STARKEY HILLS AREA OUTLINE PLAN

RIVER LOT 63 - STURGEON COUNTY

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Table of Contents

List of Figures

Appendices

- Phase 1 Environmental Site Assessment – R.P.S. Consulting Ltd.
- Biophysical Assessment Report – Basin Environmental Ltd.
- Wetland Assessment & Impact Report – Basin Environmental Ltd.
- Traffic Impact Assessment – D&A Paulichuk Consulting Ltd.
- Geotechnical Investigations (2022 & 2006) – Shelby Engineering
- Stormwater Management Concept Report – Northwest Hydraulic Consultants
- Downstream Drainage Assessment Report – Northwest Hydraulic Consultants
- Sanitary Sewer Assessment REV005 – Sameng Inc.
- Starkey Hills Hydraulic Network Analysis – AECOM Canada Ltd.
- Traffic Noise Assessment – Triton Environmental Consultants

1.0 Introduction

1.1 Purpose

The purpose of the Starkey Hills Outline Plan (OP) is to build upon the Sturgeon Valley Core Area Structure Plan (ASP) by providing additional detail on how development will support ASP policies and provide further information on future subdivision and development concepts within the OP area.

1.2 Outline Plan Location

Starkey Hills is located within the Sturgeon Valley Core Area ASP (denoted as Valley Core Reserve) and encompasses an area of approximately 39.2 hectares on River Lot 63. The OP area is bounded by:

- Township Road 544D / Coal Mine Road to the north;
- Range Road 251 / Starkey Road to the east;
- Township Road 544C / Coal Mine Road to the west; and
- Manor Pointe development area to the south.

Please see **Figure 1** for a key plan map of the OP area.

1.3 Background

The following highlights the history of the Sturgeon Valley ASP and approved amendments:

Bylaw 1557/21	Approved September 2021 to revise and replace policies related to the Sturgeon Valley area of the County based on Edmonton Metropolitan Region Board (EMRB) amendments to the Edmonton Metropolitan Region Growth Plan (EMRGP) that designated these lands as the Sturgeon Valley Special Study Area (SVSSA). The existing Sturgeon Valley Core Area Structure Plan was revised in its entirety.
Bylaw 822/99	Approved September 1999. Established the Sturgeon Valley Area Structure Plan to guide the long-term development of the Plan area, encompassing approximately 5,060 hectares. The broad vision for the Plan area was to provide land for primarily country residential development while also preserving, protecting, and enhancing the attributes of the rural and natural landscape.

2.0 Existing Conditions

2.1 Demographics

The Starkey Hills OP area is located within the Sturgeon Valley Core ASP (denoted as Valley Core Reserve), as well as within Division 2. According to the 2019 Sturgeon County Municipal Census, Division 2 is the County's most populated with 4,398 residents. Around 21% of the County's population lives within Division 2 and when fully built-out the Sturgeon Valley Core ASP will be home to upwards of 7,000 residents.

2.2 Land Use

The OP area is presently districted as Agricultural (AG) to allow for traditional agricultural uses. Existing land uses adjacent to the OP area include AG to the north, northwest, and east. Residential uses in the form of Country Estate Residential (R2) can be found south and west of the OP Area (Upper Manor Pointe, The Banks, Upper Manor, and Summerbrook).

2.3 Local Amenities

There are no local commercial services located within the Sturgeon Valley ASP or the Starkey Hills OP Area. Local area residents are required to drive to either St. Albert or Edmonton to access commercial services and meet other daily goods and service needs. There is good supply of recreational opportunities within the ASP area, including the Sturgeon Valley Golf & Country Club located approximately 3 KM to the south of Starkey Hills OP and there is convenient access to the Bellerose Riverwalk pathway system. Canadian Forces Base Edmonton Garrison is located approximately 10 KM to the southeast of the OP area, which offers public access to a range of health and wellness services including a library, fitness centre, and a community centre.

2.4 Site Opportunities and Constraints

Several key considerations and constraints have been factored into the initial planning and site analysis process for Starkey Hill OP. Country Estate Residential (R2) located to the south requires contextually sensitive density transitions occur from south to north within the OP Area. Public Utility Lot (PUL) pipelines within the OP area can provide an open space amenity to connect the OP Area and development to the greater open space network within the Sturgeon Valley Core ASP, as well as will work to create strong sightlines and points of ingress and egress. Current constraints within the OP area include site serviceability (water, sewer capacities), developing access points to Starkey Road and Coal Mine Road, and assessing and classifying wetlands that exist within the OP area.

2.5 Historical Features

A desktop Historical Resource analysis of the Starkey Hills OP area was performed in January 2022. This analysis did not identify any historical resources within the immediate area. Therefore, no Historical Resource Assessment is required to support this OP.

2.6 Biophysical Features

Several wetlands are located within the plan area; however most are small and generally ephemeral. Shelterbelts along the northern and western edges of the Plan Area feature several tree species and habitats that buffer development from public rights-of-way. Pipeline ROWs along the western and southern edges of the Plan Area serve as linear greenways as well as buffers from existing adjacent development.

2.7 Utility Infrastructure

As there is currently no development within the Starkey Hills OP area, all utility infrastructure is required. Starkey Hills OP will be a fully serviced, urban neighbourhood designed and constructed in accordance with Sturgeon County Engineering Standards and the County's Infrastructure Master Plan.

2.7.1 Water Supply and Distribution

As illustrated in **Figure 4**, there are two proposed water connections. The first connection will tie to the existing 200mm water stub located in the Starkey Road R/W, East of Manor Pointe Court, south-east of the OP lands. A second connection to the north-west will also be installed as part of the first phase of development, connecting to the existing 200mm water stub located in the Coal Mine Road R/W, North of Manor Pointe Place.

A Hydraulic Network Analysis (HNA) has been completed by AECOM Canada Ltd. The HNA has concluded that the onsite water mains are to be 200mm diameter. During Phase 1 and full build out, the water system will not meet the 90L/s residential fire flow requirement stated in the Sturgeon County Design and Construction Standards. The County has acknowledged that not achieving the 90L/s residential fire flow requirement regardless of higher density is acceptable. Commercial lands will not meet the required fire flows or minimum 250mm service size, but can proceed if a caveat is placed to accommodate the 220L/s fire flow requirement via onsite improvements (onsite storage/booster pump as required).

2.7.2 Sanitary Sewer Supply and Distribution

The Starkey Hills sanitary system, as shown in **Figure 5A**, will feature gravity mains connected to a proposed lift station located in the southeast corner of the Outline Plan area. The majority of the sanitary pipe connecting the proposed lift station and existing sanitary system within E. Estates Way will be by a gravity main, along with a small section of forcemain being utilized to obtain proper clearance under existing pipeline infrastructure south of the lift station location. Preliminary routing has been proposed within the Sanitary Sewer Assessment REV005 prepared by Sameng Inc, dated November 28th 2024. Exact routing, size and alignment will be determined during detailed design. Construction of the lift station and forcemain will be required as part of Phase 1.

To manage odours in the area, odour control equipment such as chemical injection equipment or hydrogen sulfide stripping systems will be required as part of the lift station. Full details of the odour mitigation will be confirmed as part of the lift station design process during the detailed design of Phase 1. As part of the lift station design, the Consulting Engineer will prepare a report identifying the most cost-effective lift station equipment and arrangement. The developer will be obligated to fund the design and construction of the lift station facility, with the County overseeing and guiding the design and construction process.

Detailed information regarding the downstream sanitary system, including the proposed Starkey Hills flows, existing capacity constraints, required offsite upgrades, and their timing, are detailed in the Sanitary Sewer Assessment. The assessment evaluated critical downstream pipes from the Starkey Hills connection to the Bellerose Lift Station, highlighting capacity constraints anticipated as development progresses. All necessary offsite improvements recommended within the Sanitary

Sewer Assessment must be designed and constructed by the developer to ensure proper serviceability for the Outline Plan area and downstream system.

Figure 5B illustrates the downstream route to the Bellerose Lift Station and identifies the required improvements based on phasing.

A pre-existing capacity issue has been identified at the Greystone Lift Station tie-in point, where it discharges into the gravity main upstream of the Bellerose Lift Station. This constraint is due to the oversized Greystone pumps, which cause section D-8 to exceed capacity and section D-9 to reach capacity during wet weather events when the Greystone pumps are operating. To address this, prior to Phase 1 of Starkey Hills, the existing 60L/s pumps can be replaced with 5L/s pumps to alleviate downstream capacity concerns.

Phase 3 will trigger the final set of downstream upgrades. Sanitary pipes R1, R2, R3, R4, D1, D8, D9 will either require the twinning of the existing mains with a 250mm pipe, or in areas where space constrains limit open cut construction, pipe bursting may be a more feasible solution. When pipe bursting is used, the 200mm main will be replaced with a 300mm main, this is likely to be pursued within sections R1 through to R4.

The Starkey Hills lift station and piped connection to the existing system will be sized for the ultimate buildout of the development meeting all GMSS requirements. Additionally, the pumping capacity will be adjusted to align with the peak flow allowable based on timing of the downstream offsite capacity upgrades. To achieve the changes in pumping capacity at Phase 1 of development there will be two pumps installed within the lift station to handle the required peak flows of Phase 1 & Phase 2. At Phase 3, in conjunction with the required downstream offsite upgrades an additional third pump will be added to the lift station in order to handle the required peak flows of the ultimate build out of Starkey Hills. Access to the lift station will be via the internal roadway system and utilize the emergency access road/walkway within the PUL containing the water and sanitary main connections. As stated in Sturgeon County GMSS, all anticipated above grade components will be housed in a prefabricated building which will have architectural treatment to abide by the subdivision's architectural control guidelines. Although access to the wet well shall not be from within the building. For further information on the lift station and forcemain, refer to the Sanitary Sewer Assessment.

It is important to note that the assumed sanitary flows for the existing system and proposed development may differ form actual flow rates. To address this, Sturgeon County will be conducting flow monitoring at the Bellerose Lift Station to further access the area. Should monitoring data reveal the need for adjustments to the existing and/or proposed flow generation rates, updates to the previous sanitary reports may be required, potentially leading to a redesign of the proposed offsite improvements, including revisions to their timing.

2.7.3 Stormwater Network

Please refer to the enclosed Stormwater Management Report and Downstream Drainage Assessment completed by Northwest Hydraulic Consultants.
As illustrated in **Figure 6**, the proposed stormwater management network will flow via gravity towards a Stormwater Management Facility (SWMF) located in the northeast corner of the OP area. Inlets are proposed at the western edge of the SWMF. The SWMF discharge from the OP area will be released at a below pre-development controlled rate towards the existing drainage channel crossing Coal Mine Road through a 600mm culvert. Drainage will follow this channel and ultimately terminate to the northeast at the Sturgeon River.

