$76,451	$180,567
4	$21,392	$22,193	135,002	$350	$178,937
5	$21,392	$22,193	$14,017	$5,995	$63,597
6	$21,392	$22,193	$3,727	$26,066	$73,379
7	$21,392	$89,850	$44,612	$87,200	$243,054
8	$21,392	$89,850	$91,027	$47,022	$249,290
9	$21,392	$28,750	$3,167	$49,573	$102,882
10	$21,392	$1,076	$2,222	$999	$25,690
11	$21,392	$41,959	$1,446	$1,743	$66,540
12	$21,392	$41,959	$19,066	$1,743	$84,160
13	$21,392	$41,959	$9,986	$43,279	$116,616
14	$21,392	$41,959	$1,446	$13,704	$78,501
15					
16	$21,392	$31,421	$2,222	$332	$55,367
17	$21,392	$48,477	$24,048	$223,485	$317,403
18	$21,392	$48,477	102,799	$170,045	$342,713
19	$21,392	$31,421	$102,799	$136,117	$291,729
20	$21,392	$27,287	$0	$0	$48,679

In 2024 the average total off-site levy rate was $168,422 per hectare. In 2025 the average total off-site levy rates is $164,605 per hectare. Of note, all the rates have been reduced because of receipts collected and project expenditures reducing the developer share costs. While the overall rates are reduced, the Transportation rate has increased slightly from 2025 because several projects were added to the 25 year period.

	Developer Cost	
	2024	2025
Transportation	$ 91,451,127	$ 98,478,237
Water	$ 123,508,769	$ 123,340,053
Sanitary	$ 80,318,047	$ 80,399,189
Storm	$ 204,482,350	$ 204,348,649
Total	$ 499,760,294	$ 506,566,128

Appendix A – IOP Drawings



TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 2.36 ha (5.83 acres)

PLAN 825790 BLOCK 1 LOT 2
HIGHWAY 11A/NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE	1:5000 SCALE
2500-C-IOP-PLAN 825790 BLK 1 LOT 2	JULY 2020	50m 0 50 100m

TITLE SEARCH COMPLETED : JULY 2020

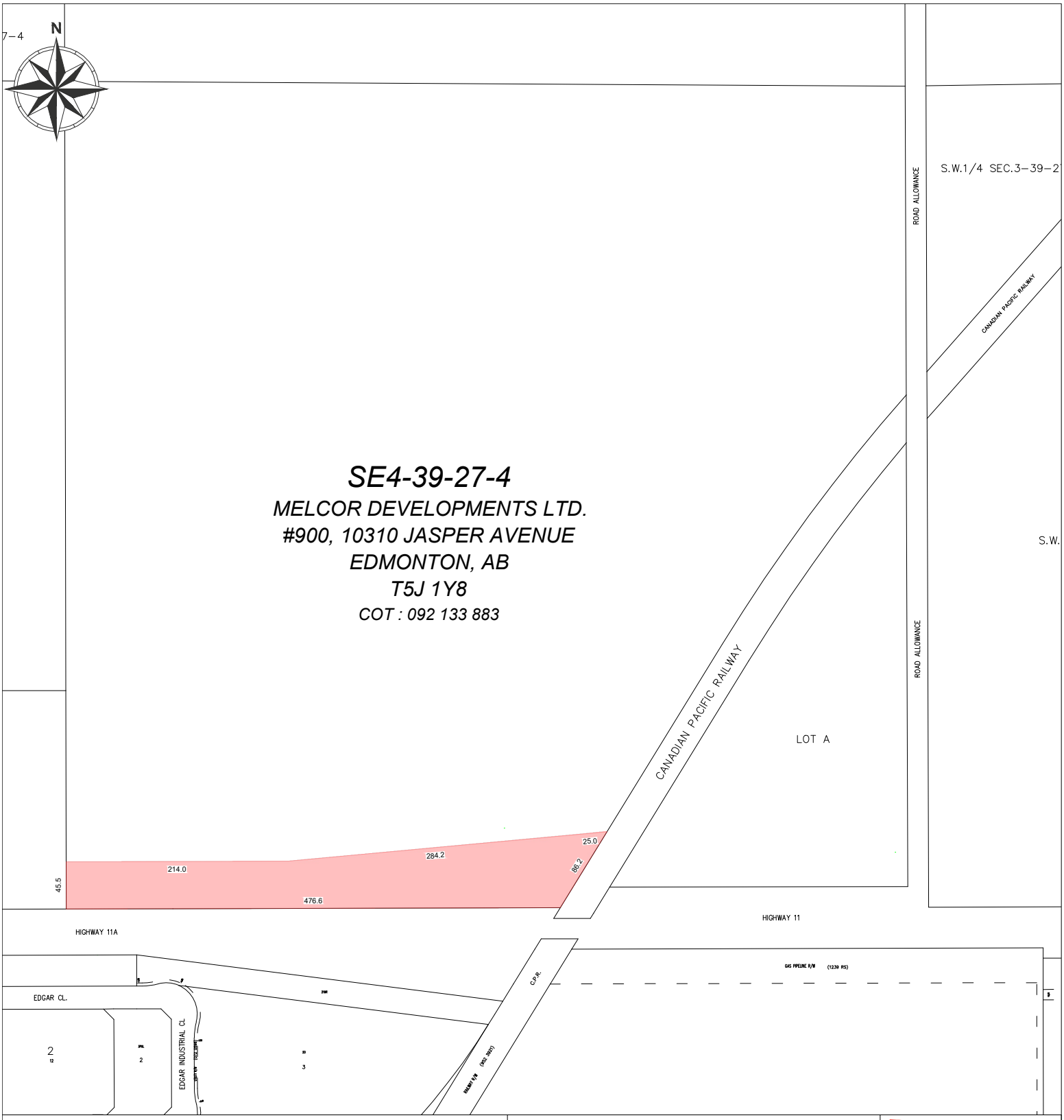
RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 2.36 ha (5.83 acres)

PLAN 825790 BLOCK 1 LOT 2
HIGHWAY 11A/NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE	1:5000 SCALE
2500-C-IOP-PLAN 825790 BLOCK 1 LOT 2 -AIR	JULY 2020	50m 0 50 100m



TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 2.64 ha (6.52 acres)

SE4-39-27-4
HIGHWAY 11A/NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE
2500-C-IOP-SE4-39-27-4	JULY 2020

1:5000 SCALE
50m 0 50 100m

TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 2.64 ha (6.52 acres)

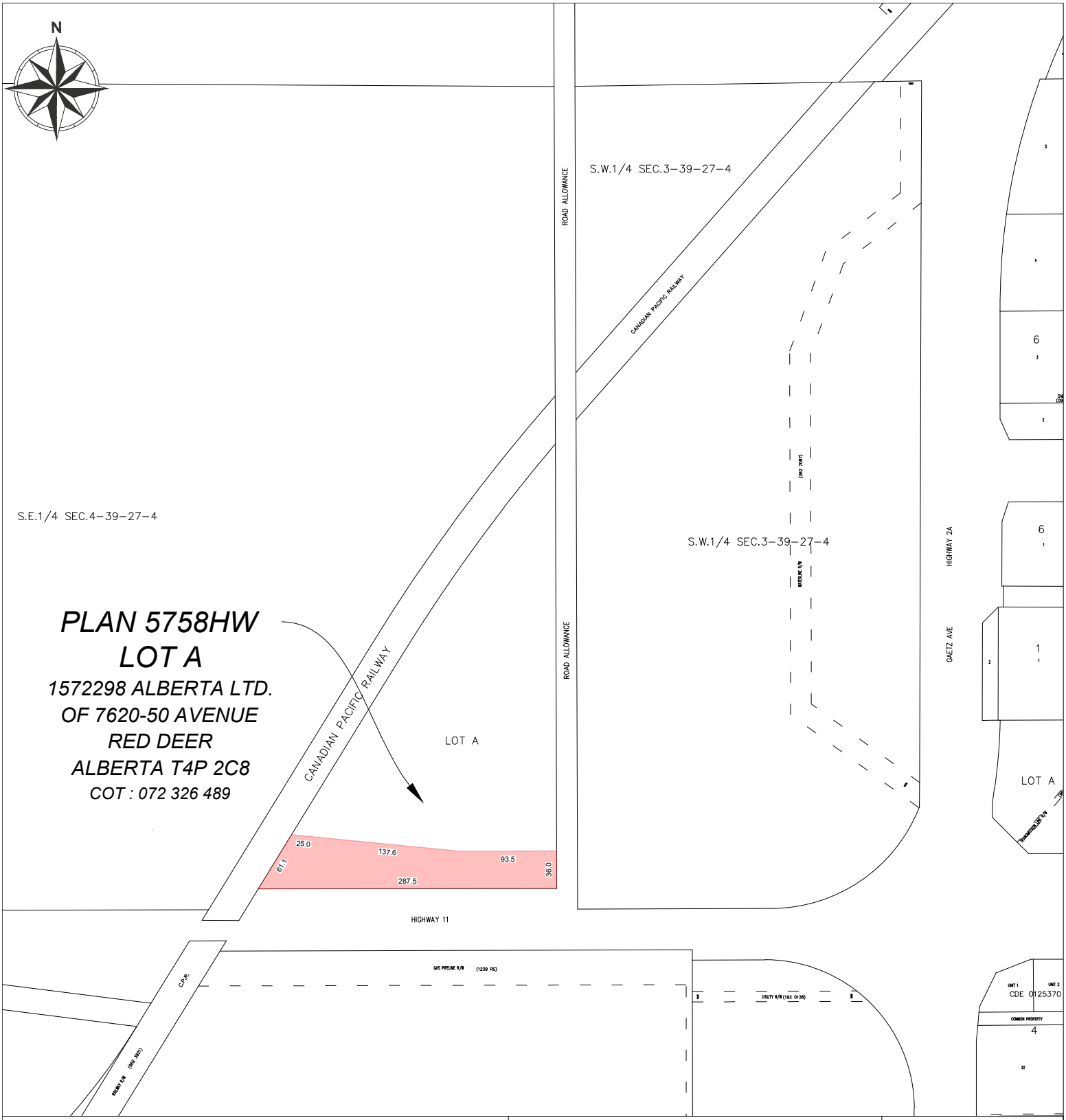
SE4-39-27-4
HIGHWAY 11A/NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE
2500-C-IOP-SE4-39-27-4 (AIR)	JULY 2020

1:5000 SCALE
50m 0 50 100m



TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 1.14 ha (2.82 acres)

