

2012

The Willows of River Heights Neighbourhood Plan

LA VITA LAND



INC.

Prepared by Brown & Associates Planning Group in consultation with
Pasquini & Associates Consulting and Bunt & Associates
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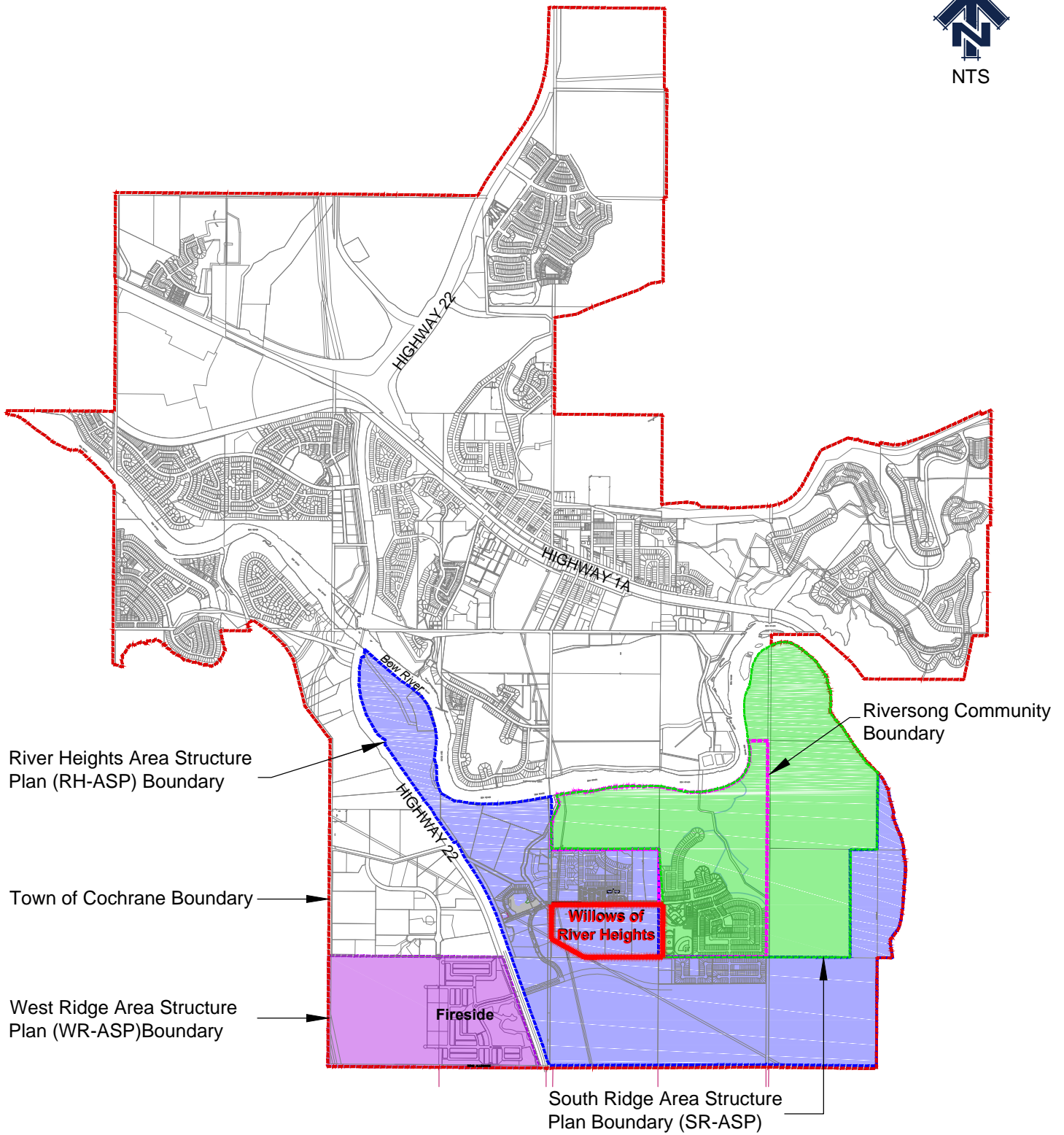
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1.0 VISION