There is approximately 85ha of undeveloped existing drainage from the North & Northwest that originally drained through the Starkey Hills development. This offsite catchment area will now be captured and conveyed via a storm main within the OP area to the SWMF. These offsite flows will then be released at a controlled pre-development flow rate of 8.3L/s/ha, discharging downstream through the existing drainage channel. During a major storm event, to avoid over-toping of the existing 600mm culvert crossing Coal Mine Road an additional 600mm CSP culvert will be installed parallel to it.

Stormwater within the development will be conveyed via curb and gutter towards catchbasins and into the storm mains that will direct drainage into the SWMF. Storm mains will be designed to convey a 1:5 year storm event. Storm mains servicing areas greater than 30ha will be designed to convey 1.25 times the 1:5 year storm event.

Foundation drainage systems must be installed to address infiltration into basement areas. Where basement excavation is below or near the perched groundwater level an under-slab drainage system is recommended. Detailed design of drainage systems to be undertaken by a qualified Mechanical Engineer, further information can be found within the Geotechnical Report. Areas where the water table is higher than basement foundation will require an underground storm service tied directly to the storm main, these areas will be vetted out during detailed design when site grading information is available.

The Starkey Hills development is in close vicinity to the Edmonton Garrison Heliport. As part of the detailed design for the project, the developer will engage the Department of National Defence (DND) to confirm if the proposed SWMF is within the Edmonton Garrison Heliport Zoning Regulation area. The developer will ensure proper bird mitigation efforts are achieved and are to the satisfaction/approval of the DND.

2.8 Transportation Network

Please refer to the enclosed Traffic Impact Analysis completed by D&A Paulichuk Consulting.

As illustrated in **Figure 3**, Starkey Hills OP is bounded by Coal Mine Road (TWP Road 544C) to the west, Coal Mine Road (TWP Road 544D) to the north, and by Starkey Road (RNG RD 251) to the east. The primary access to development will be to the east at Starkey Road via a collector style roadway. As development progresses a secondary access onto Coal Mine Road (TWP Road 544D) to the north will be installed. The primary roadway type within the OP will be a Neighbourhood Residential Roadway, in accordance with Sturgeon County Engineering Standards.

The roadway fronting along the proposed commercial area in the OP's northeast should be designed to accommodate additional traffic volumes that are likely to occur, which could include additional traffic and need for on-street parking in some areas. Additionally, to ensure a safe and comfortable pedestrian environment and general compatibility with active forms of transportation, traffic calming measures could be considered at key roadway crossings.

Three key intersections were analyzed:

- The proposed east access onto Starkey Road will initially require a Type IIIA intersection with delineation illumination as part of Phase 1. Ultimately this intersection will be upgraded to a Type IVA intersection as development progresses (Phase 4 or when traffic warrants, whichever comes first). Signalization is not warranted for the next 20 years at this intersection.
- The existing intersection between Coal Mine Road and Starkey Road will initially require a Type IIB intersection with no illumination or signalization until traffic warrants a Type IIIA, or the Phase 3 northern access is completed, whichever comes first. There is an existing sight distance deficiency to the north for Single Unit Trucks and Buses which can be rectified by lowering the posted speed limit on Starkey Road at this location.
- The proposed north access onto Coal Mine Road will be deferred until Phase 3 of development. As part of Phase 3 a Type IIA intersection with an exclusive right turn lane (EB to SB) will be required at this location. Illumination and signals are not warranted within the next 20 years at this intersection.

As part of Phase 3 of development the section of Coal Mine Road between the north access and the Starkey Road Intersection will be upgraded to a Class II Cross section in accordance with the 2023 GMSS.

The developer is responsible to fund, design, and construct the above required offsite road and intersection improvements to support the OP area.

Roadway widening R/W dedication has been allocated along the permitter of the OP area for the Starkey Road and Coal Mine road R/W's. Starkey Road will consist of a 14m R/W widening and Coal Mine Road will consist of a 10m R/W widening, these are based on the widenings required at the adjacent developments to the South and West.

3.0 Starkey Hills Development Concept

3.1 Vision

The Sturgeon Valley Core ASP is characterized by scenic rolling countryside vistas, quality farmland, ecologically important watercourses and wetlands, and attractive, safe, multi-lot residential subdivisions. Starkey Hills will be a community that builds upon these characteristics by continuing to preserve local architectural traditions and housing typologies through high quality design and continuity with other development within the broader ASP area.

Starkey Hills will provide new opportunities for urban residential living in Sturgeon County while also introducing commercial land uses to enhance access to services for current and future residents. Starkey Hills will articulate the principles of complete community design through its blend of residential and commercial land uses, pedestrian-friendly roadway, and open space networks, and will uphold existing local values of quietness, privacy, safety, and ecological conservation by maintaining contiguousness with country residential uses in the vicinity.

3.2 Guiding Principles

Several guiding principles have been established to help guide Starkey Hills' long-term development and to ensure that the vision described above is achieved.

Character

Starkey Hills will build upon and continue local architectural traditions of high-quality design and appropriately scaled development, primarily consisting of single-family homes on generously sized lots that help to create sense of place and a serene, family-oriented community.

Connectivity

Starkey Hills will leverage interconnecting pedestrian walkways and open spaces for residents to utilize for recreation, leisure, and broaden access to commercial services via active transportation, supporting active, balanced lifestyles.

Continuity

Starkey Hills will logically continue development patterns and typologies within the broader Sturgeon Valley Core ASP area within the Manor Pointe Estates residential development area by effectively interfacing with and building upon existing development in the area.

Consistency

Starkey Hills will be a guiding example for future Outline Plans within the Sturgeon Valley Core ASP by adhering to the updated Edmonton Metropolitan Regional Growth Plan Special Study Area and other recently amended Sturgeon Valley ASPs that establish policies for density, design, and environmental conservation.

3.3 Land Use

3.3.1 Overall Development Concept

The future land use concept for the Starkey Hills OP includes a mix of uses, comprised of low-density residential, commercial, and parks and open space. The overall land use concept is illustrated in **Figure 2**.

This OP proposes a mix of residential and commercial land uses to provide a greater mix of land uses within the County and to provide current and future residents within the ASP area with access to commercial services without having to travel to other municipalities. The proposed mix will also help to create a more financially sustainable tax split between residential and non-residential uses by including commercial uses along prime frontage on Starkey Road.

There are several pipeline rights-of-way (ROWs) located in the southern and southwestern portion of the OP area that stretch parallel to Manor Point Estates and an unnamed road ROW. The location of the pipeline ROWs constrains development in these areas to passive/active recreational uses (i.e. Parks and Open Space). There are also multiple abandoned wells within the OP area. Walkways and future surface parking will be utilized in areas where these wells are located.

It is the intention of this Plan to provide a contextually sensitive density transition from the existing Country Estate Residential development to the south (Manor Pointe Estates). Increasing density should occur moving from south to north, away from existing residential development, and be mindful of the surrounding context and nature of current development within the Sturgeon Valley Core ASP area.

It is noted that the Parks and Open Spaces within the OP area act as natural, contiguous buffers between the Existing Country Estate Residential areas and the proposed low-density residential blocks.

3.3.2 Residential

Residential uses will be located throughout the OP area and will be similar in form and density to typologies proposed within the Sturgeon Valley Core ASP, specifically low-density single-family housing. The proposed developable residential area is 21.0 hectares, or approximately 56% of the gross developable area within the OP. Low-density residential will consist of Front Drive product types that predominate residential development within the Sturgeon Valley Core ASP area currently. This OP, in accordance with the EMRGW, Appendix G – Sturgeon Valley Special Study Area for the Metropolitan Area, will meet the 2-20 du/nrha density target by providing an overall density of 20 du/nrha.

3.3.3 Commercial

Small-scale commercial uses will be located in the northeast corner of the OP area, providing a mixture of goods and services, as well as employment opportunities, in

the immediate area and surrounding region. A total of 0.99 hectares, or approximately 2.6% of the gross developable area of the OP, has been denoted for commercial uses. Commercial development is an important component to the OP as it will both help meet local resident need for goods and services and will support the County in working to achieve a sustainable balance between residential and non-residential land uses over the long-term. Commercial development at this location within the OP area will also benefit from strong exposure and access to vehicles traveling on Starkey Road.

3.3.4 Parks and Open Space

Parks and open spaces within the OP area will provide opportunities for passive and active recreation options, as well as will include a SWMF adjacent to the proposed commercial land use in the Plan's northeast. Pipeline ROWs and Public Utility Lots (PULs) will be utilized to provide a ribbon of open space along the southern and western portions of the OP area that will be made contiguous by strategically locating park and open space uses in the form of Municipal Reserve (MR). In total, 5.08 hectares of land is designated for parks and open space uses, or approximately 13.5% of the OP's gross developable area.

3.3.5 Roadways

The primary roadway type within the OP area is to be an internal local public urban roadway at a width of 9.0 metres (20 metre ROW), with wider, 12.5 metre (25 metre ROW) roadways provided at interfaces with Starkey Road to the east and TWP Road 544D to the north. Roadways will be constructed according to the County's General Municipal Servicing Standards for Subdivision Roadways.

3.3.6 Stormwater Management

Stormwater will be managed via gravity storm piping towards a Stormwater Management Facility (SWMF) located in the northeast corner of the OP area. Inlets are proposed at the northwest and southwest corners of the SWMF and flows will be released at a controlled rate using a two-orifice system towards the existing drainage channel that crosses Coal Mine Road north.

3.3.7 Water and Sanitary Management

The proposed water network will be provided by two proposed connections. The first will tie to the existing 200mm water stub located in the Starkey Road R/W, east of Manor Pointe Road. The second will connect to an existing 200m water stub located in the Coal Mine Road R/W, north of Manor Pointe Road.

The sanitary sewer will flow to the southeast. A lift station, small section of force main and gravity pipe will be required to connect Starkey Hills with the existing 200mm sanitary main within E. Estates Way which conveys sanitary flows to the Bellerose Lift Station via a gravity network. The exact routing and alignment will be determined during detailed design.

3.3.8 CPTED

The Land Use Concept has been prepared using the principles of CPTED, especially for public areas including Parks and Open Spaces planned throughout the plan area. The proposed roadway network provides an interconnected network of travel throughout the area, with development oriented towards roadways to provide opportunities for natural surveillance of public spaces along roadways. Front setbacks will be encouraged to meet minimum standards, and the incorporation of front porches, verandas and living areas facing public ROWs will be encouraged to maximize unobstructed views of the areas.

Pedestrian movement has been prioritized throughout the plan area, allowing residents to travel to neighbourhood nodes safely and directly through dedicated, well lit pedestrian walkways.