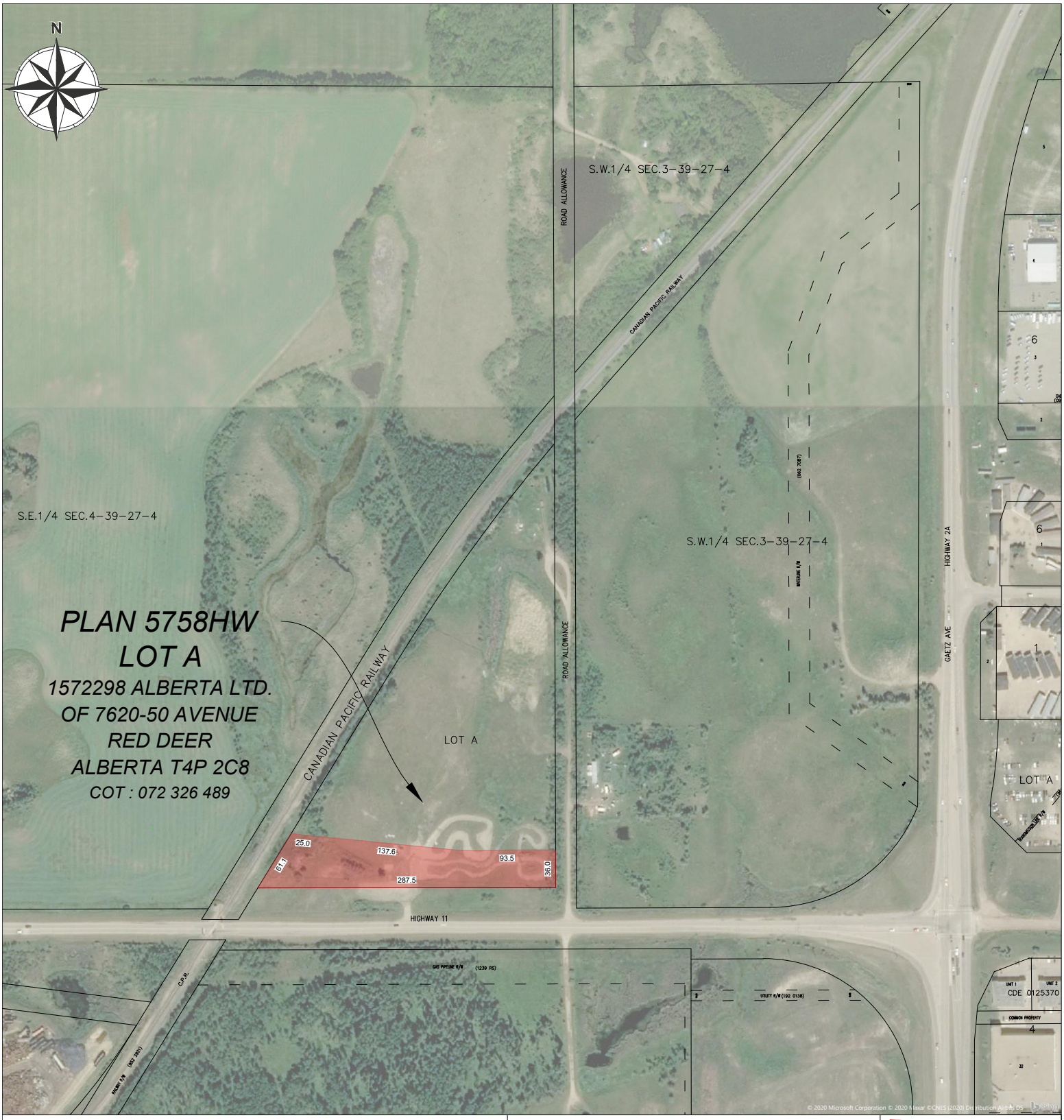
PLAN 5758HW LOT A
HIGHWAY 11A/NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE
2500-C-IOP-PLAN 5758HW	JULY 2020

1:5000 SCALE
50m 0 50 100m



TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 1.14 ha (2.82 acres)

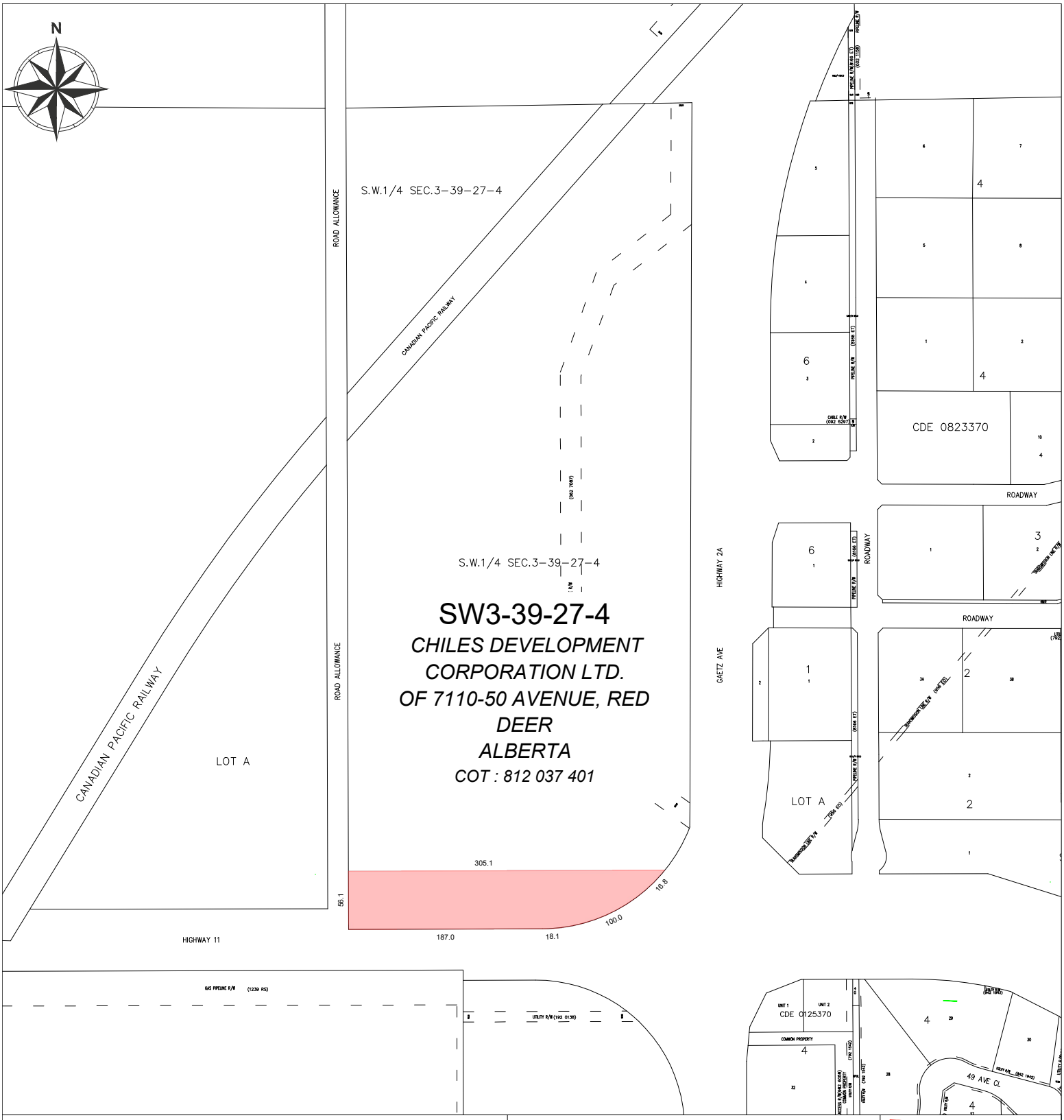
PLAN 5758HW LOT A
HIGHWAY 11A/NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE
2500-C-IOP-PLAN_5758HW_(AIR)	JULY 2020

1:5000 SCALE
50m 0 50 100m



TITLE SEARCH COMPLETED : JULY 2020

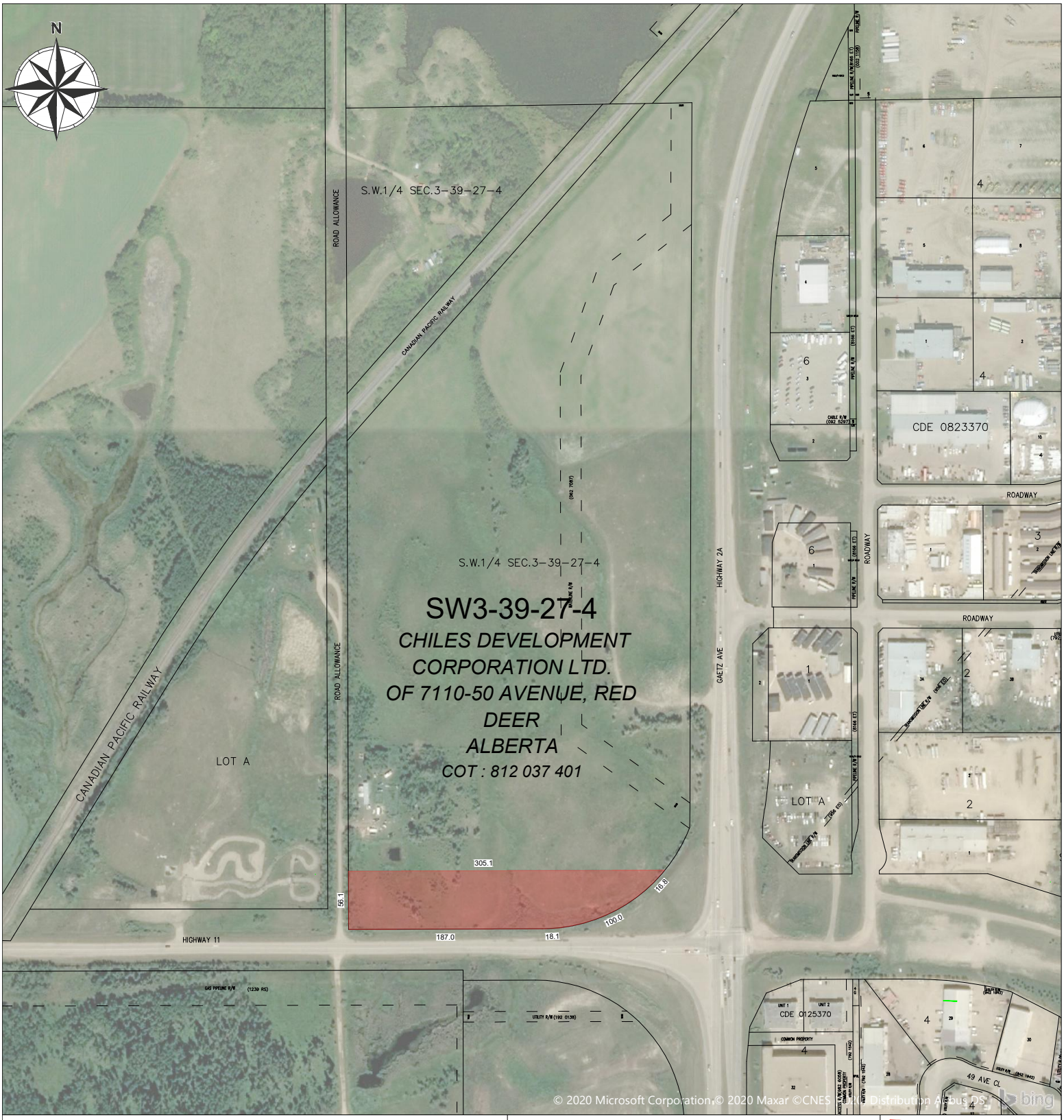
RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 1.50 ha (3.71 acres)

SW3-39-27-4
HIGHWAY 11A / NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE	1:5000 SCALE
2500-C-IOP-SW3-39-27-4	JULY 2020	50m 0 50 100m



TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 1.50 ha (3.71 acres)