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The Willows of River Heights Neighbourhood Plan proposes a relatively high-density residential neighbourhood within the newly adopted River Heights Area Structure Plan area. With many nearby amenities, both existing and in the future, the location is ideally situated to offer a unique neighbourhood with an integrated variety of housing forms. In close proximity to The Willows of River Heights are existing and planned highway commercial uses on the west side; a future village centre which will provide a pedestrian oriented community focal point and gathering place to the south; and the existing Bow Valley High School to the east with a future grade 5-9 school site directly adjacent to it.

The Willows of River Heights envisions a range of housing forms, including single-detached, semi-detached, duplex, secondary suites, and townhomes to be integrated through-out the community. The vision behind the integration of the different built

The protection of natural open space amenities through the incorporation of low impact development around the most significant wetland and striving to achieve no net loss of wetland habitat, plus the encouragement of an integrated range of residential built forms, will create an environmentally responsible new community within the Town of Cochrane.

forms is to enable a vibrant, unique neighbourhood with a range of housing forms available throughout the Plan area. Ideally each residential block will build out with a unique streetscape, and residents can choose a housing form that best suits their lifestyle and price range almost anywhere in the Plan area.

Other important design elements of The Willows of River Heights include the retention of valuable natural amenities through the protection of two wetlands and their associated upland habitat. The Biophysical Impact Analysis (BIA) undertaken by Sweetgrass Consulting identified two wetlands and surrounding riparian areas of significant value. One of these wetlands was previously identified as significant in the BIA completed for the River Heights Area Structure Plan, the second one was identified in the

Neighbourhood Plan BIA as a potential natural amenity, largely for its riparian area and therefore will be retained as well as a feature for the community.

2.0 INTRODUCTION

2.1 Purpose of the Plan and Policy Context

The Willows of River Heights Neighbourhood Plan (WRHNP) is a non-statutory plan that seeks to facilitate the planning and development of The Willows of River Heights. This Neighbourhood Plan adheres to the policies approved within the *River Heights Area Structure Plan* (September 2011), the *Town of Cochrane Municipal Development Plan* (October 2008), and the *Cochrane Sustainability Plan* (May 2009).

The purpose of a Neighbourhood Plan is to provide a framework for the development of a community. A Neighbourhood Plan describes the community layout, the placement of parks, the built form, and transportation and servicing requirements. The WRHNP provides the descriptive explanation of how the community will be developed but does not identify specific land use districts.

The Policy Context for a Neighbourhood Plan is provided under Section 14.3.2 Area Plan Policies of the Town of Cochrane Municipal Development Plan (MDP). Items (d) through (g) under this Section outline the base information required. The WRHNP follows and builds on this guide.

2.2 Ownership

Land Owner	Area (ha)	Area (ac)	Percentage
La Vita Land Inc.	15.41	38.08	50.8%
Tirion Properties	7.67	18.95	25.2%
E. & P. Arneson	3.46	8.55	11.4%
1417094 Alberta Ltd.	2.64	6.52	8.7%
1300534 Alberta Ltd.	1.18	2.92	3.9%
Total	30.36	75.02	100%

Table 1: Ownership

3.0 SITE CONTEXT

3.1 Area and Site Location

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The WRHNP area is located within the southwest sector of the Town of Cochrane, and comprises approximately 30.51 hectares (75.39 acres).

The WRHNP Lands are bound by the following:

- River Heights Drive and existing acreage residential beyond (designated UR-R, Residential Urban Reserve) are located to the north;
- A closed road allowance runs along the east boundary, with the existing Bow Valley High School beyond;
- The south boundary of the WRHNP coincides with the south boundary ownership lines as per Table 1, with the exception of the Arneson parcel which is not adjacent to the south boundary. Lands beyond this boundary fall within the River Heights Area Structure Plan and are identified as future residential.
- The west boundary consists of existing and future commercial development, as identified in the River Heights Area Structure Plan.