One commercial area is proposed to be located at one of the main entry points to the neighbourhood, and will be designed to increase visibility to and from uses through architectural and landscape design. The area will serve as a gathering node for both residents and the traveling public, and will provide a safe, well lit space that further increases natural surveillance opportunities within this portion of the area.

Parks and Open Spaces, including Pipeline ROWs and the SWMF, will all feature pedestrian infrastructure that is safe and well lit to encourage year round use. Landscaping and lighting will be incorporated where feasible and will be pedestrian-scaled and reduce hiding spots for perceived negative activity to take place. Parks have been located adjacent to residential development and along pedestrian linkages to ensure visibility and use from surrounding residents. Multiple access points to Parks, Open Spaces and pedestrian linkages will be proposed to maximize safety, and will be located to provide convenient access for residents.

3.4 Land Use Policies

In addition to existing planning and design principles and policies within the Sturgeon Valley Core ASP, the following policies have been developed to provide additional detail to achieve the proposed development concept for the Starkey Hills OP. The following policy should be considered by the County when assessing to what extent proposed development is in alignment with these policies, with ASP policies taking precedence should there be any discrepancies.

3.4.1 Residential

- **3.4.1.1** Residential development should consist primarily of single-family homes that incorporate high-quality architectural features characteristic of existing development in the Sturgeon Valley Core
- **3.4.1.2** Use of naturalized species and low-impact design is encouraged for residential landscape designs
- **3.4.1.3** To mitigate fire risk, residential development should consider integrating FireSmart design techniques and materials in architectural finishes and landscape designs
- **3.4.1.4** Innovative servicing, site design, and landscaping technologies should be explored where feasible to minimize impacts of development

3.4.2 Commercial

- **3.4.2.1** Commercial development in the Starkey Hills OP should be oriented primarily towards Starkey Road and appropriate buffer treatments should be applied in areas where commercial uses abut residential development
- **3.4.2.2** Commercial development should cater primarily to residents within the Sturgeon Valley Core ASP and be of a scale and type to enable local residents to meet their day-to-day needs
- **3.4.2.3** Commercial development should incorporate lighting and architectural features that seek to minimize interference with residential development and light pollution
- **3.4.2.3** Commercial development should be accessible by pedestrians and cyclists and feature sidewalks and other amenities where appropriate

3.4.3 Public Realm

- **3.4.3.1** Parks and open spaces should be located within walking distance from residential development and connected through either a sidewalk system or via the roadway network
- **3.4.3.2** Parks and open spaces should consider placemaking and urban design elements where appropriate to create sense of place, active open spaces, and assist in wayfinding
- **3.4.3.2** Parks and open spaces should incorporate low-impact design principles where appropriate and consider use of native vegetation
- **3.4.3.3** Gateway features should be considered for placement at ingress/egress locations, particularly at Starkey Road
- **3.4.3.4** An appropriate buffer between development to the south and the OP area shall be achieved by providing a contiguous stretch of green space
- **3.4.3.5** A naturalized edge shall be maintained around the proposed SWMF to enable active and passive recreation

3.4.4 Transportation

- **3.4.4.1** Where appropriate, traffic calming design measures should be incorporated into the roadway network to support shared usage by pedestrians, cyclists, and vehicles
- **3.4.4.2** Pedestrian crossings should be considered for ingress/egress intersections at Starkey Road and the proposed commercial area to ensure pedestrian safety

4.0 Land Use Statistics

Land Use	Area (ha)	%
Gross Area	**39.21**	-
Road R/W Widening Dedication	1.47	3.7
Gross Developable Area	**37.74**	**100.00**
Municipal Reserve (MR)	5.08	13.5
Parks and Open Space	2.58	6.8
Pipeline Right of Way	2.50	6.6
Public Utility Lot	0.30	0.8
Transportation		
25.0 m Collector Roadway	0.43	1.1
20.0 m Local Roadway	7.45	19.7
Infrastructure & Servicing		
Stormwater Management	2.57	6.8
Commercial	0.99	2.6
Total Non-Residential Area	16.82	44.4
***Net Residential Area (NRA)**	20.92	55.6

Residential Land Use, Dwelling Count & Population

Population Density (ppnrha): 66

Unit Density (upnrha): 20.0

Student Generation

Land Use	Area (ha)	Units / ha	Units	% of NRA	People / Unit	Population
Low Density Residential	20.92	20.0	420	100	3.3	1,386
Total Residential	**20.92**	**20.0**	**420**	**100**	**3.3**	**1,386**

System	Elementary (K-6)	Junior High (7-9)	Senior High (10-12)	Total
Public	59	30	30	119
Separate	30	15	15	60
Total	**89**	**45**	**45**	**179**

5.0 Implementation

5.1 Phasing Plan

As illustrated in **Figure 7**, the proposed phasing for the Starkey Hills OP is to commence development first adjacent to Starkey Road, moving from top to bottom, generally, and from east to west. The phasing plan is preliminary in nature, and subject to change based on market demands.

5.2 Policy Coordination

As per the Sturgeon Valley Core ASP, redistricting is to occur through the County's Land Use Bylaw rather than be pre-districted within this OP. Following OP approval, redistricting will be pursued. Preliminary districts identified as appropriate for the development concept presented herein include R4 – Hamlet Serviced District and C2 – Local Commercial District. It is noted that the County is currently working through Land Use Bylaw updates/amendments, which may impact the LUB districts for which this development pursues. Following redistricting, subdivision will then generally occur per the staging plan illustrated and described above, with the first stages of development occurring within the eastern portion of the OP. Other important policies that will be consulted at the subdivision stage include the County's Infrastructure Master Plan to identify requirements for development of water, wastewater, stormwater, and road networks, as well as the County's General Municipal Servicing Standards.

6.0 Planning Process

6.1 Public Consultation Process

An initial Open House was held on May 25th, 2022 between 6-8pm at the Morinville Rendez Vous Centre (9913 104 Street, Morinville), inviting adjacent landowners to view proposed land use concepts, servicing and other pertinent information related to the Outline Plan process. Representatives from the landowner and consultant team were present to answer questions, and display boards showed the concepts being proposed for the site. Advertising for the Open House was done through the St. Albert Gazette for two consecutive weeks in accordance with the requirements of the Municipal Government Act (S. 606). Feedback forms were provided to attendees with an encouragement to send feedback directly to the project team.

A second Open House will be held on December 17th, 2024 at the same location as the previous Open House. Advertising is once again being done through newspaper advertisements, letters dropped off at adjacent landowners properties, signage and online advertising. All attendees from the first Open House that provided the project team with their contact information were also sent direct invitations to the Open House. Feedback forms will once again be utilized to capture feedback from attendees and surrounding residents.

A Public Hearing will be scheduled in accordance with County policies to round out engagement efforts once the application reaches that point.

6.2 Public Consultation Findings

A What We Heard Report dated May 31st, 2022 was prepared that summarizes the findings of the 2022 Open House and submitted to the County as part of the application process. A total of

fifteen members of the public attended the Open House, and seven feedback forms were received, in addition to one email seeking additional information prior to the Open House.

Generally, the majority of attendees expressed support for the proposal, with some concerns raised. Specifically, support was shown for the size of lots and the proposed density, as well as the amount of parks and open spaces that were planned along the southern boundary to separate existing residents from the proposed development.

Concerns raised related to the impact on existing infrastructure (drainage, specifically), as residents of Manor Pointe experience issues related to drainage consistently during major rainfall events. Some concerns related to access locations to the proposed development were cited, as well the impact of the development on agricultural lands and surrounding property values. Responses were given to these questions by project team members, and where feasible, changes were incorporated into the plan to reflect the feedback received. Details of the feedback and findings of the event can be found in the What We Heard Report in the Appendix.

This section will be updated following the second Open House.

7.0 Policy Framework

7.1 Edmonton Metropolitan Region Growth Plan

The Edmonton Metropolitan Region Growth Plan (EMRGP) is the preeminent planning document in the Edmonton Metropolitan Region, within which the County is situated. The EMRGP is overseen by the Edmonton Metropolitan Region Board and this Growth Plan presents a 30-year plan that establishes regional policy areas and other objectives across six major topics: economic competitive and employment, natural living systems, communities and housing, integrating land use and infrastructure, transportation, and agriculture.

The EMRB amended the EMRGP by adding a specific appendix for the Sturgeon Valley Special Study Area (Appendix G), which involved collaboration between the City of Edmonton, City of St. Albert, and Sturgeon County to develop policy and objectives for the Special Study Area in 2019. The overall vision for the Special Study Area is to enable contiguous, compact development while ensuring appropriate transitions between agricultural areas and the broader metropolitan region, dividing the Area into seven separate sub-areas.
The OP area falls within 'Area C', identified for residential development at a density consistent with the lowest Rural Tier minimum residential density identified in the EMRGP (20 du/nrha). To ensure alignment between the EMRGP and County statutory planning documents, amendments were made to the County's Municipal Development Plan, the Sturgeon Valley Core Area Structure Plan within which this OP is situated, and the development of a new Sturgeon Valley South Area Structure Plan. This OP aligns with the policies and objectives established within the EMRGP and subsequent documents in the County's overall planning hierarchy that will be outlined below.

7.2 Sturgeon County Municipal Development Plan

The Sturgeon County Municipal Development Plan (MDP) is the overarching statutory plan for the County that outlines general objectives and policies for lands within the Sturgeon Valley Core ASP and lands identified in this OP. The land use concept and policies presented herein

align with objectives and policies articulated within the MDP, including principles related to responsible development practices, creating attractive and complete communities, valuing sites of environmental significance, ensuring environmental risk management, and ensuring municipal fiscal responsibility by incorporating some commercial land use within the OP. The MDP was amended in 2021 in response to the EMRGP and Valley Special Study Area Policies that were introduced to ensure alignment.

7.3 Sturgeon County Land Use Bylaw

Sturgeon County's Land Use Bylaw (LUB) regulates land uses within the County. The land use types identified in this OP align strongly with existing land use districts outlined in the LUB and the general land use pattern identified. Any redistricting of land within the OP area must be consistent with the policies and land use designations outlined in the Sturgeon Valley ASP and the LUB. It is noted that the County is currently working through Land Use Bylaw updates/amendments, which may impact the LUB residential districts for which this development pursues.

7.4 Sturgeon Valley Core Area Structure Plan

The Sturgeon Valley Core Area ASP outlines the proposed sequence of development for the broader area within which this OP is situated, identifying future land uses and general location of infrastructure and public utilities. Site-specific details are not specified within the ASP, requiring additional detail to be provided regarding individual subdivisions, thus the development of this OP. Residential development is identified as the predominant land use for the Plan area, with potential for small-scale compatible commercial enterprises as well.