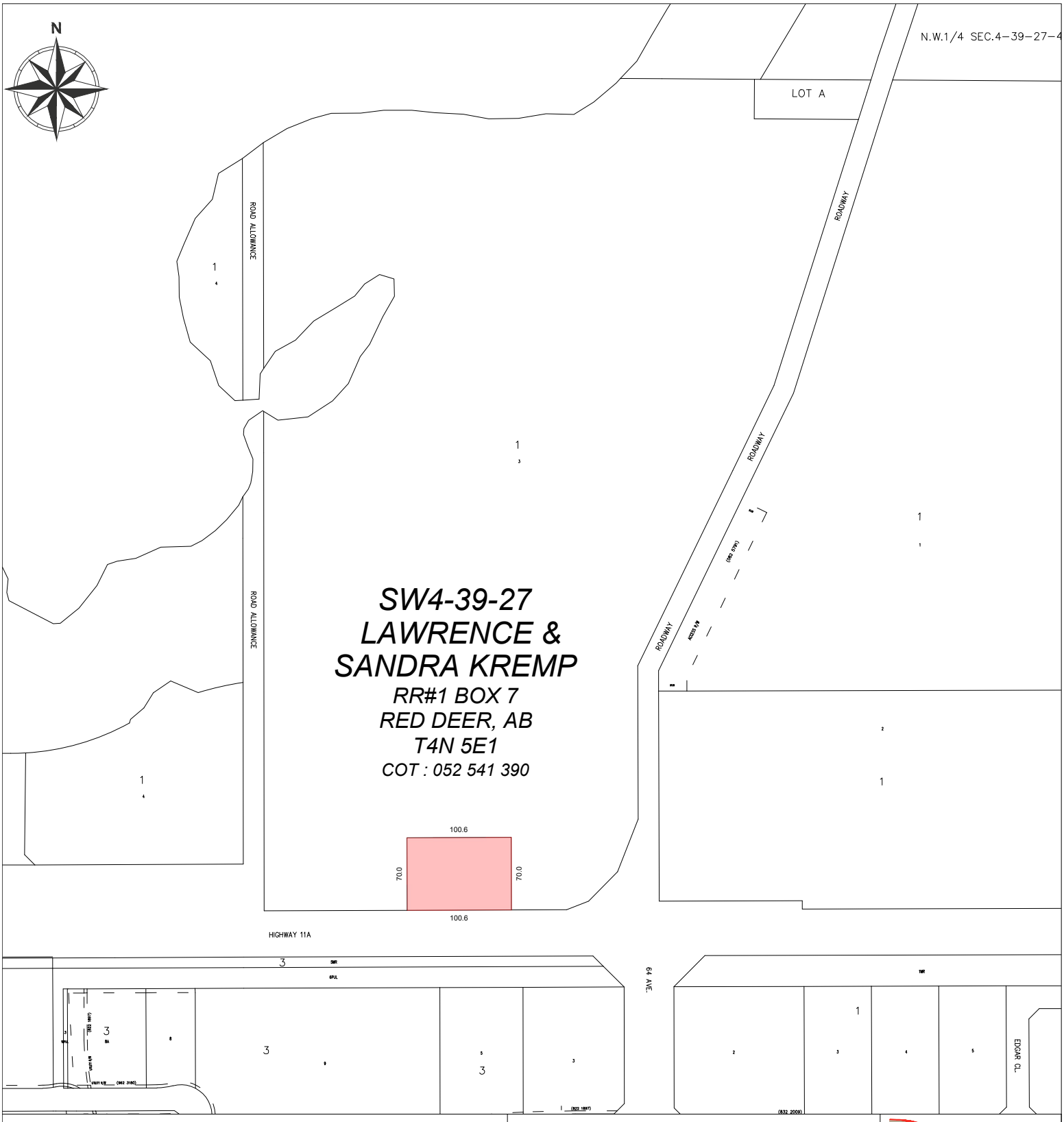
SW3-39-27-4
HIGHWAY 11A / NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE	1:5000 SCALE
2500-C-IOP-SW3-39-27-4 (AIR)	JULY 2020	50m 0 50 100m

Figure 5



TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 0.70 ha (1.73 acres)

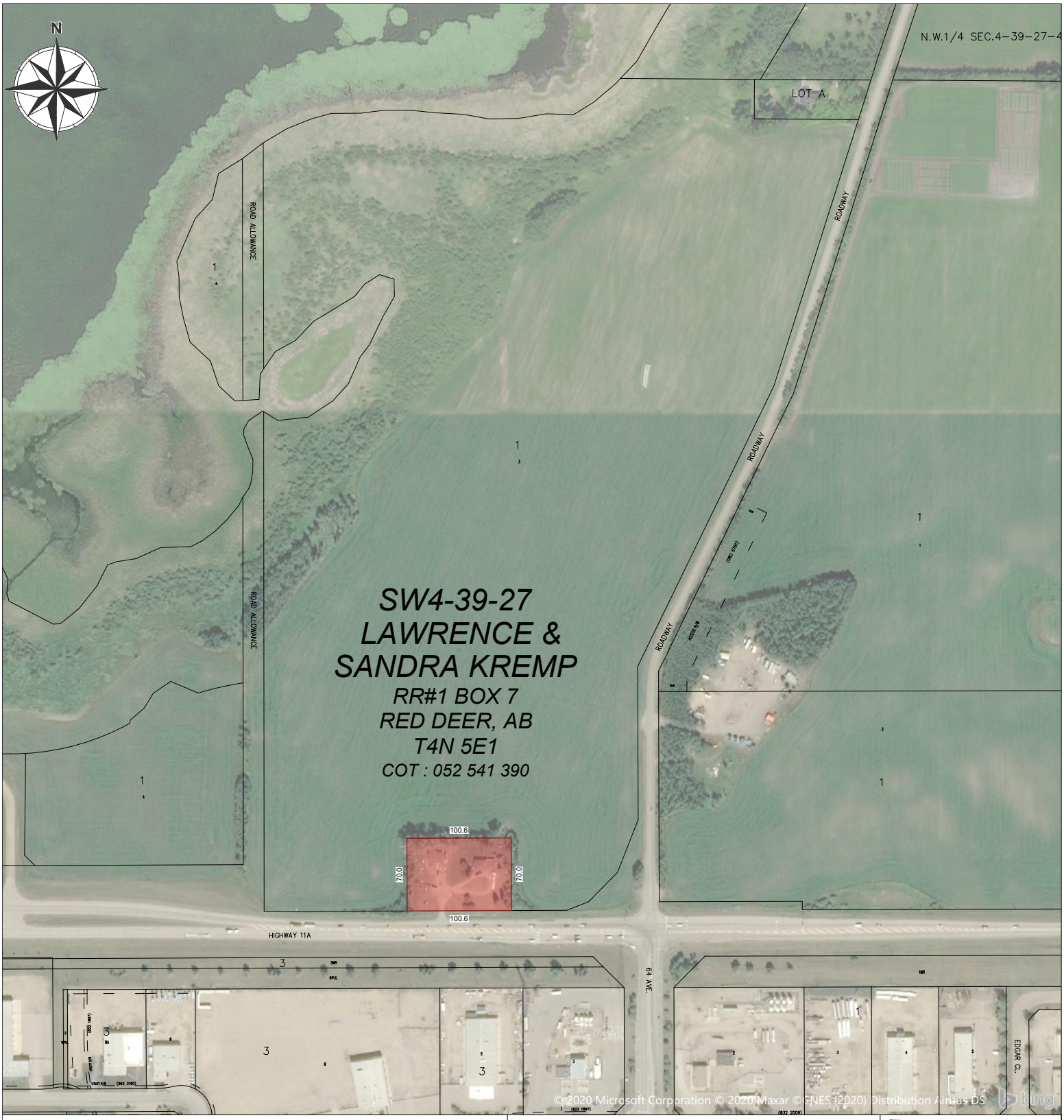
SW4-39-27-4
HIGHWAY 11A / NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NAME	DATE
2500-C-IOP-SW4-39-27-4	JULY 2020

1:5000 SCALE
50m 0 50 100m



TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 0.70 ha (1.73 acres)

SW4-39-27-4
HIGHWAY 11A / NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NAME	DATE	1:5000 SCALE
2500-C-IOP-SW4-39-27-4 (AIR)	JULY 2020	50m 0 50 100m