3.2 Legal Description

The lands within the WRHNP are in the Northwest ¼ of Section 26, 25, 4 W5M and are legally defined as follows:

PLAN 7510193, BLOCK 5

THE MOST EASTERLY 179.54 METRES OF THE MOST NORTHERLY 193.87 METRES BOTH IN PERPENDICULAR WIDTH THROUGHOUT OF SAID BLOCK CONTAINING 3.48 HECTARES (8.60 ACRES) MORE OR LESS EXCEPTING THEREOUT ALL MINES AND MINERALS

PLAN 7510193, BLOCK 5

CONTAINING 7.73 HECTARES (19.10 ACRES) MORE OR LESS

EXCEPTING THEREOUT:

THE MOST EASTERLY 179.54 METRES OF THE MOST NORTHERLY 193.87 METRES BOTH IN PERPENDICULAR WIDTH THROUGHOUT OF BLOCK FIVE (5) CONTAINING 3.48 HECTARES (8.60 ACRES) MORE OR LESS

EXCEPTING THEREOUT ALL MINES AND MINERALS

PLAN 7510193, BLOCK 6
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME
AREA: 7.73 HECTARES (19.1 ACRES) MORE OR LESS

PLAN 7610666, BLOCK 7
AND THE RIGHT TO WORK THE SAME
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 7.73 HECTARES (19.1 ACRES) MORE OR LESS

PLAN 7710903, BLOCK 8
EXCEPTING THEREOUT ALL MINES AND MINERALS
AND THE RIGHT TO WORK THE SAME

PLAN 0911859, BLOCK 8, LOT 2
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 1.183 HA (2.92 ACRES) MORE OR LESS