The OP area is denoted as Valley Core Reserve and development priority in these areas is given to extending residential subdivision development with full municipal servicing. Redistricting is to occur following approval of OPs. The goal for Valley Core Reserve lands is to enable fully serviced multi-lot residential development while being cognizant of impacts on existing infrastructure and residential communities, establishing a maximum density of 20du/nrha as per the EMRGP. The land use concept and land use policies presented herein align strongly with the objectives and policies established in the Sturgeon Valley Core ASP, particularly those related to residential development, environmental protection, parks, open space, and trails.

7.5 Sturgeon County Open Space Planning

There are several key environmental features, open spaces, and other environmental reserve areas within the Sturgeon Valley Core ASP area, including the Sturgeon River. Balancing community desire to see more trails be developed and neighbourhood-scale open spaces, the County is working to develop a comprehensive open space plan. At the time of this OP development, this open space plan has yet to be adopted. However, the proposed land use concept presented in **Figure 8** incorporates parks and open space areas strategically to create a contiguous green network in the OP's south. The proposed SWMF location is based on the existing hydrology in the plan area, as the low point of the OP area.

7.6 Sturgeon County Infrastructure Master Plan

Adopted in 2019, the County's Infrastructure Master Plan provides a framework and guidance for servicing across the entire County, including lands within the Sturgeon Valley Core ASP and

this OP. The Infrastructure Master Plan focuses on key linear infrastructure components including water, wastewater, stormwater, and transportation systems. This Master Plan should be consulted during detailed planning and engineering work for linear infrastructure within the OP area.

8.0 Additional Reports

8.1 Phase 1 Environmental Site Assessment

Prepared by R.P.S. Environmental Consulting Ltd in 2021. The site is a vacant agricultural parcel, with records of decommissioned and reclaimed wellsites, that are not APECS (Areas of Environmental Concerns). The report concludes that there are no major potential sources of environmental concern due to historical or current land use of the site nor those on adjacent properties (off-site), therefore RPS Consulting does not recommend conducting any further investigation on the site (Phase 2).

8.2 Biophysical Assessment

Prepared by Basin Environmental in 2022, the Biophysical Assessment studies the lands in existing format and found the presence of eight wetlands, one of which had the potential to be crown-claimed. Alberta Environment and Parks (AEP) confirmed in January 2022 that the central wetland does not meet the criteria for Crown ownership claim. There are also potentially up to seven ephemeral marshes found within the area. All will be verified through field work during growing seasons and further refined through submission of an ABWRET-A document to AEP.

In addition, shelterbelts surrounding the west and north sides of the area are intended to be retained wherever possible. The western and southern boundaries of the plan area are buffered from urban development through pipeline corridors and enhanced with park spaces.

8.3 Wetland Assessment & Impact Report

A Wetland Assessment & Impact Report was completed by Basin Environmental (Oct 2022). The report indicates this development is not in an environmentally significant area. The FNC submission has cleared with no consultation required. An application for wetland disturbance was submitted to AEP, however, approval is on hold until detailed plans of the proposed Stormwater Management Facility and a Water Act application has been submitted. These items will be submitted as part of the detailed design of Phase 1.

Two Wetlands will be retained as part of the Municipal Reserve (MR). The development will result in the removal of 3 wetlands, 10 ephemeral water bodies and 3 ephemeral drainages. The report recommends that a payment is made to AEP via the in-lieu fee program to account for the impacts of the removed wetlands. The anticipated fees for the removal of wetlands are $45,324.

8.4 Traffic Impact Assessment

D&A Paulichuk Consulting completed a Traffic Impact Assessment (Oct 2022) to analyse the access points and impact Starkey Hills will have on Starkey Road (Range Road 251) and Coal Mine Road (Twp. Rd. 544D) and recommended the below improvements as development progresses.

During Phase 1 the east access adjoining Starkey Road will require a Type IIIA intersection treatment. The north access will not be required until future phases are developed. The intersection of Coal Mine Road and Starkey Road will require a Type IIB intersection treatment during Phase 1. The existing site distance to the north at the Starkey Road and Coal Mine Road intersection is sufficient for passenger vehicles but does not meet the needs for Single Unit Trucks and Busses, this can be rectified by lowering the posted speed limit.

Ultimately the east access will require a Type IVA intersection treatment as part of Phase 4. The north access will require a Type IIA intersection treatment as part of Phase 3. Coal Mine / Starkey Road intersection will utilize a Type IIIA treatment as part of Phase 3. Alternatively, the Coal Mine / Starkey Road intersection can be converted into a roundabout which will help with site distance concerns in the area.

8.5 Geotechnical Analysis

Shelby Engineering completed Geotechnical Investigations in 2006 and 2022, that found conditions to be generally feasible for typical residential development. Thirteen test holes were drilled, finding combinations of clay and silt in the majority of test holes. Topsoil depth generally ranged from 0.2m to 0.9m deep. Foundation drainage systems must be installed to address infiltration into basement areas. Where basement excavation is below or near the perched groundwater level an under-slab drainage system is recommended. Detailed design of drainage systems to be undertaken by a qualified mechanical engineer, refer to Geotech report for more information.

8.6 Stormwater Management Concept

Northwest Hydraulic Consultants completed a Stormwater Management Report (March 2023). The proposed SWMF will manage storm runoff for the project area and approximately 85 ha of offsite catchment area to the northwest. The SWMF is designed for a 1:100 year rainfall event, with a maximum allowable discharge of 1.5L/s/ha for onsite flows and 8.3L/s/ha for offsite flows. The preliminary live storage volume of the SWMF was modelled at 44,300 cu.m. The subject lands currently drain to the north-east into an existing drainage channel, which drains north-east approximately 1.5 kilometres, discharging into the Sturgeon River. The SWMF will outlet into an existing culvert (#1) crossing Coal Mine Road (Township Road 544). As part of the development an additional culvert will be installed beside the existing culvert crossing Coal Mine Road.

8.7 Downstream Drainage Assessment

Northwest Hydraulic Consultants has completed the Downstream Drainage Assessment Report (June 2023), as requested by the County to help clarify the downstream impacts the Starkey Hills development may create. The Assessment indicates that two existing properties will be impacted by the 1:100 year flows through the existing watercourse. The first property is directly north of the project area (25104 Coal Mine Road) and the second property is near the downstream end of the existing watercourse (54523 Range Road 250A). The flooding risks will be localized and limited to auxiliary structures within the properties (storage shed, garage building, etc). The risk of flooding appears to be created by onsite improvements within the

indicated properties that obstruct the natural watercourse. Mitigation of flood risk within these properties would require onsite modifications to create a proper drainage routes.

Pre-development 100-year discharge has been calculated utilizing regional analysis based on the historical data from the Water Survey of Canada. The hydrometric gauge stations were selected based on factors such as proximity, basin size, basin landcover, topography, and climate condition. A flood frequency analysis was performed for each hydrometric gauge station and the Pearson Type 3 probability distribution provided a good fit for the data of all selected stations to estimate the 100-year peak discharge for each station. These results were correlated with drainage areas, data points were fitted to a curve which is defined by a modified Creager's equation. The Creager equation was modified from the original as the equation represented a large number of flood peaks from U.S rivers and a smaller number from other countries, where as the modified equation represents "unusual flood peaks" that were observed worldwide. The modified equation is also adjusted to represent a metric system whereas the original equation is for imperial units.

With this analysis and by lowering the allowable pre-development discharge from the SWMF from 2.5L/sha to 1.5L/s/ha for the Starkey Hills OP area, it was determined that this will help reduce downstream risks of flooding. 100-year discharges in the downstream tributary will be reduced by around 10% to 29% vs the pre-existing 100-year drainage discharges. Starkey Hills will not eliminate the existing drainage concerns but will help to reduce the pre-existing flood levels.

8.8 Hydraulic Network Analysis

A Hydraulic Network Analysis (HNA) has been completed by AECOM Canada Ltd (March 2023). The HNA has concluded that the onsite water mains are to be 200mm diameter. At full build out, the Average Day Demand (ADD) ranges from 510kPa to 552kPa which is above the minimum acceptable pressure of 350kPa. The Peak Hour Demand (PHD) ranges from 481kPa to 521kPa which is above the minimum acceptable pressure of 350kPa. During Maximum Day Demand (MDD) plus fire scenario, the system can provide an available fire flow between 49L/s and 51L/s which is below the indicated standards of 90L/s for residential and 190L/s for commercial lands. The County has acknowledged that not achieving the 90L/s residential fire flow requirement regardless of higher density is acceptable. It is noted that Commercial lands will not have the minimum 250mm water main size. Increasing the pipe size does not significantly increase the available fire flow and is not recommended with the existing tie in being a 200mm water main. Commercial lands can proceed if a caveat is placed to accommodate the 220L/s fire flow requirement via onsite improvements (onsite storage/booster pump as required).

8.9. Sanitary Sewer Assessment

The Sanitary Sewer Assessment REV005, dated November 28, 2024, prepared by Sameng Inc., assess the sanitary impacts of the Starkey Hills development, provides information on the tie in connection (lift station and piping to existing sanitary system) and identifies capacity constraints and necessary upgrades downstream of the proposed Starkey Hills Lift Station to the Bellerose Lift Station.

A pre-existing condition was identified at the Greystone Lift Station discharge point within the gravity main upstream of the Bellerose Lift Station. This constraint occurs when the Greystone Lift Station pumps during peak wet weather flows. To address this issue during Phase 1 of the development, the existing oversized Greystone pumps will be replaced, reducing the pump flows from 60L/s to 5L/s.

In Phase 3, the downstream gravity system will experience additional capacity concerns. These constraints will be mitigated by either twinning or upsizing the existing mains in sections R1, R2, R3, R4, D1, D8 & D9. Twinning, using a 250mm main, will be implemented where space permits open cut construction techniques. In areas where open cut construction may not be feasible, specifically sections R1, R2, R3 & R4, pipe bursting may be used, replacing the existing 200mm main with a 300mm main.

The lift station and tie in connection to the existing system will be constructed at Phase 1 and sized for the ultimate buildout of the development, meeting all GMSS requirements. At Phase 1, two pumps will be installed in the lift station to handle peak flows of Phase 1 & 2. At Phase 3, a third pump will be added to handle peak flows of ultimate development in conjunction with the required downstream offsite upgrades.

For more detailed information on these offsite improvements, lift station and connection to existing system, refer to the Sanitary Sewer Assessment. All recommended offsite improvements, lift station and connection to existing system must be designed and constructed by the developer to ensure proper serviceability of the Outline Plan area and the downstream system.