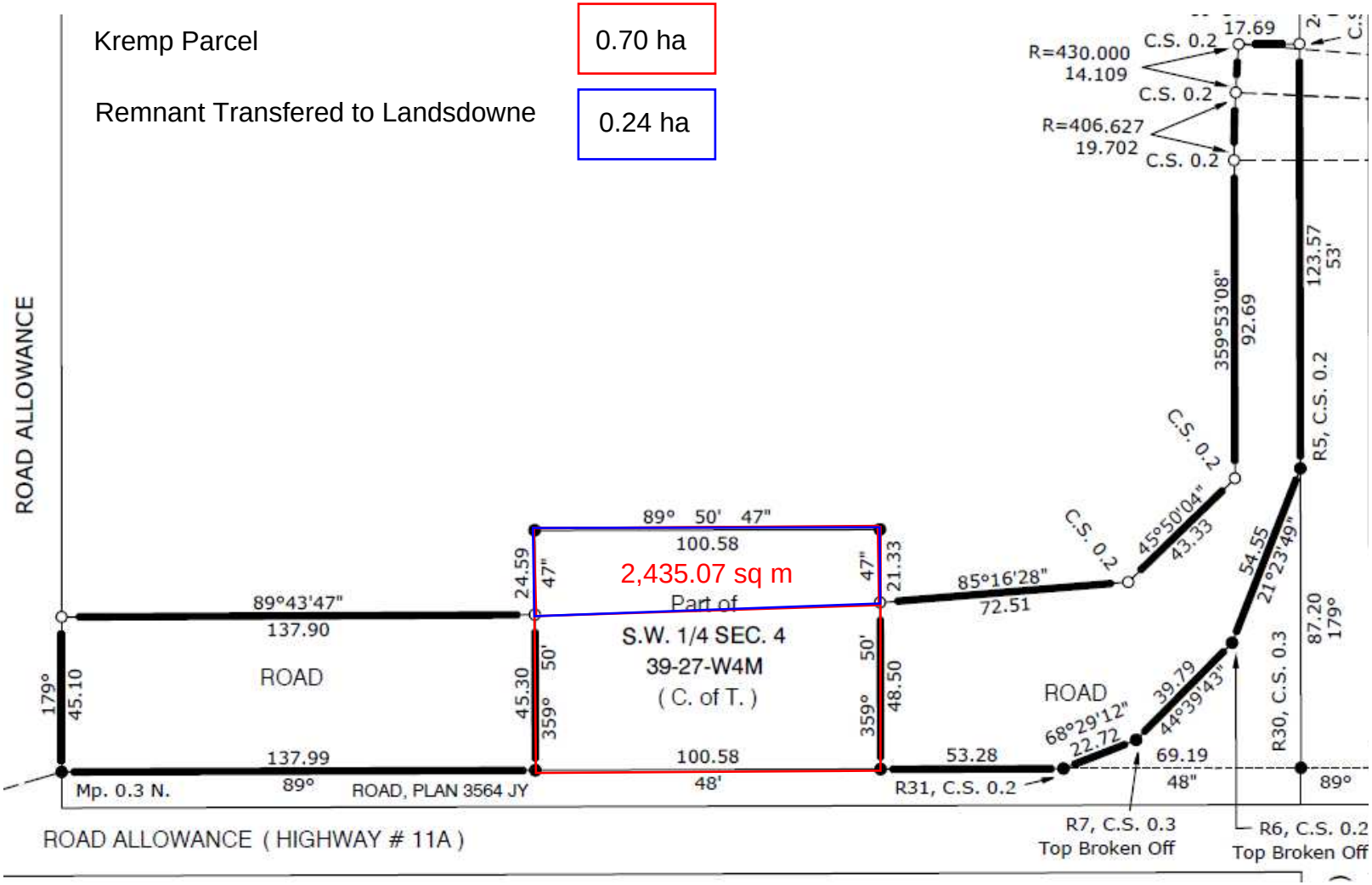
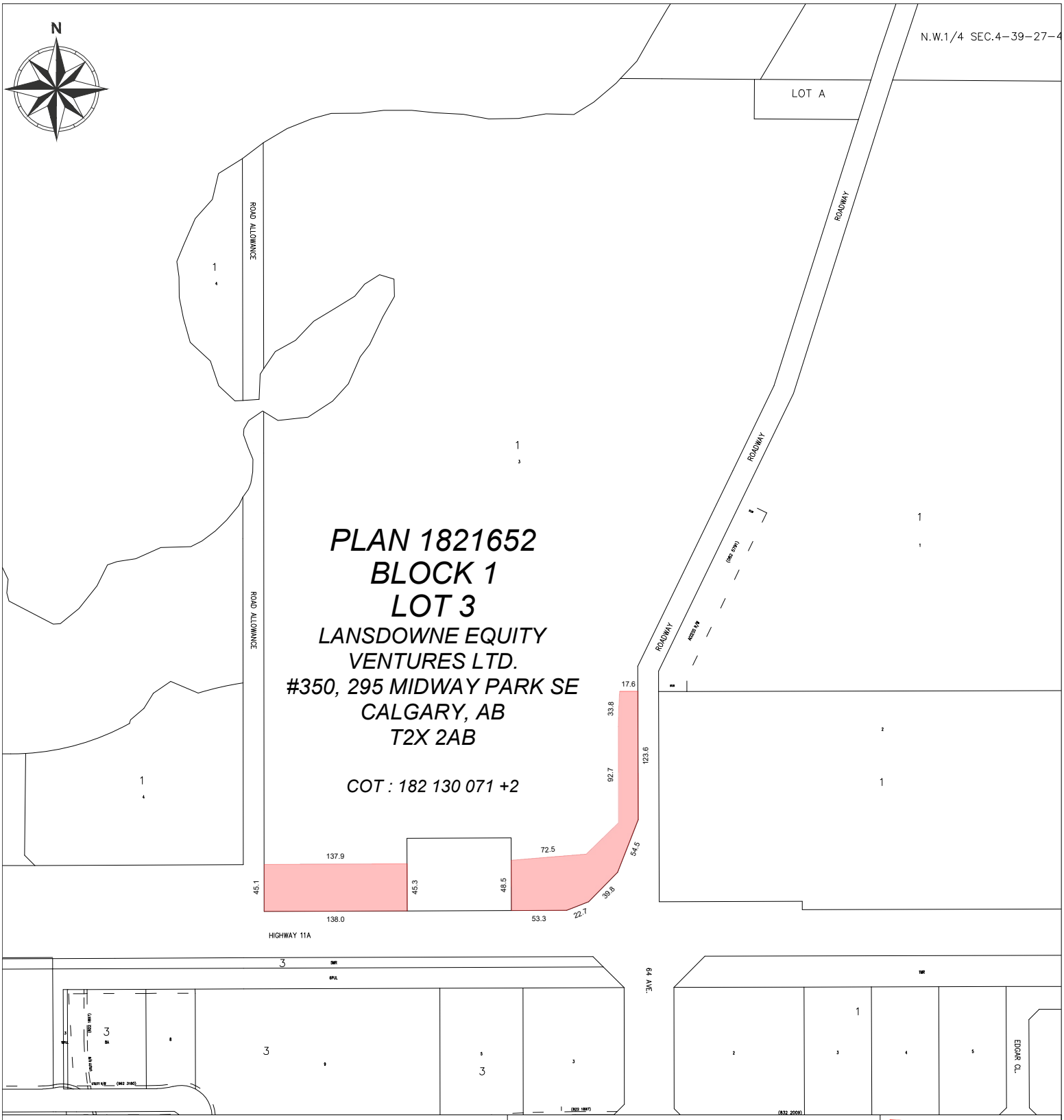

Kremp Parcel
0.70 ha
Remnant Transfered to Landsdowne
0.24 ha
ROAD ALLOWANCE
89°43'47"
137.90
ROAD
179°
45.10
137.99
89°
Mp. 0.3 N.
ROAD, PLAN 3564 JY
24.59
47"
45.30
50'
359°
89° 50' 47"
100.58
2,435.07 sq m
Part of
S.W. 1/4 SEC. 4
39-27-W4M
(C. of T.)
100.58
48'
47"
21.33
50'
359°
48.50
53.28
R31, C.S. 0.2
85°16'28"
72.51
C.S. 0.2
45°50'04"
43.33
C.S. 0.2
R=430.000
14.109
C.S. 0.2
R=406.627
19.702
C.S. 0.2
17.69
359°53'08"
92.69
123.57
53'
R5, C.S. 0.2
54.55
21°23'49"
87.20
179°
R30, C.S. 0.3
ROAD
68°29'12"
22.72
39.79
44°39'43"
69.19
48"
89°
R7, C.S. 0.3
Top Broken Off
R6, C.S. 0.2
Top Broken Off
ROAD ALLOWANCE (HIGHWAY # 11A)

Figure 7



TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 1.42 ha (3.51 acres)

PLAN 1821652 BLOCK 1 LOT 3
HIGHWAY 11A / NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE	1:5000 SCALE
2500-C-IOP-PLAN 1821652 BLK 1 LOT 3	JULY 2020	50m 0 50 100m

TITLE SEARCH COMPLETED : JULY 2020

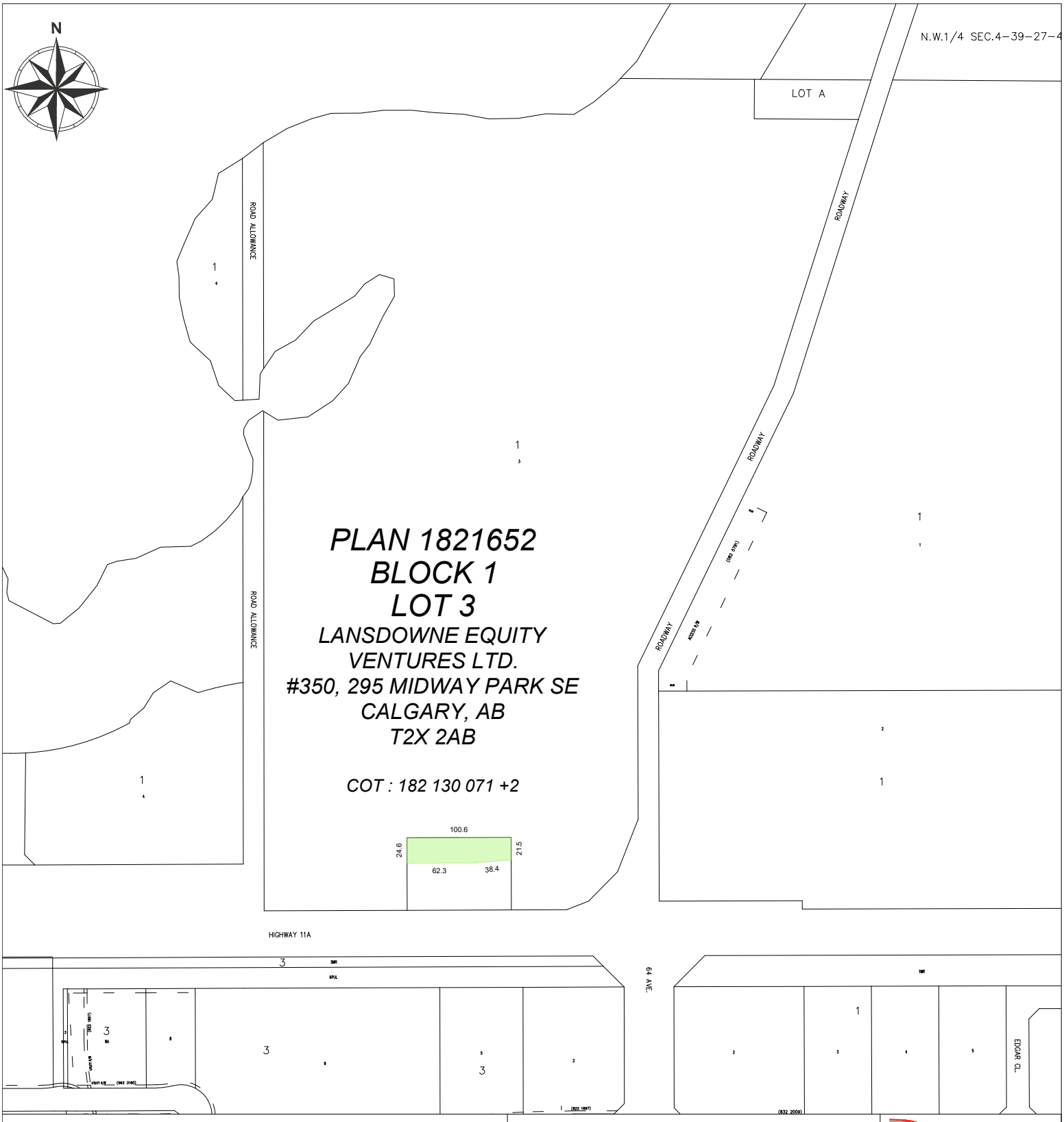
RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 1.42 ha (3.51 acres)

PLAN 1821652 BLOCK 1 LOT 3
HIGHWAY 11A / NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE	1:5000 SCALE
2500-C-IOP-PLAN 1821652 BLK 1 LOT 3 - AIR	JULY 2020	50m 0 50 100m



TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY SWAP
HIGHWAY R/W SWAP : 0.24 ha (0.59 acres)

PLAN 1821652 BLOCK 1 LOT 3
HIGHWAY 11A / NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE
2500-C-IOP-PLAN 1821652 BLK 1 LOT 3 (SWAP)	JULY 2020

1:5000 SCALE

50m 0 50 100m

TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY SWAP
HIGHWAY R/W SWAP : 0.24 ha (0.59 acres)

PLAN 1821652 BLOCK 1 LOT 3
HIGHWAY 11A / NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