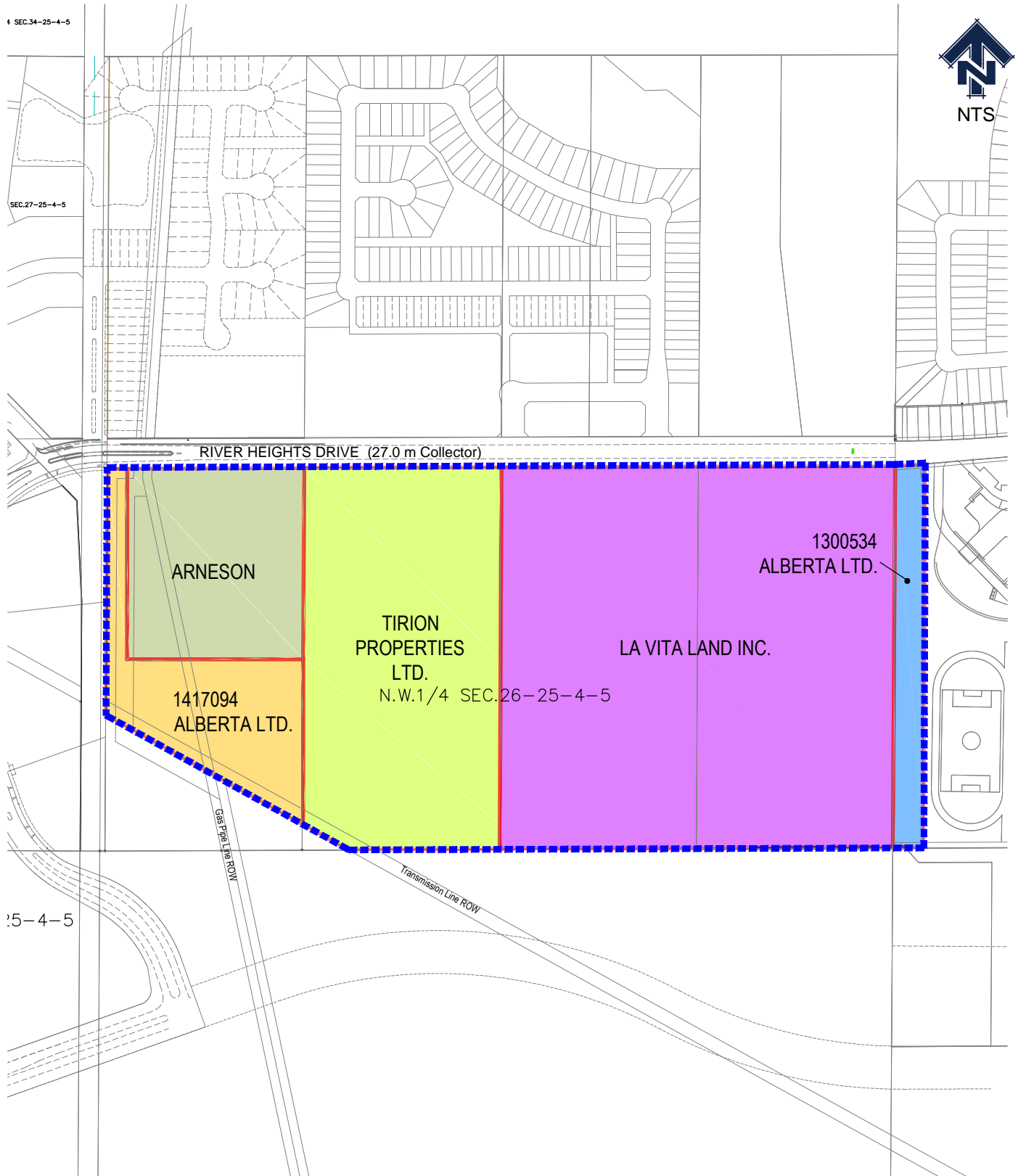
3.3 *Plan Area Description*

The WRHNP contains 29.33 hectares (72.48 acres) within the River Heights Area Structure Plan (RH-ASP) boundary and 1.18 hectares (2.92 acres) within the South Ridge Area Structure Plan boundary. Within the RH-ASP, the WRHNP builds upon the policies of the ASP while providing more detailed development direction.

The existing WRHNP lands include five acreage lots with residential buildings including other various sheds and garages. The lands directly surrounding the residential buildings are landscaped, other portions of the site have been cleared for cultivation, and some of the land has been left in its natural state. The topography of the site is dominated by gently rolling prairie with aspen parkland type vegetation and includes localized knolls and depressions.

The boundary of the WRHNP differs from the Neighbourhood Area identified in the RH-ASP, Figure 12. The reason for the modification to the Neighbourhood Boundary is because the landowners to the south do not feel ready to move forward with a Neighbourhood Plan on their lands. It is their desire to comprehensively plan the left out portion with the remainder of their lands to the south. Discussion with these landowners has occurred, and the shadow plan shown on Figure 6 is reflective of how these lands may develop out. See Appendix E to see the WRHNP boundary within the ASP Neighbourhoods.