8.10 Traffic Noise Assessment

A Traffic Noise Assessment was completed by Triton Environmental Consultants Ltd. The model utilized the predicted 2044 pm peak traffic counts estimated within the TIA for the intersection of Starkey Road, Coal Mine Road and Richfield Road. The results indicate that a predicted noise level of 61dBa at the receptor location which is below the maximum County target level of 65dBa. If the traffic counts are doubled the predicted noise level will be 64dBa.

FIGURES

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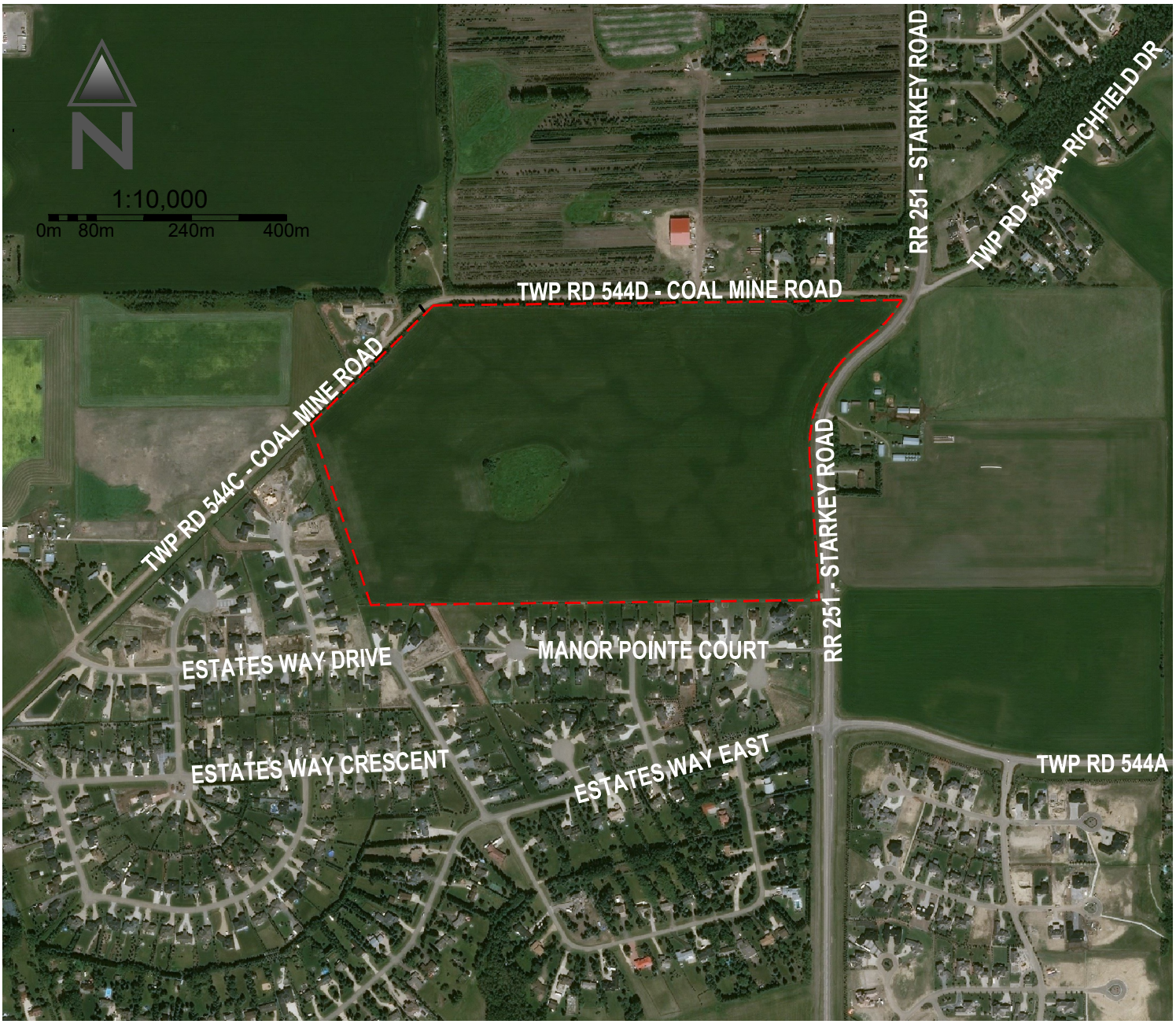

OUTLINE PLAN BOUNDARY

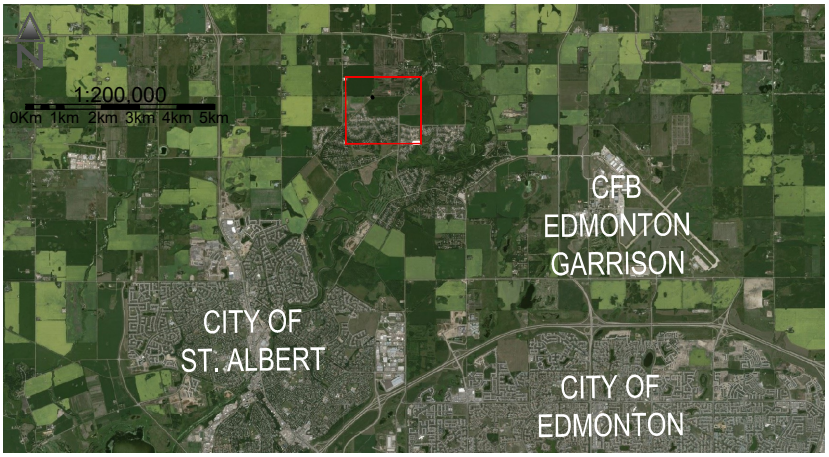

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FIGURE 1 - KEY PLAN

RIVER LOT 63 – STURGEON COUNTY
NOVEMBER 2024

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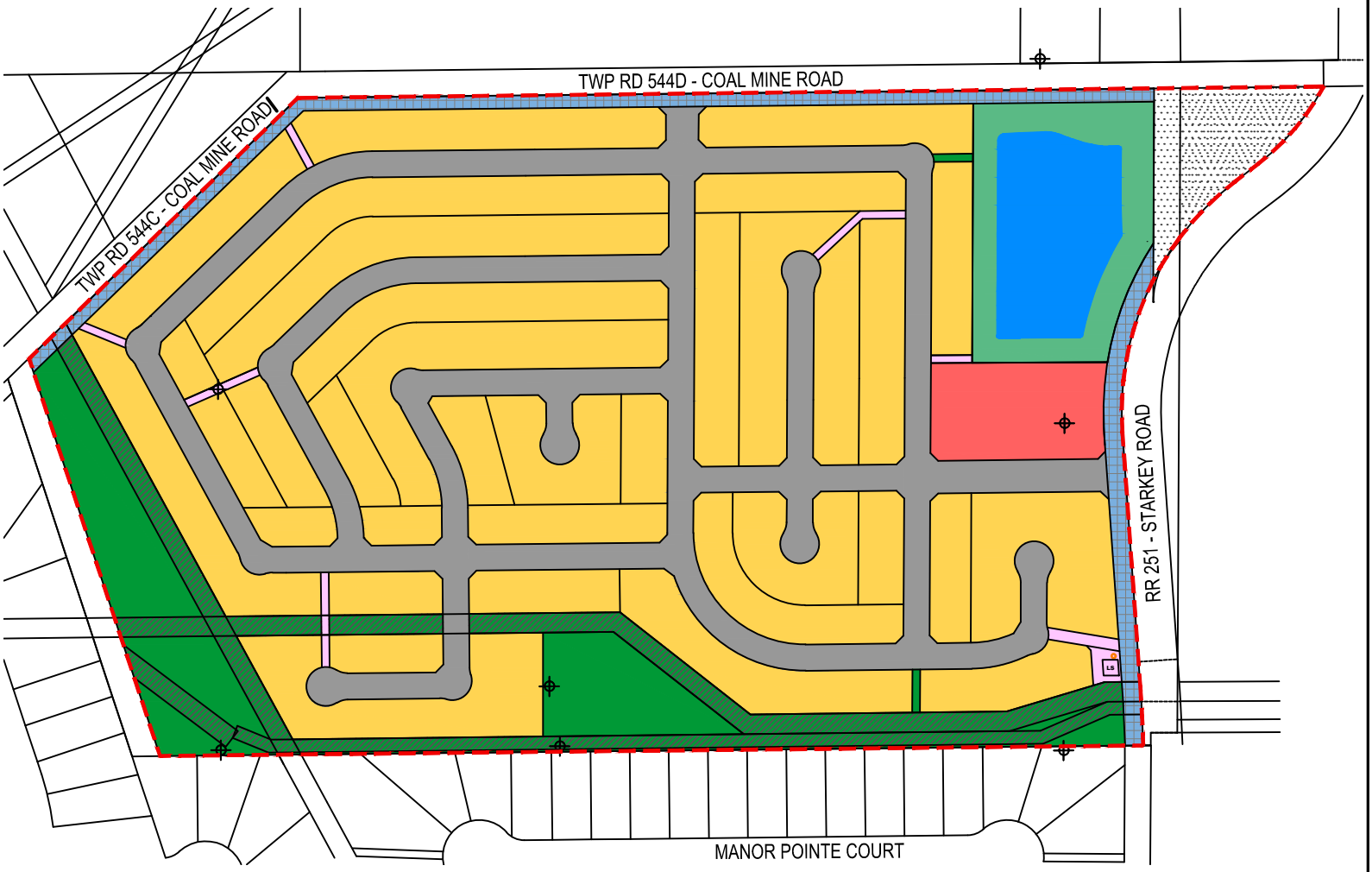

ADDITIONAL PUL AREA MAY BE REQUIRED FOR THE SANITARY LIFT STATION. PUL AREA TO BE DETERMINED AS PART OF LIFT STATION DESIGN.