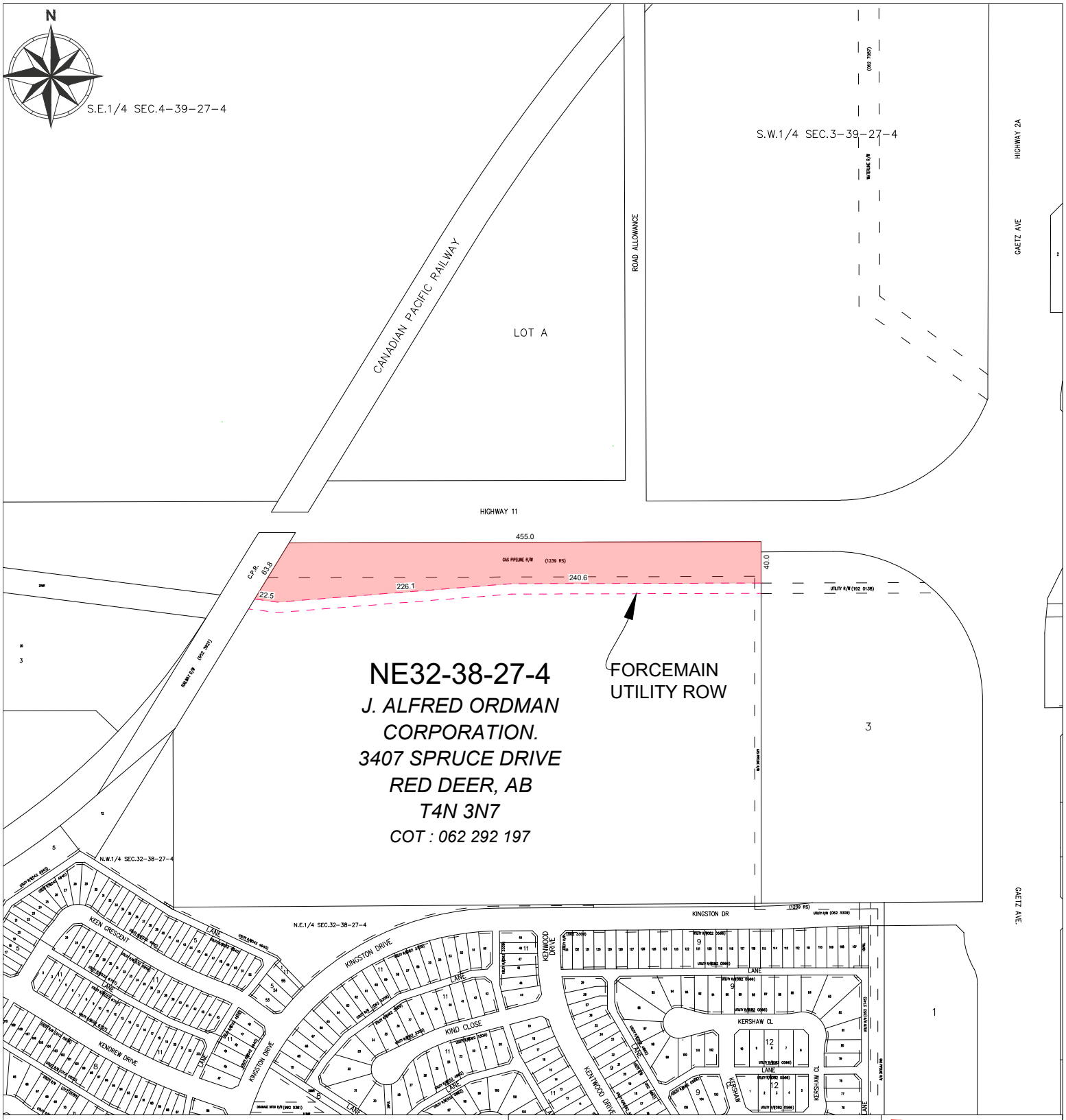
THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE
2500-C-IOP-PLAN 1821652 BLK 1 LOT 3 - AIR (SWAP)	JULY 2020

1:5000 SCALE

50m 0 50 100m



TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 2.09 ha (5.16 acres)

NE32-38-27-4
HIGHWAY 11A/NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE
2500-C-IOP-NE32-38-27-4	JULY 2020

1:5000 SCALE
50m 0 50 100m

TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 2.09 ha (5.16 acres)

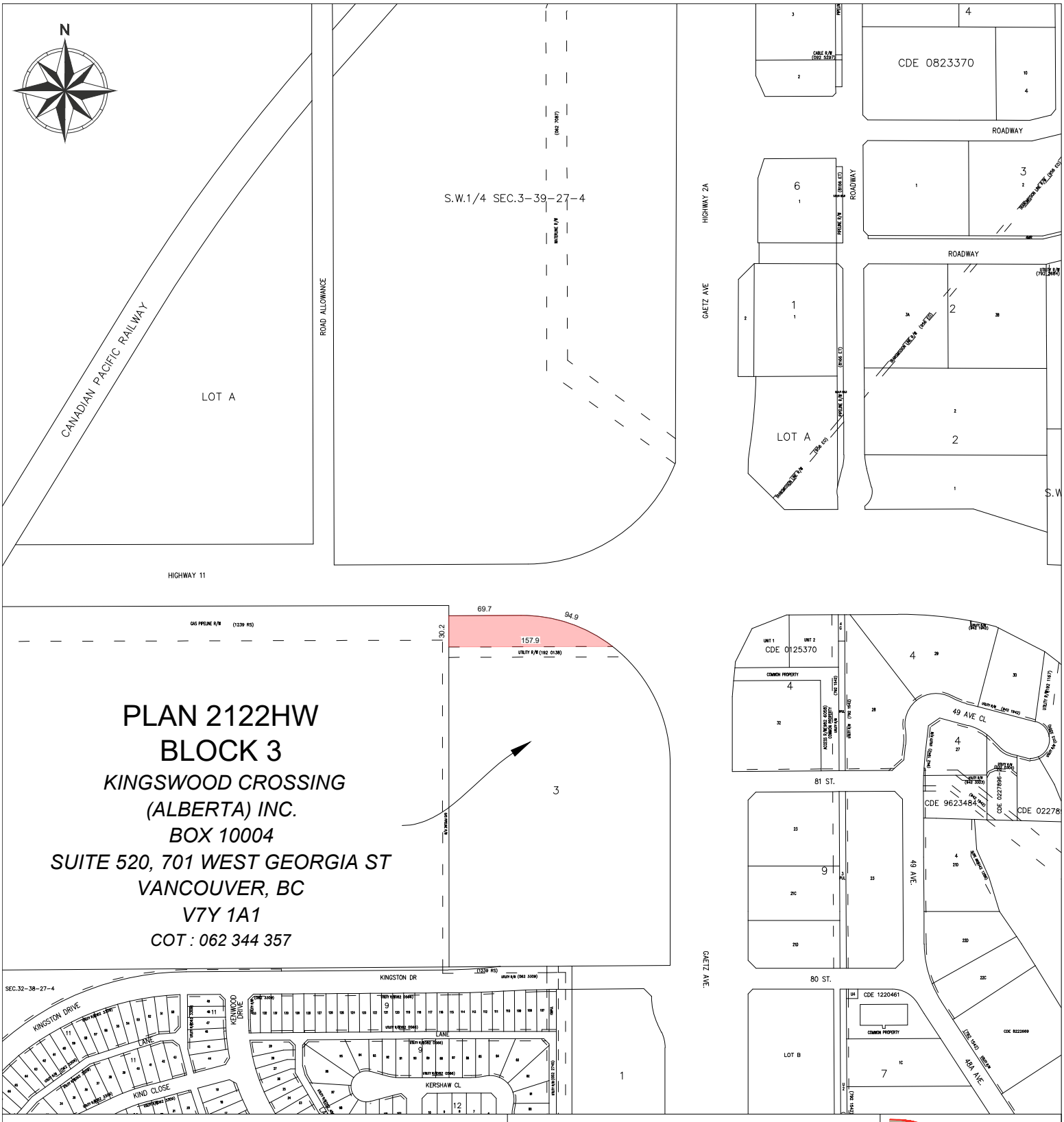
NE32-38-27-4
HIGHWAY 11A/NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE
2500-C-IOP-NE32-38-27-4 (AIR)	JULY 2020

1:5000 SCALE
50m 0 50 100m



TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 0.39 ha (0.96 acres)

PLAN 2122HW BLOCK 3
HIGHWAY 11A/NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE
2500-C-IOP-PLAN 2122HW	JULY 2020

1:5000 SCALE
50m 0 50 100m

TITLE SEARCH COMPLETED : JULY 2020

RIGHT-OF-WAY REQUIRED
HIGHWAY R/W REQUIRED : 0.39 ha (0.96 acres)

PLAN 2122HW BLOCK 3
HIGHWAY 11A/NORTHLAND DRIVE
INDIVIDUAL OWNERSHIP PLAN
PRELIMINARY DESIGN
FOR DISCUSSION PURPOSES ONLY

THE CITY OF Red Deer

Al-Terra Engineering Ltd.

DRAWING NO.	DATE
2500-C-IOP-PLAN 2122HW (AIR)	JULY 2020

1:5000 SCALE
50m 0 50 100m

Appendix B – 2019 to 2024 Project Comparisons

Transportation					
2019 Model		2025 Model			
Item	Project Description	Item	Project Description	Changes	Reason
1	North Highway Connector Projects	1	40190P North Highway Connector Projects	None	
2	20 Ave (19 St - 55 St) West Berm/Landscaping & Arterial Trail Construction	2	40296 20 Ave (19 St - 55 St) West Berm/Landscaping & Arterial Trail Construction J40296	Name Change	
3	W QEII SE 36 QBP Ph 2	~~3~~	~~40317 W QEII SE 36 QBP Ph 2 J40317~~	Project Deleted	Project was not consistent with latest statutory plan.
4	W QEII NE35 QBP Ph 3	4	40318 - 80th Avenue - Phase 1 - Highway 11A to 77 Street	Name Change	
5	West QEII Business Park (SE35) Phase 4 - Divided arterial roadway construction (N to S)	5	40354 - 80th Avenue - Phase 2 - 77 Street to 800 metres south of 77 Street	Name Change	
6	2016 Hwy 11A N - Functional Study	~~6~~	~~40357 - 2016 Hwy 11A N - Functional Study J40357~~	Project Deleted	Project no longer required
7	Northland Dr from Hwy 2 to Taylor Dr - 4 lanes (Design)	7	40384- Highway 11A from QEII to Taylor Drive - 2 lanes to 4 lanes	Name Change	
8	Area 6: Ross Street from 20 Ave to 10 Ave first 2 lanes in 2018-East 580 m & 2029+ construct balance of rdwy East to 10 Ave (1000 m)	8	40388 - Ross Street from 20 Avenue to 600 metres east of 20 Avenue - 4 lane divided arterial	Name Change	
9	Road 6: Taylor Drive / Hwy 11A Intersection Improvements in 2025. Construction of Interchange (2029+)	9	40389 - Highway 11A and Taylor Drive Roundabout	Name Change	
10	32 St (Daines Ave - 20 Ave) 4 Lanes	10	40383 - 32 Street from Daines Avenue to 20 Avenue - 4 lane divided arterial	Name Change	
11	Northland Dr from Taylor Dr to Gaetz Ave - 4 lanes (anticipate base funding by AT; City costs for urban standards)	11	40384 - Highway 11A from Taylor Drive to Gaetz Avenue - 2 lanes to 4 lanes	Name Change	
12	West QEII Business Park (SE35/SW36) Phase 5 - Undivided arterial roadway construction (E to W)	12	77 Street between 75 Avenue and 80 Avenue	Name Change	
13	West QEII Business Park (NE25) Phase 6	13	75 Avenue between Burnt Bluff Street and 79 Street	Name Change	
14	West QEII Business Park (SE35) Phase 7	14	77th Street from 80 Avenue to 800 metres west of 80 Avenue	Name Change	
15	West QEII Business Park (NW25) Phase 8	~~15~~	~~West QEII Business Park (NW25) Phase 8~~	Name Change	Project was not consistent with latest statutory plan.
16	67 St from Quarter Line to 20 Ave - 2 lanes	16	40355 - 67 Street from Threfall Gate to 20 Avenue - 2 lanes to 4 lanes	Name Change	
17	67 St from Quarter Line to 20 Ave	~~17~~	~~67 St from Quarter Line to 20 Ave~~	Project Deleted	Duplicate
18	19 Street (30 Ave to 20 Ave) - 4 Lanes	18	19 Street from east of Vermont Avenue to 20 Avenue - 2 lanes to 4 lanes	Name Change	
19	19 St / 30 Avenue Intersection Improvements	19	19 Street and 30 Avenue Roundabout	Name Change	
20	Northland Drive - Gaetz Ave to 49 Ave	20	40420 - Northland Drive from Gaetz Avenue to 49 Avenue - 4 lanes	Name Change	
21	CN & River Bridges	21	Northland Drive - Red Deer River Bridge	Name Change	
22	Northland Drive - 2 lanes 49 Ave to 78 St Crescent	22	Northland Drive from 49 Avenue to 78 Street Crescent - 2 lanes	Name Change	
23	Northland Drive - 2 lanes 78 St Crescent to 30 Ave	23	Northland Drive from 78 Street Crescent to 30 Avenue - 2 lanes	Name Change	
24	30 Avenue from Northland Drive to 67 Street	24	30 Avenue from Northland Drive to 67 Street - 2 lanes to 4 lanes	Name Change	
25	Northland Drive (Hwy 11A) Twinning & Intersection Improvements	25	40413 - Highway 11A and Gaetz Avenue Roundabout	Name Change	

Transportation					
2019 Model		2025 Model			
Item	Project Description	Item	Project Description	Changes	Reason
26	CP Rail Overpass (Hwy 11A between Taylor Dr & Gaetz Avenue)	26	40419 - CP Rail Overpass (Hwy 11A between Taylor Dr & Gaetz Avenue) J40419	Name Change	
27	20 Avenue from 55 St to 32 St - 2 lanes	27	20 Avenue from 55 St to 32 St - 2 lanes	Name Change	
28	20 Avenue from 67 St to 400 m North of 55 St - 2 lanes	28	20 Avenue from 67 St to 400 m North of 55 St - 2 lanes	Name Change	
29	20 Avenue 400 m North of 55 Street to 55 Street - 2 lanes	29	20 Avenue 400 m North of 55 Street to 55 Street - 2 lanes	Name Change	
30	20 Avenue from 32 St to 19 St - 2 lanes	30	20 Avenue from 32 St to 19 St - 2 lanes	Name Change	
31	Northland Drive - (30 Ave to 20 Ave) - 2 lanes	31	Northland Drive from 30 Avenue to 20 Avenue - 2 lanes	Name Change	
32	Area 1: Taylor Drive (Hwy 11A to stn 0+600) - 4 lane arterial	32	Taylor Drive from Highway 11A to 400 metres north of Highway 11A (Hazlett Access) - 4 lane divided arterial	Name Change	
33	Area 1: Taylor Drive (stn 0+600 to stn 1+000) - 4 lane arterial	33	Taylor Drive from 400 metres north of Highway 11A (Hazlett Access) to New Roadway (Item 36)- 4 lane divided arterial	Name Change	
34	Area 2: Taylor Drive (stn 1+000 to 1+600) - 4 lane arterial	34	Taylor Drive from New Roadway to Township Road 391 - 4 lane divided arterial	Name Change	
35	Area 2: Taylor Drive (stn 1+600 to 2+000) - 2 lane arterial	35	Taylor Drive from Township Road 391 to 800 metres north - 4 lane undivided arterial	Name Change	
36	Area 3: Southern East / West Arterial - 4 lanes (1.2 km)	36	New roadway between Highway 11A and Township Road 391 from Taylor Drive to Highway 2A - 4 lane undvided arterial	Name Change	
37	Area 3: Future Northern East / West Arterial - 4 lanes (1.8 km)	37	Township Road 391 between Taylor Drive and Highway 2A - 4 lane divided arterial	Name Change	
38	Road 7: Hwy 2A Interchange (North side)	38	Highway 2A and Township 391 Interchange	Name Change	
39	Area 2: 30 Avenue North of Northland Drive (NLD) - 2 lanes	39	30 Avenue from Northland Drive to Township Road 390 - 2 lanes	Name Change	
40	Area 4: 67 Street East of 20 Ave - 4 lanes (400 m)	40	67 Street from 20 Avenue to 400 metres east of 20 Avenue - 2 lanes to 4 lanes	Name Change	
41	Area 5: NLD from Gaetz Ave to 67 St - 2 to 4 lanes	41	Northland Drive from Gaetz Avenue to 67 Street - 2 lanes to 4 lanes	Name Change	
42	Area 8: 32 Street from 20 Ave to East quarter line - first 2 lanes (900 m)	42	32 Street from 20 Avenue to east quarter line (900m) - 2 lanes	Name Change	
43	Area 8: 20 Avenue from 67 St to 32 St - 2 to 4 lanes (4000 m)	43	20 Avenue from 67 Street to 32 Street - 2 lanes to 4 lanes	Name Change	
44	Area 9: 32 Street from East quarter line to 10 Ave - 2 lanes (900 m)	44	32 Street from east quarter line to 10 Avenue (900m) - 2 lanes	Name Change	
45	Area 10: 22 Street from 20 Ave to East quarter line - 2 lanes (900 m) (2029+)	45	22 Street from 20 Avenue to east quarter line (900m) - 2 lanes	Name Change	
46	Area 10: 20 Avenue from 32 St to 19 St - 2 to 4 lanes	46	20 Avenue from 32 Street to 19 Street - 2 lanes to 4 lanes	Name Change	
47	Area 10: 19 Street from 20 Ave to 400 m East - 4 lanes	47	19 Street from 20 Avenue to 400 metres east of 20 Avenue - 2 lanes to 4 lanes	Name Change	
48	Area 11: 22 Street from East quarter to 10 Ave - 2 lanes (900 m)	48	22 Street from east quarter line to 10 Avenue (900m) - 2 lanes	Name Change	
49	Area 12: 19 Street from 400 m East of 20 Ave for 800 m - 4 lanes	49	19 Street from 400 metres east of 20 Avenue to 10 Avenue - 2 lanes to 4 lanes	Name Change	
50	NLD Drive - Gaetz Ave to 67 St - 6 lanes (5600 m)	50	Northland Drive from Gaetz Avenue to 67 Street - 4 lanes to 6 lanes	Name Change	

Transportation					
2019 Model		2025 Model			
Item	Project Description	Item	Project Description	Changes	Reason
51	NLD Drive - 67 St to 39 St - 6 lanes (3200 m)	51	Northland Drive from 67 Street to 39 Street - 4 lanes to 6 lanes	Name Change	
52	NLD Drive - 39 St to 19 St - 6 lanes (3200 m)	52	Northland Drive from 39 Street to 19 Street - 4 lanes to 6 lanes	Name Change	
53	Interchanges at 32 Street and 19 Street	53	32 Street and 20 Avenue Interchange	Name Change	
54	Interchange at Gaetz Ave / Hwy 11 A (Not included as part of North of 11A)	54	Highway 11A and Gaetz Avenue Interchange	Name Change	
		56	Highway 11A and Taylor Drive Interchange	New Project	Was combined with Item 9.
		57	Ross Street from 600 metres east of 20 Avenue to 10 Avenue - 4 lane divided arterial	New Project	Project was missing from the model
		58	NorthLand Drive - CN Rail Overpass	New Project	Was combined with Item 21.
		59	19 Street and 20 Avenue Interchange	New Project	Was combined with Item 53.
		60	New Roadway from Twp Rd 391 to 880 metres north - 4 lane undivided arterial	New Project	Project was missing from the model
		61	Ross Street from Donlevy Avenue to 20th Avenue - 4 lane divided arterial	New Project	Project was missing from the model
		62	67 Street from 400 metres east of 20 Avenue to 10 Avenue - 2 lanes to 4 lanes	New Project	Project was missing from the model
		63	22 Street and 20 Avenue Roundabout	New Project	Project replaces project from NLD functional plan, new project added from Laredo NASP ammendment.

Water					
2019 Model		2025 Model			
Item	Project Description	Item	Project Description	Changes	Reasons
1	Clearview Booster Station Upgrade	1	46009 - Clearview Booster Station Upgrade	None	
2	NW Ind NE36, SE36, NE25 (53-54)	2	46011 - NW Ind NE36, SE36, NE25 (53-54)	None	
3	39 Street Water Trunk Twinning (from Mountview Reservoir to Maxwell)	3	46015 - 39 Street Water Trunk Twinning (from Mountview Reservoir to Maxwell)	None	
4	2010-2013 NHC Water Crossing on Riverside Drive	4	46013 - 2010-2013 NHC Water Crossing on Riverside Drive	None	
5	Delburne Road Water Trunk Bower - 40 Ave	5	46019 - Delburne Road Water Trunk Bower - 40 Ave	None	
6	Central Park Water Trunk	6	46020 - Central Park Water Trunk	None	
7	NRDRWSC SUPPLY LINE	7	46021 - NRDRWSC SUPPLY LINE	None	
8	Water Model Update	8	46022 - Water Model Update	None	
9	Queens Business Park(QBP) (SW36) - Water Trunk	9	Queens Business Park(QBP) (SW36) - Water Trunk	Removed	Based on the updated servicing concept for the area, this pipe is no longer a levy size pipe.
10	Area 1: Hwy 11A (51-21) - (SE5 & SW4)	10	Trunk (NE36/NW31)1400m(600mm)	Name Change	
11	Area 1: Taylor Drive Trunk (SW4) (stn 0+000 to 0+600)	11	Trunk (SW4) 500m (600mm)	Name Change	
12	Area 2: Taylor Drive Trunk (NW4) (stn 0+600 to 1+1400)	12	Trunk (NW4) 900m (500mm)	Name Change	
13	~~Area 2: Trunk - Twp Road 391 from Central Pk to RR 274 (800m) (East/West Leg)~~	13	Trunk Taylor&Hwy11A200m(400mm)	New Project	Former project #13 was removed. The current #13 is a new project.
14	Northland Dr (Gaetz Avenue to 67 St) Supply Line - includes 600mm tie in for Chiles Area	14	Trunk(RvrsdDr&NLD)4400m(900mm)	Name Change	
15	Area 3 (SE4 & SW4): 750/600mm Trunk from Pump Station to C&E Trail. (Includes 400mm North/South Trunk)	15	Trunk (S4) 900m (750mm)	Scope Change	Project scope was modified due to updated servicing concept for the area.
16	Reservoir N of 11A	16	Reservoir N of 11A	Location Change	Based on the updated servicing concept for the area, the reservoir location was changed.
17	Queens Supply Line (Hwy 11A) (750mm) from Pump Station to tie-in East of Hwy 2. (Includes cost of Booster Pump)	17	Trunk(SW3/S4/SE5) 2900m(750mm)	Scope Change	Scope change due to regional line purchase and updated servicing concept in the area.
18	~~Hwy 2A Trunk (600/450mm) from Pump Station to Twp Rd 391- East. (Includes East/West leg at the end)~~	18	46023 - Trunk (NE3) 250m (400mm)	Scope Change	Scope change due to regional line purchase and updated servicing concept in the area.
19	Area 2: Water Trunk (SE8) (500mm) along Rge Rd 274 from Twp Rd 391 to CP Rail (City Limits)	19	Trunk (SW9) 800m (400mm)	Name Change & Modified Location	Project was moved 800m east based on updated servicing concept.
20	Area 1: Supply line (WTP-38 & 39 to 42)	20	TrunkS26/27/NE21 4020m900mm	Project was broken into two (#20 and #31)	Project was split into two pieces for more logical staging purposes. Second portion is contained in #31
21	Area 1: East Hill Pump Station & Reservoir	21	Reservoir East Hill (SW25)	Name Change	
22	Water Treatment Plant Pumps Upgrades - upgrade high lift pumps from 350hp to 900hp	22	WTP HLP Upgrade (NE17)	Name Change	