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RIVER LOT 63

LAND USE STATISTICS - NOVEMBER 21 2024

LAND USE		ha	%	
GROSS AREA		**39.21**		
	Arterial Roadway	0.00		
	Wetland	0.00		
	ER	0.00		
	Road R/W Widening Dedication	1.47		
GROSS DEVELOPABLE AREA		**37.74**	**100.0%**	
	Residential	20.92	55.4%	Total Frontage (m) = 6,004.2
	Commercial	0.99	2.6%	(ft) = 19,699.9
	Stormwater Management Facility	2.57	6.8%	
	PUL	0.30	0.8%	
M.R.	PARK - MR	2.58	6.8%	Total M.R.
M.R.	PIPELINE R/W - MR	2.50	6.6%	5.08 ha 13.5%
ROAD	25.0 m Collector Roadway	0.43	1.1%	Total Length (m) = 178.0
ROAD	20.0 m Local Roadway	7.45	19.7%	Total Length (m) = 3,710.4

FIGURE 2 - CONCEPT PLAN

RIVER LOT 63 – STURGEON COUNTY

NOVEMBER 2024

SCALE: 1:5,000

40m 120m 200m

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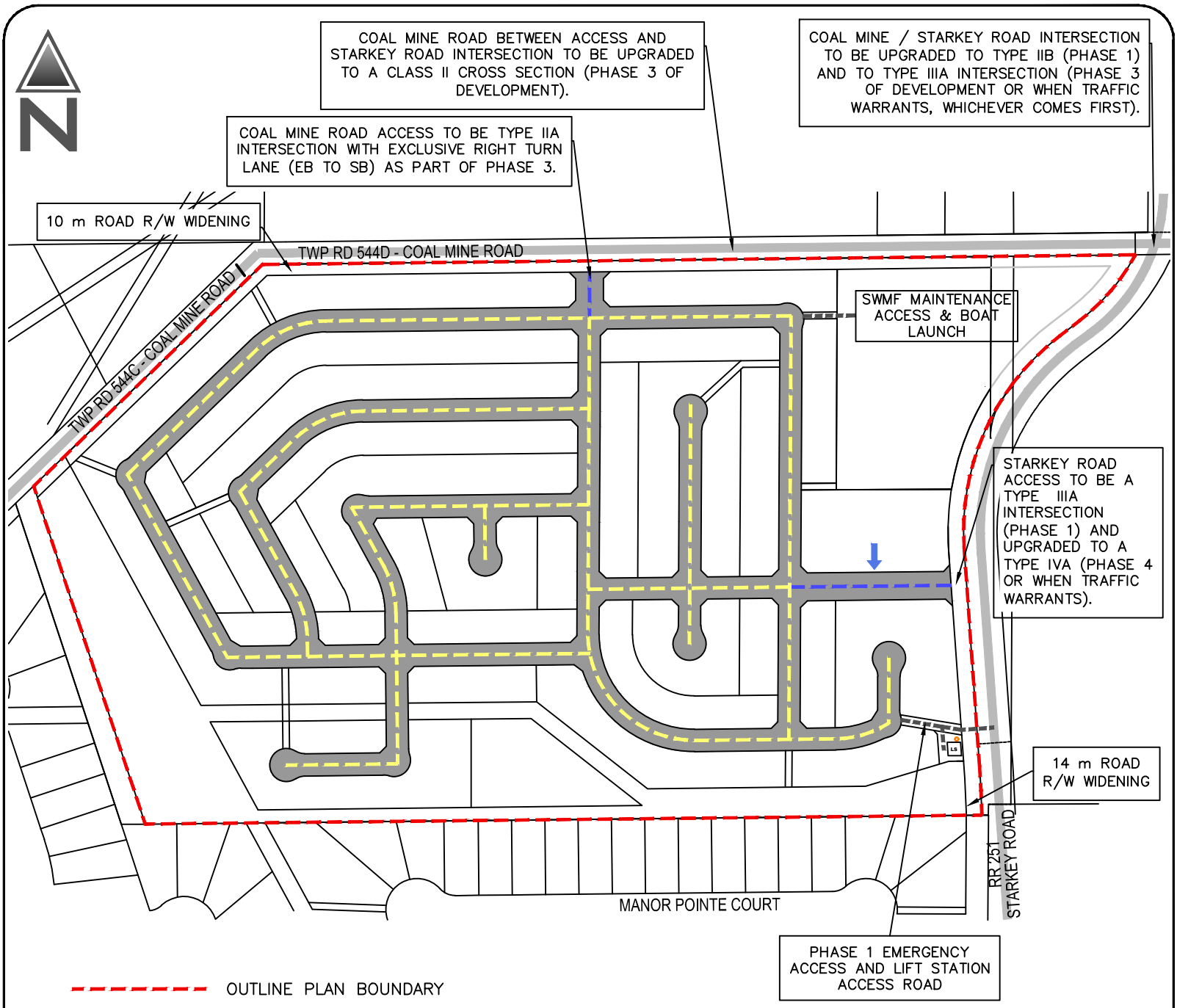

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FIGURE 3 - ROADWAY NETWORK

RIVER LOT 63 – STURGEON COUNTY

NOVEMBER 2024

SCALE: 1:5,000

40m 120m 200m

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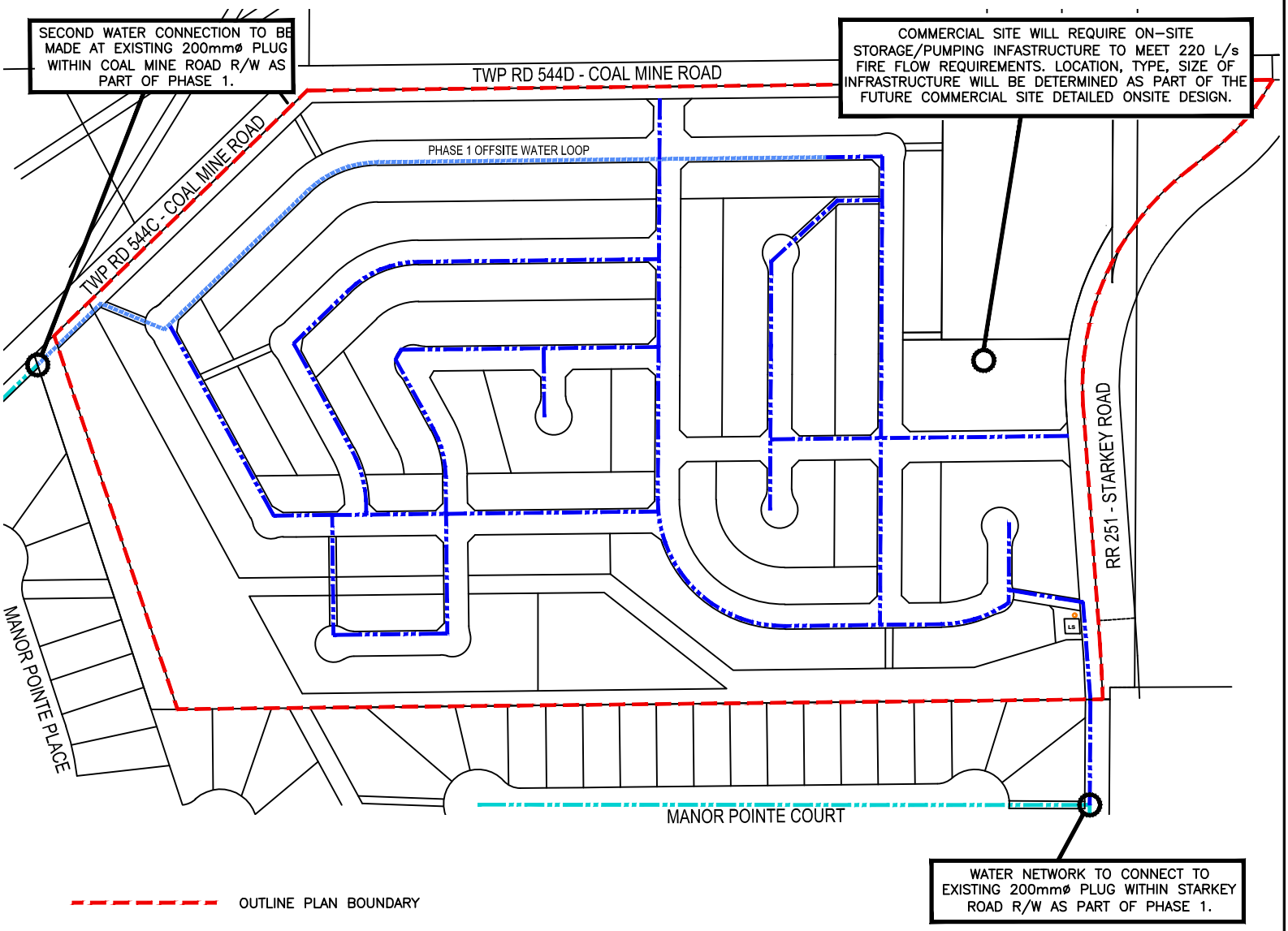

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FIGURE 4 - WATER NETWORK

RIVER LOT 63 – STURGEON COUNTY

NOVEMBER 2024

SCALE: 1:5,000

40m 120m 200m

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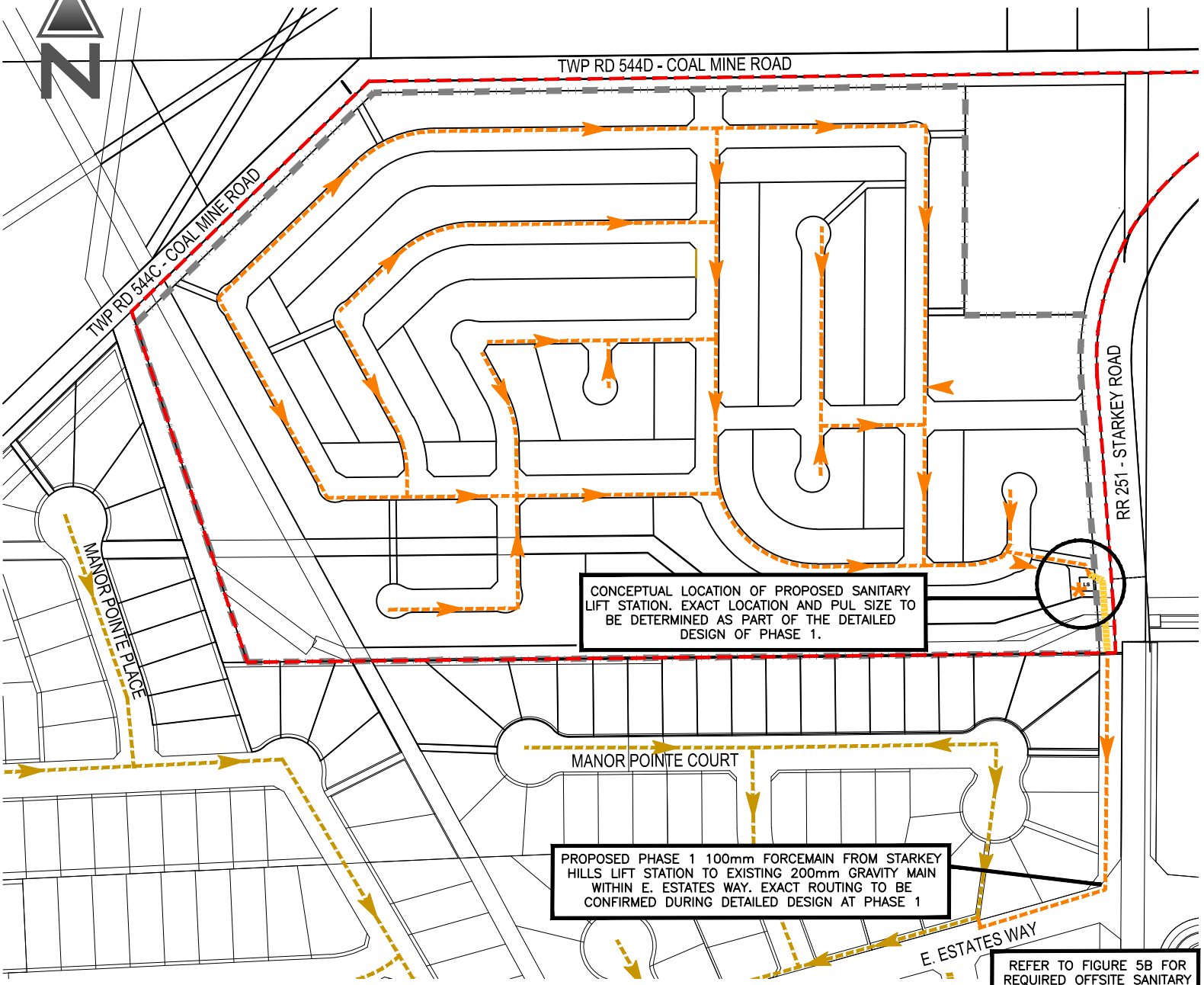