Water					
2019 Model		2025 Model			
Item	Project Description	Item	Project Description	Changes	Reasons
23	Area 3 (SW25): 20 Avenue Trunk Mains from 67 St to 800m North of 20 Ave	23	Trunk (SW25) 800m (400mm)	Name Change	
24	Area 3 (NW25): 20 Avenue Trunk Mains from 800m north of 20 Ave to 1600m north	24	Trunk (NW25) 800m (400mm)	Name Change	
25	Area 1 & Area 2 (SE35 & SW35): 750mm Trunk	25	Trunk (SE35) 800m (400mm)	Name Change	
26	~~Area 3 (SW25 & NW25): 600/450mm Trunk~~	26	Trunk (NW24) 1350m (500mm)	Name Change	Original project removed. The old number 29 is now this project.
27	~~Area 3 (SW25 & NW25): 500mm Trunk~~	27	Trunk (NW24) 400m (600mm)	Name Change	Original project removed. The old number 28 is now this project.
28	Development East of Pump Station & East of Area 4	28	TrunkSW24/N13 1600m(500/400mm)	Item numbering change	This was previously project #30
29	Area 4 (NW24): 600mm East Trunk from Pump Station plus 500mm North/South Trunk	29	Trunk (N13) 1200m (500/400mm)	Item numbering change	This was previously project #31
30	Area 5, 6 & 7 (SW24, NW13 & SW 13): 20 Ave Trunk	30	Trunk (SE4) 350m (600mm)	Name Change	Project broken out from #15
31	Area 6 (NE13): 500/400mm Trunks	31	SL TrunkSW21/NE17 1100m1200mm	Name Change	Project broken out from #20
32	~~Area 10 & Area 12 (SE11 & SW11): 400/500mm Trunks~~	32	Trunk (S26) 1250m (400mm)	New Project	Original project removed. This is now a new project
33	~~Area 11 (NE11): 450/500 Trunks~~	33	Trunk (SW11) 600m (400mm)	New Project	Original project removed. This is now a new project
		34	Trunk (SW3) 350m (400mm)	Name Change	Broken out from old project 18

Sanitary					
2019 Model		2025 Model			
Item	Project Description	Item	Project Description	Changes	Reason
1	Riverside Drive Sani Trunk Twinning	1	47009 - Riverside Drive Sani Trunk Twinning	None	
2	Sani Trunks - NW Industrial (NE36)	2	47005 - Sani Trunks - NW Industrial (NE36)	None	
3	Sani Trunk Twinning (Downtown Capacity)	3	47006 - Sani Trunk Twinning (Downtown Capacity)	None	
4	EHC-Timberstone SW23 Trunk (56-55)	4	47012 - EHC-Timberstone SW23 Trunk (56-55)	None	
5	NW Ind-S 1B Basin (45-67,67-68) Design '10	5	47017 - NW Ind-S 1B Basin (45-67,67-68) Design '10	None	
6	Vanier E & N Sanitary Trunk	6	47021 - Vanier E & N Sanitary Trunk	None	
7	NW Ind Dev (NW36) 64-65 in 2013 & 65-66 in 2016	7	47025 - NW Ind Dev (NW36) 64-65 in 2013 & 65-66 in 2016	None	
8	2009 - 2013 Sanitary Projects for NHC	8	47010 / 47019 - 2009 - 2013 Sanitary Projects for NHC	None	
9	EHC - Timberlands Diversion - S 1/4 Line to 67 St (50-52)	9	47027 - EHC - Timberlands Diversion - S 1/4 Line to 67 St (50-52)	None	
10	NHC EHN 30 Ave Sani Trunk 50-49	10	47028 - NHC EHN 30 Ave Sani Trunk 50-49	None	
11	Hwy 11A Sani Trunk 59-60	11	47209 - Lift Station (SE5 at Hwy 11A)	Name Change	
12	NRDRWWSC Oversizing Regional Sewer	12	47033 - NRDRWWSC Oversizing Regional Sewer	None	
13	~~Area 1: Sanitary Trunk (SE5) (800m)~~	13	TrunkSW12/W1 2260m450/525/675	Replaces former #25 and 26	Original #13 no longer a trunk size pipe based on latest servicing concept and was thus removed
14	Sanitary Model Update	14	47024 - Sanitary Model Update	None	
15	Area 2: Sanitary Trunk (North 1/2 of 3 & NE4)	15	Trunk(NW3&NE4)1900m(750/450mm)	Scope Change	The portion of pipe through the EVRAZ yard used to be under the current #32. It is now contained here.
16	Area 3: Sanitary Trunk (NE 4) (400 m)	16	Trunk (NW4) 1500m (450/375mm)	Scope Change	
17	Sanitary Trunk (NE3) - adjacent to Hwy 2A, connecting shared Regional Line to the area (City Snow Site)	17	47036 - Sanitary Trunk (NE3) - adjacent to Hwy 2A, connecting shared Regional Line to the area (City Snow Site)	Scope Change	
18	Area 1: Trunk Mains from 20 Ave to 30 Ave	18	Trunk (S35) 2000m (600mm)	Name Change	
19	Area 2: Lift Station & Trunk Mains from Northland Drive North (1600m)	19	Trunk (SW35) 800m (450mm)	Scope Change	
20	Area 3: Trunk Mains from Northland Drive to 67 St	20	Trunk (W25) 850m (600mm)	Name Change	
21	Area 4: Trunk Mains from 67 St to South Quarter Line (800m)	21	Trunk (NW24) 800m (600mm)	Name Change	
22	Area 5: Trunk Mains from Quarter Line to 55 St	22	Trunk (SW24) 850m (600/675mm)	Name Change	
23	Area 6: Trunk Mains from 55 St to Ross St	23	Trunk (NW13) 800m (675mm)	Name Change	
24	Area 7: Trunk Mains from Ross St to 39 St	24	Trunk (SW13) 800m (675mm)	Name Change	
25	~~Area 8: Lift Station, Trunk Mains and temporary tie-in to SRD Force Main~~	25	Lift Station (SW11)	New Project	Project was added to service an area near the northern City boundary that was not included in the last levy model
26	~~Area 10: Lift Station, Trunk Mains and temporary tie-in to SRD Force Main~~	26	Lift Station (SW1)	New Project	Project added due to different servicing concept in this area
27	Force Main from 19 St to 39 St and tie-in to Lift Station in Area 8 & Area 10	27	Forcemain(W12/1) 3380m (450mm)	Scope Change	
28	Forcemain (NE3 & SE10) (1450m)	28	Forcemain (NE3 & SE10) (1450m)	None	
29	Lift Station (SE10)	29	Trunk (S10) 1800m (450mm)	Numbering Change	Was contained within the old #30

Sanitary					
2019 Model		2025 Model			
Item	Project Description	Item	Project Description	Changes	Reason
30	Trunkmain (S ½ 10) (1200m)	30	Lift Station (SE2 & SW1)	Numbering Change	Was contained within the old #31
31	Lift Station (SE2 & SW1)	31	Forcemain(S11&N2)2100m(250mm)	Numbering Change	Was contained within the old #32
32	Forcemain (SW11 & N ½ 2)	32	Trunk (NE/NW3) 350m (750mm)	Scope Change	

Stormwater					
2019 Model		2025 Model			
Item	Project Description	Item	Project Description	Changes	Reason
1	Storm Infrastructure - NW Industrial (20-90-I1, 90-H1)	1	48003 - Storm Infrastructure - NW Industrial (20-90-I1, 90-H1)	None	
2	EHC - 67 St Trunks 55-54, Pond D7	2	48008 - EHC - 67 St Trunks 55-54, Pond D7	None	
3	Timberstone Trunk 61-60, Pond D2	3	48018 - Timberstone Trunk 61-60, Pond D2	None	
4	Hazlett Lake Storm Management Plan	4	48017 - Hazlett Lake Storm Management Plan	None	
5	Vanier E & N Trunk (100-101) & Pond C8	5	48025 - Vanier E & N Trunk (100-101) & Pond C8	None	
6	2010-2013 EHN-Northland Dr - 30 Ave - Outfall (81-78)	6	48015/48023 - 2010-2013 EHN-Northland Dr - 30 Ave - Outfall (81-78)	None	
7	EHN - 30 Ave Storm Trunk 81-84	7	48032 - EHN - 30 Ave Storm Trunk 81-84	None	
8	EHN - NW26 - Northland Dr - Pond H5 & 82-81 Trunk	8	48035 - EHN - NW26 - Northland Dr - Pond H5 & 82-81 Trunk	None	
9	Area 1: Hazlett Lake - Overflow Drainage Route Improvements	9	48048 - Hazlett Drainage Improvement	Name Change	
10	QBP NE35 Pond I3	10	~~48027 - QBP NE35 Pond I3~~	Project Deleted	
11	QBP SE36 Pond I4	11	~~48039 - QBP SE36 Pond I4~~	Project Deleted	
12	QBP SE36 Trunk 92B-94	12	~~48016 - QBP SE36 Trunk 92B-94~~	Project Deleted	
13	EHN - SW26 - POND H2	13	~~48047 - EHN - SW26 - POND H2~~	Project Deleted	
14	Area 2/3: Hazlett Lake Trunk & Outfall at Red Deer River (2400m)	14	48049 - Trunk (S3) (CPRail - RD River)	Scope Change	Project was split into two pieces for more logical staging purposes. Second portion is contained in #31
15	AREA 6 (N13) STORM PONDS PROJECT	15	~~48050 - AREA 6 (N13) STORM PONDS PROJECT~~	Project Deleted	
16	AREA 6 (N13) 20 AVE TRUNK MAIN	16	~~48051 - AREA 6 (N13) 20 AVE TRUNK MAIN~~	Project Deleted	
17	Queens Business Park (QBP) (NW25) Trunk (94-95)	17	~~Queens Business Park (QBP) (NW25) Trunk (94-95)~~	Project Deleted	
18	(QBP) (SW36) - Trunk (96-Pond I5) & Pond I5	18	~~(QBP) (SW36) - Trunk (96-Pond I5)~~	Project Deleted	
19	East Hill North (EHN) - (NE 27) Trunk (79-80)	19	~~East Hill North (EHN) - (NE 27) Trunk (79-80)~~	Project Deleted	
20	EHN - North of 67 St. (SW27) - Trunk (76-84)	20	Trunk(SE27) 800m (450/525mm)	Scope Change	
21	EHN - (NW26) Northland Dr - Trunks (81-83)	21	~~EHN - (NW26) Northland Dr - Trunks (81-83)~~	Project Deleted	
22	EHN - (SW 26) 71 St. - Trunks (84-85) & (85-86)	22	Trunk (SW26) 800m (750mm)	Scope Change	
23	Sunnybrook (SE4) - Trunks (46 - 47)	23	~~Sunnybrook (SE4) - Trunks (46 - 47)~~	Project Deleted	
24	Sunnybrook (NE4) Bower quarter - Trunks (41-40)	24	~~Sunnybrook (NE4) Bower quarter - Trunks (41-40)~~	Project Deleted	
25	Sunnybrook (NE4) Bower quarter - Trunks (42-43)	25	~~Sunnybrook (NE4) Bower quarter - Trunks (42-43)~~	Project Deleted	
26	Area 2 (NW4 & SE9): Trunks East of Hazlett Lake (800m)	26	Trunk (NE4) 600m (1500mm)	Name Change	
27	Area 3 (SE & NE4): Trunk (700m)	27	Trunk (NE4) 370m (1050mm)	Name Change	
28	Area 2 (SW9 & SE8): Trunk (800m)	28	Trunk (SW9) 800m (1500mm)	Name Change	
29	Phase 2 (SW10): Trunk (800m)	29	Trunk TWP391 950m (750/1200mm)	Name Change	
30	Area 1 (S35): Trunk Mains	30	Trunk(S35)2110m 2100/2250/2700	Scope Change	Original project serviced only Coventry
31	~~Area 2 (E34 & W35): Outfall & Trunk Mains~~	31	Trunk (SE4) (CP Rail to C&E Trail)	New Project	Former #31 was deleted
32	Area 3 (W25): 20 Ave Trunk Mains	32	Trunk (NE26) 830m (2100mm)	Name Change	
33	Area 3 (W25): East/West Trunk Mains	33	Trunk (W25) 800m (900mm)	Name Change	
34	Area 4 (NW24): 20 Ave Trunk Mains	34	Trunk (NW24) 860m (1950mm)	Name Change	