OUTLINE PLAN BOUNDARY

PROPOSED SANITARY MAIN (GRAVITY)

EXISTING SANITARY MAIN (GRAVITY)

PROPOSED SANITARY BASIN BOUNDARY

PROPOSED LIFT STATION (LOCATION APPROXIMATE ONLY, TO BE DETERMINED DURING DETAILED DESIGN)

PROPOSED SANITARY FORCEMAIN

PROPOSED STARKEY HILLS SANITARY FLOWS (FULL BUILD OUT) BASED ON RESULTS FROM "SANITARY SEWER ASSESSMENT REV005" CREATED BY SAMENG INC.
- –AVERAGE DAILY FLOW = 5.3L/s
- –PEAK DRY WEATHER FLOW = 19.5L/s
- –PEAK WET WEATHER FLOW = 29.3L/s

*PROPOSED FLOWS FOLLOW STURGEON COUNTY 2024 GMSS).

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FIGURE 5A - SANITARY NETWORK

RIVER LOT 63 – STURGEON COUNTY

NOVEMBER 2024

SCALE: 1:5,000

40m 120m 200m

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PHASED OFFSITE SANITARY IMPROVEMENTS

- **PHASE 1:**
  - Greystone Liftstation Modification: Replace existing 60L/s pumps with 5L/s pumps.
  - Connection To Existing Sanitary System: Connect proposed Starkey Hills Lift Station via 100mm forcemain and 300mm gravity main connecting to existing 200mm gravity main within East Estates Way.
  - Starkey Lift Station: Constructed and sized for ultimate build out, with two pumps to be installed to pump the required peak flows of Phase 1 & 2.

- **PHASE 3:**
  - Pipe Upgrading Along East Estate Way (R1, R2, R3, R4): Twin existing 200mm main with a 250mm main (open cut), or replace existing 200mm main with 300mm main (pipe bursting).
  - Pipe Upgrading on Manor View Crescent (D1):Twin existing 200mm main with a 250mm main (open cut).
  - Pipe Upgrading Within Existing Green Space (D8 & D9): Twin existing 200mm main with a 250mm main (open cut and/or directional drill).
  - Starkey Lift Station: Third pump to be added to Lift Station to increase pump rate to pump the required peak flows of full build out of Starkey Hills.

*For further detailed information on offsite sanitary upgrades, refer to Starkey Hills Outline Plan - Sanitary Sewer Assessment - REV005, completed by Sameng Inc.

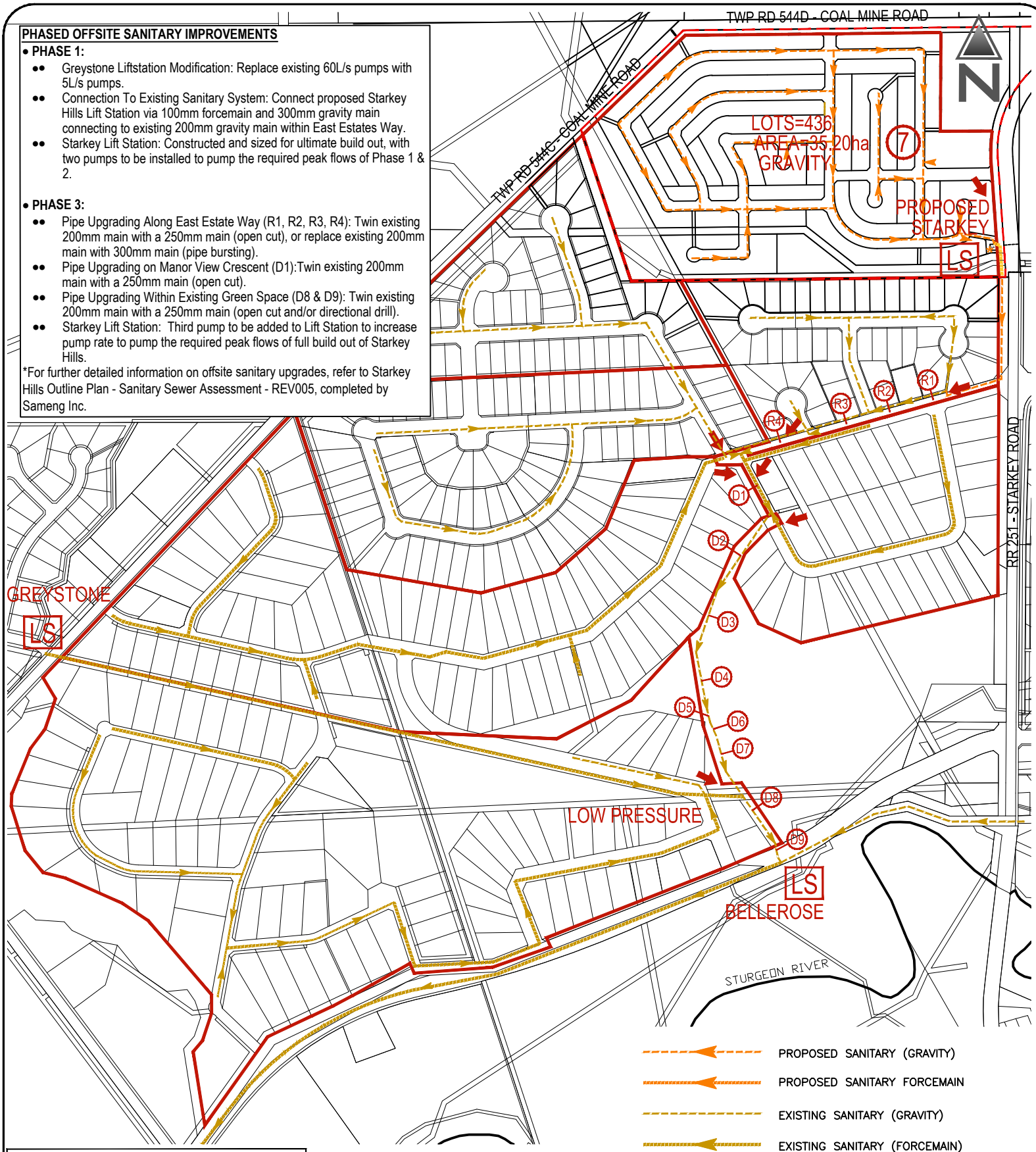

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FIGURE 5B
BELLEROSE SANITARY NETWORK

RIVER LOT 63 – STURGEON COUNTY

NOVEMBER 2024

SCALE: 1:10,000

80m 240m 400m

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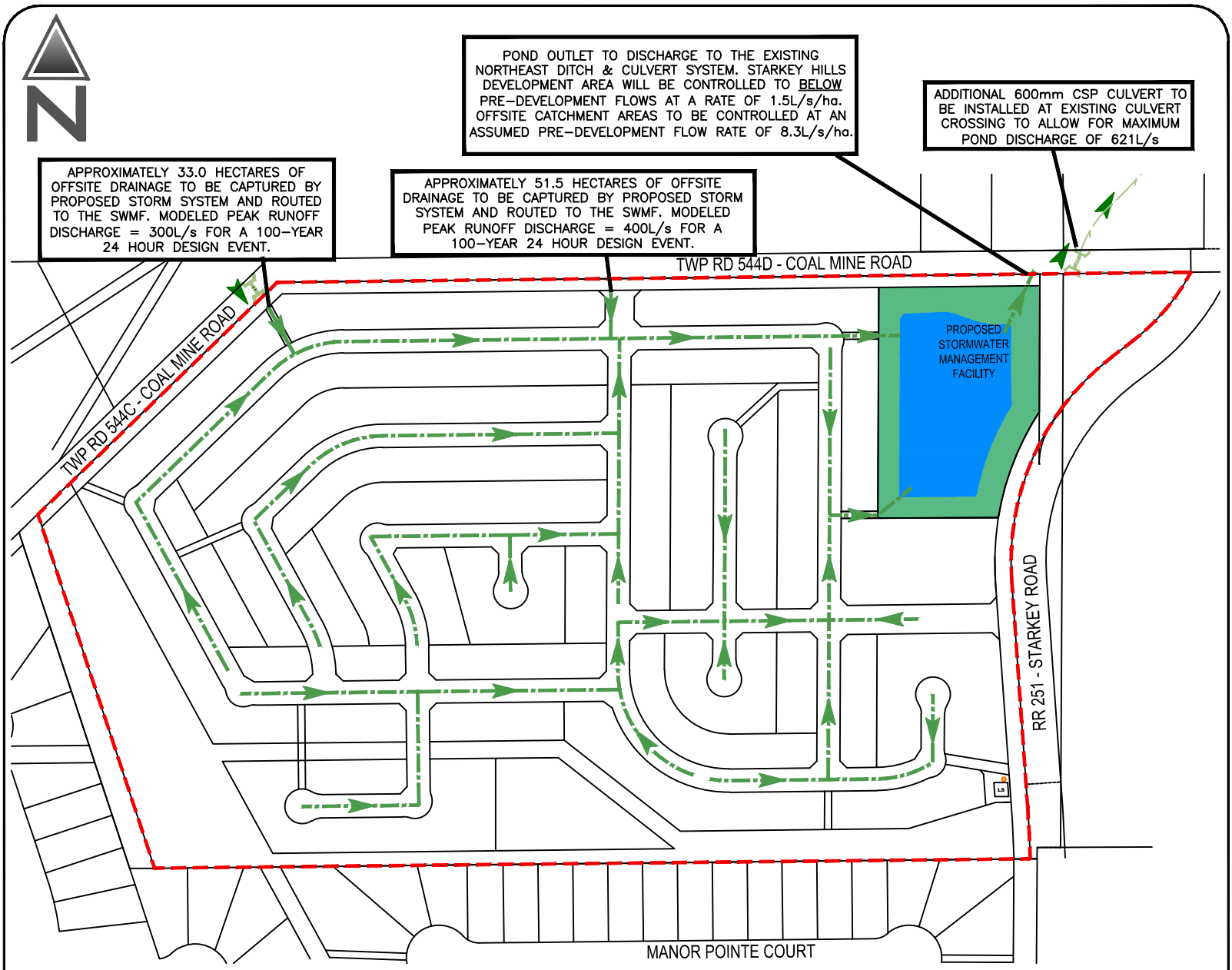