Stormwater					
2019 Model		2025 Model			
Item	Project Description	Item	Project Description	Changes	Reason
35	Area 4 (NW24): 67 St Trunk Mains	35	Trunk (N13) 800m (675/750mm)	Name Change	Original project #35 was removed (no longer required based on servicing strategy)
36	Area 5 (SW24): 20 Ave Trunk Mains	36	Trunk (SW24) 770m (1950mm)	Name Change	
37	Area 5 (SW24): 55 St/Hwy 11 Trunk Mains	37	Trunk (SW24) 840m (525mm)	Name Change	
38	Area 7 (S13): 20 Ave Trunk Mains	38	Trunk (SW13) 830m (1650mm)	Name Change	
39	Area 7 (S13): 39 St Trunk Mains	39	Trunk(S13)1660m1200/1350/1500mm	Name Change	
40	Area 8 (W12): 20 Ave Trunk Mains	40	TrunkW11&12 2460m750/1500/1800	Name Change	
41	Area 8 (W12): 19 St Trunk Mains	41	Trunk (S2,3&4) 4000m (1950mm)	Name Change	
42	Area 8 (W12): Pond Trunk Mains	42	Trunk (W12) 400m (750mm)	Scope Change	
43	Area 9 (E12): Trunk Mains	43	Trunk (SE12) 800m (900mm)	Name Change	
44	Area 10 (W1): Trunk Mains	44	Trunk (W1) 580m (900mm)	Name Change	
45	Area 12 (SE1): Trunk Mains	45	Trunk(S1) 800m (1050/1200mm)	Scope Change	
46	Trunkmain (N ½ 9) (2200m)	46	Trunk (E9) 2600m (1200/1500mm)	Name Change	
47	Trunkmain (SW10) (550m)	47	Trunk (NW13) 800m (1800mm)	Name Change	
48	Trunkmain (E ½ 10) (1700m)	48	Trunk (E10) 1500m(1200/1500mm)	Name Change	
		49	Storm Model Update	New Project	
		50	Trunk(NW1)880m(1050/1200mm)	Scope Change	Originally part of project 42

Appendix C – Developable Area Comparison

The following area structure plans were reviewed to determine that actual percentage of land that is including in the utility and railway right of way exemption.

Area Structure Plan	Gross Plan Area	Environmental Reserve	Subtotal	Pipeline and Railway	% of Subtotal
Lancaster - Vanier - East	123.36	1.17	122.19	2.05	1.68%
Clearview North	76.03	1.85	74.18	0	0.00%
Timber Ridge	64.1	0	64.10	0	0.00%
Section 13	117.71	0	117.71	7.02	5.96%
Hazlett Lake	100.72	20.54	80.18	0	0.00%
Evergreen	62.25	5.06	57.19	0	0.00%
Emerson	40.32	0	40.32	0	0.00%
Coventry	46.04	3.76	42.28	0	0.00%
Bower Woods	63.28	16.68	46.60	0	0.00%
Garden Heights	65.77	39.11	26.66	0	0.00%
Timberlands North	36.78	0	36.78	0	0.00%
Timberlands South	63.9	0	63.90	0	0.00%
Queens NE35 & SE 35	125.78	11.73	114.05	0.47	0.41%
Queens Business Park	117.2	0	117.20	0	0.00%
Queens SW36 & NW25	132.82	13.13	119.69	0.38	0.32%
Queens Business Park SE 36	65	0	65.00	0	0.00%
Basin 20	139.22	21.64	117.58	2.91	2.47%
Total all areas			**1188.03**	**9.92**	**0.83%**
Total with pipeline and railway			**591.22**	**9.92**	**1.68%**

To be conservative, 1.68% was used in the model to approximate the amount of area considered undevelopable for pipeline and railway exemptions.

The calculation in the model would apply this 1.68% reduction to all of the basins however Basin 10 and 16 do not have any estimated reductions for pipeline and railway. Basin 15 is also exempt from the calculation. To calculate an accurate number, a 1.68% reduction was applied to the subtotal of the remaining basins. A percentage was then calculated to use in the model, which was 0.54%. To be conservative we used 1%.

The percentage of pipeline and railway right of way to be exempted by dividing the total number by the subtotal which is the gross area minus the environmental reserve.

0.54%

Basin	Gross Area (ha.)	Environmental Reserves (ha.)	Sub-total	Pipeline and Railway Right of Way
1	133.33	0.26	133.07	2.24
2	61.61	0.34	61.27	1.03
3	91.76	15.50	76.26	1.28
4	254.25	92.32	161.93	2.72
5	60.57	15.77	44.80	0.75
6	105.81	21.54	84.27	1.42
7	434.03	41.78	392.25	6.59
8	205.39	54.59	150.80	2.53
9	510.46	20.01	490.45	0.98
10	3383.73	0.42	3383.31	0.00
11	298.38	18.40	279.98	4.70
12	268.20	15.92	252.28	4.24
13	133.08	11.16	121.92	2.05
14	448.34	24.13	424.21	7.13
15	287.31	0.00	287.31	0.00
16	3096.41	268.45	2827.96	0.00
17	397.84	20.72	377.12	6.34
18	326.55	16.78	309.77	5.20
19	195.62	16.76	178.86	3.00
20	139.22	21.64	117.58	2.91
	10831.88	**676.49**	**10155.40**	**55.11**

Comparison of the 2019 and 2024 development areas are shown below.

2019 Development Area

Basin	Gross Area (ha.)	Environmental Reserves (ha.)	Sub-total	Pipeline and Railway Right of Way	Arterial Right of Way	Net Development Area (ha.)	Net Development After 25 Yrs	Net Development Area in 25 Yrs + Developed to Date	Area Developed to Date (ha.)	Development Area Next 25 Years (ha.)
1	133.33	0.26	133.07	13.31	3.03	116.73	0.00	116.73	25.30	91.43
2	61.61	0.34	61.27	6.13	5.91	49.23	0.00	49.23	3.27	45.96
3	91.76	15.50	76.26	7.63	2.37	66.26	0.00	66.26	23.85	42.41
4	254.25	92.32	161.93	16.19	7.41	138.33	0.00	138.33	27.87	110.46
5	60.57	15.77	44.80	4.48	0.73	39.59	0.00	39.59	3.68	35.91
6	105.81	21.54	84.27	8.43	0.00	75.84	0.00	75.84	58.89	16.95
7	431.08	41.78	389.30	38.93	25.32	325.05	0.00	325.05	90.36	234.69
8	205.39	54.59	150.80	15.08	10.79	124.93	0.00	124.93	20.25	104.68
9	510.46	20.01	490.45	49.05	1.82	439.59	0.01	439.58	165.90	273.68
10	3383.73	0.42	3383.31	338.33	0.06	3044.92	0.00	3044.92	2986.35	58.57
11	298.38	18.40	279.98	28.00	4.43	247.55	0.00	247.55	198.77	48.78
12	268.20	15.92	252.28	25.23	14.18	212.87	0.00	212.87	21.48	191.39
13	133.08	11.16	121.92	12.19	4.14	105.59	0.00	105.59	8.96	96.63
14	448.34	24.13	424.21	42.42	9.09	372.70	0.00	372.70	58.05	314.65
15	287.31	0.00	287.31	28.73	0.00	258.58	0.00	258.58	258.58	0.00
16	3096.41	268.45	2827.96	282.80	1.29	2543.87	0.00	2543.87	2383.36	160.51
17	397.84	20.72	377.12	37.71	14.82	324.59	0.00	324.59	27.60	296.99
18	326.55	16.78	309.77	30.98	25.37	253.42	0.00	253.42	9.54	243.88
19	195.62	16.76	178.86	17.89	10.53	150.44	0.00	150.44	5.65	144.79
	10689.71	**654.85**	**10034.87**	**1003.49**	**141.29**	**8890.09**	**0.02**	**8890.07**	**6377.71**	**2512.36**

2024 Development Area

Basin	Gross Area (ha.)	Environmental Reserves (ha.)	Sub-total	Pipeline and Railway Right of Way	Arterial Right of Way	Net Development Area (ha.)	Net Development After 25 Yrs	Net Development Area in 25 Yrs + Developed to Date	Area Developed to Date (ha.)	Development Area Next 25 Years (ha.)
1	133.33	0.26	133.07	1.33	3.03	128.71	0.00	128.71	25.30	103.41
2	61.61	0.34	61.27	0.61	5.91	54.75	0.00	54.75	3.27	51.48
3	91.76	15.50	76.26	0.76	2.37	73.13	0.00	73.13	23.85	49.28
4	254.25	92.32	161.93	1.62	7.41	152.90	0.00	152.90	27.87	125.03
5	60.57	15.77	44.80	0.45	0.73	43.62	0.00	43.63	7.74	35.89
6	105.81	21.54	84.27	0.84	0.00	83.43	0.01	83.42	58.89	24.53
7	434.03	41.78	392.25	3.92	34.19	354.14	0.00	354.14	90.36	263.78
8	205.39	54.59	150.80	1.51	12.67	136.62	0.00	136.62	20.25	116.37
9	510.46	20.01	490.45	4.90	1.82	483.73	0.00	483.73	165.90	317.83
10	3383.73	0.42	3383.31	33.83	2.54	3346.94	0.00	3346.94	2986.35	360.59
11	298.38	18.40	279.98	2.80	4.43	272.75	0.00	272.75	198.77	73.98
12	268.20	15.92	252.28	2.52	14.18	235.58	0.00	235.58	21.48	214.10
13	133.08	11.16	121.92	1.22	4.14	116.56	0.00	116.56	8.96	107.60
14	448.34	24.13	424.21	4.24	9.09	410.88	0.00	410.87	68.06	342.81
15	287.31	0.00	287.31	2.87	0.00	284.44	0.04	284.40	284.40	0.00
16	3098.38	266.92	2831.46	28.31	1.29	2801.86	0.00	2801.86	2389.49	412.37
17	397.84	20.72	377.12	3.77	14.82	358.53	0.00	358.53	27.60	330.93
18	326.55	16.78	309.77	3.10	25.37	281.30	0.00	281.30	9.54	271.76
19	195.62	16.76	178.86	1.79	10.53	166.54	0.00	166.54	5.65	160.89
20	139.22	21.64	117.58	1.18	0.00	116.40	0.00	116.40	0.00	116.40
	10833.85	**674.96**	**10158.90**	**101.59**	**154.52**	**9902.79**	**0.04**	**9902.75**	**6423.73**	**3479.03**