SWMF CAPACITIES:
PROPOSED MAXIMUM DISCHARGE RATE:
- LOWER OUTLET = 61L/s (1.5L/s/ha)
- UPPER OUTLET = 552L/s (8.3L/s/ha)
- TOTAL = 621L/s

REQUIRED LIVE STORAGE VOLUME:
- AT 2.0m ABOVE NWL = 32,800m^3
- AT 2.5m ABOVE NWL = 44,300m^3

1:5 YEAR RUNOFF STATISTICS:
SITE RUNOFF COEFFICIENT = 0.65
GROSS DEVELOPABLE AREA = 37.74ha
INTENSITY = 73.90mm/hr
DESIGN PEAK VOLUME FLOW RATE = 5.04m^3/s

FOUNDATION DRAINAGE SYSTEM MUST BE INSTALLED TO ADDRESS INFILTRATION INTO BASEMENT AREAS. WHERE BASEMENT EXCAVATION IS BELOW OR NEAR THE PERCHED GROUNDWATER LEVEL AN UNDERSLAB DRAINAGE SYSTEM IS RECOMMENDED. DETAILED DESIGN OF DRAINAGE SYSTEMS TO BE UNDERTAKEN BY QUALIFIED MECHANICAL ENGINEER. REFER TO GEOTECH REPORT FOR MORE INFORMATION.

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FIGURE 6 - STORMWATER NETWORK

RIVER LOT 63 – STURGEON COUNTY
NOVEMBER 2024

SCALE: 1:5,000
40m 120m 200m

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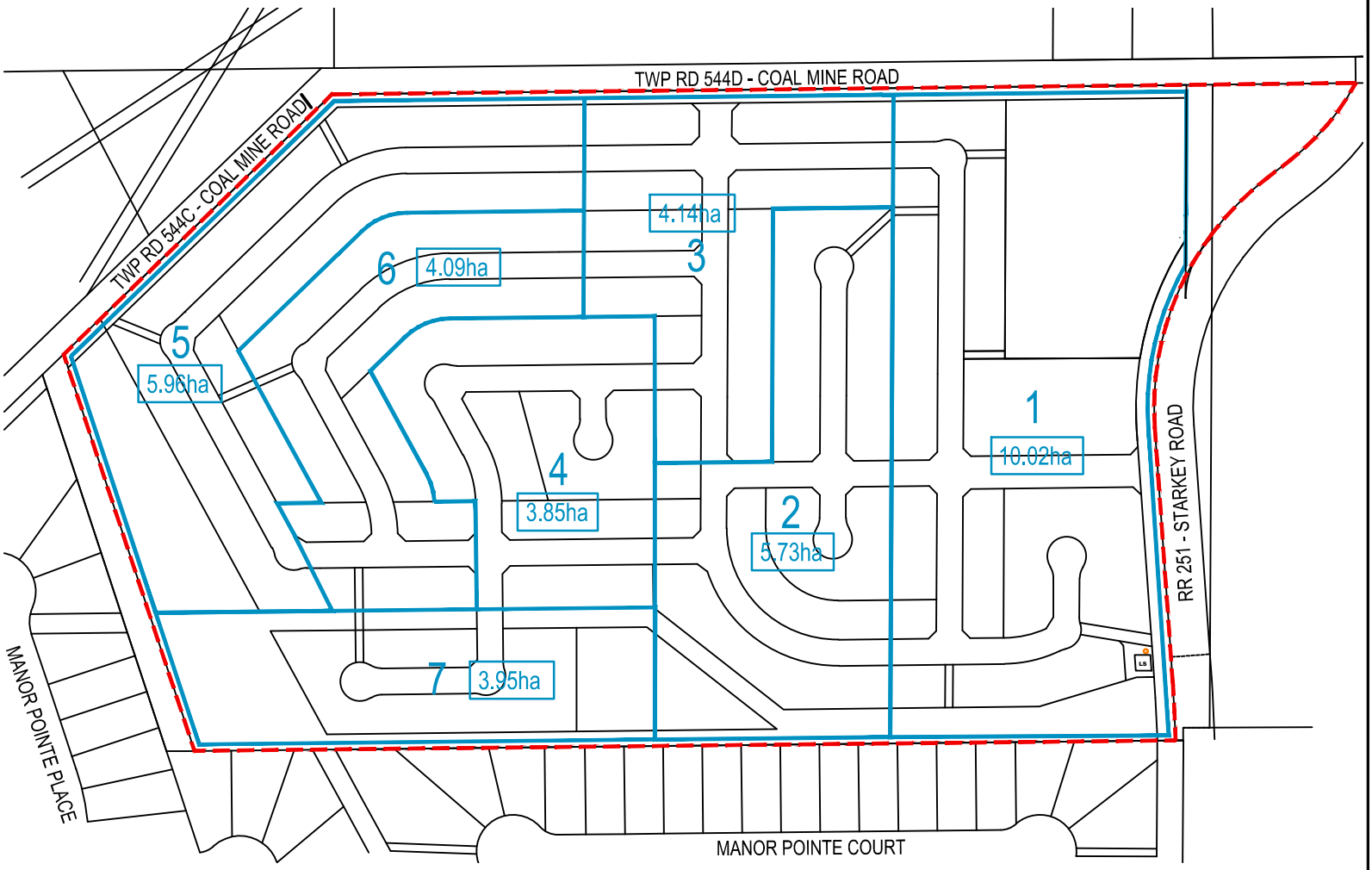

OUTLINE PLAN BOUNDARY

PHASE BOUNDARY

1 PHASE OF DEVELOPMENT

0.00ha DEVELOPABLE AREA

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FIGURE 7 - PHASING PLAN

RIVER LOT 63 – STURGEON COUNTY

NOVEMBER 2024

SCALE: 1:5,000

40m 120m 200m

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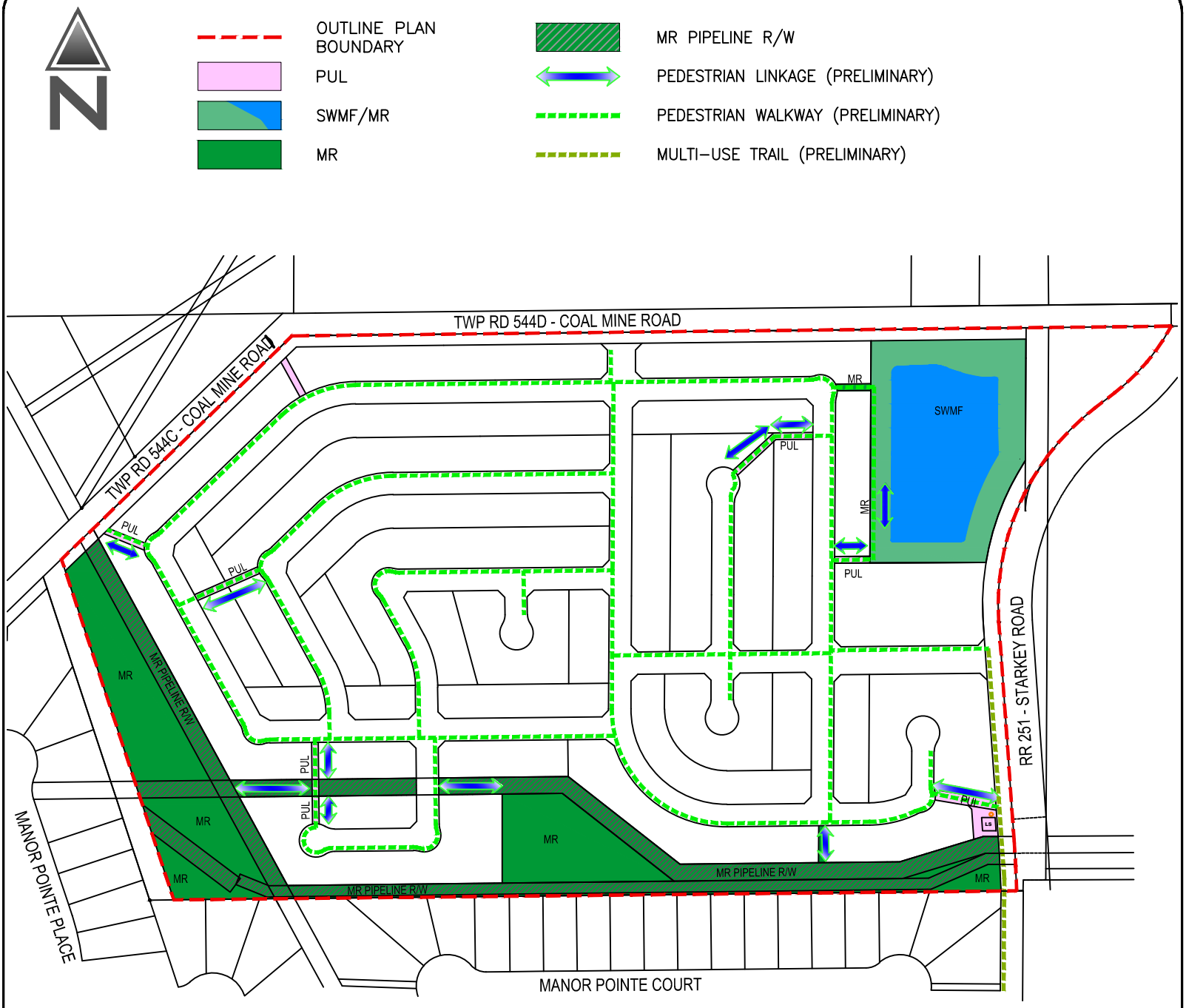

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FIGURE 8 - OPEN SPACE PLAN

RIVER LOT 63 – STURGEON COUNTY

NOVEMBER 2024

SCALE: 1:5,000

40m 120m 200m

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