The Willows of River Heights Neighbourhood Plan



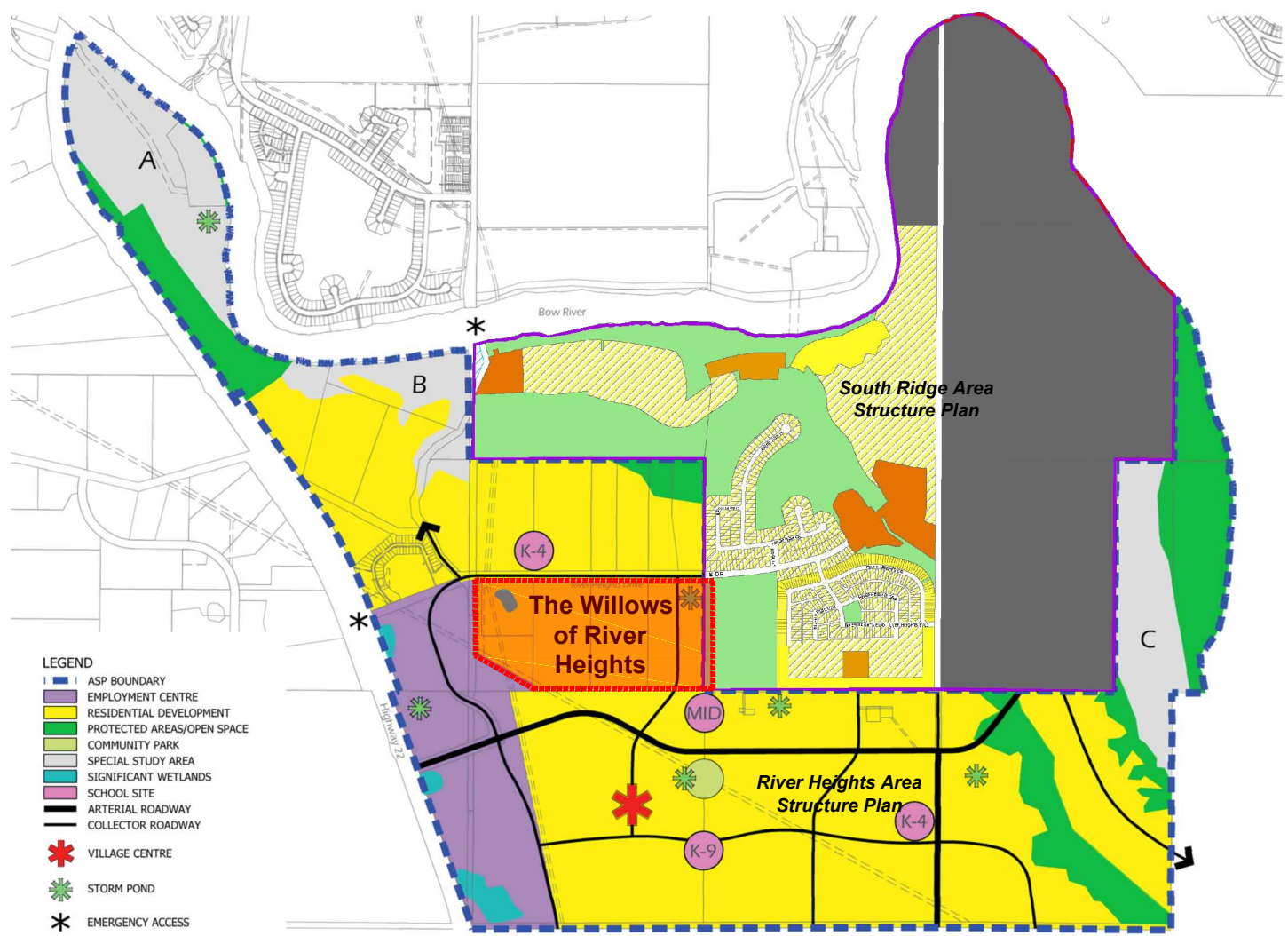


Figure 3:
Location of *The Willows of River Heights*
in Context to adjacent ASPs

4.0 SUPPORTING INFORMATION

4.1 *Supporting Studies – Summary of Findings*

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The following is a summary of the main findings each of the main reports related to The Willows of River Heights lands.

4.1.1 *Geotechnical Evaluation*

McIntosh Lalani Engineering Ltd. prepared two Geotechnical Evaluations for the WRHNP area. The first evaluation¹ was completed on May 28, 2008 and covered the easterly 60 acres of the WRHNP area. The second evaluation² was completed on December 9th, 2011 and included the remaining 15 acres in the west portion of the WRHNP area.

In total ten boreholes were drilled throughout the WRHNP area to evaluate the subsurface soil conditions. The boreholes generally found organic topsoil ranging in thickness from 75mm to 330mm. Under the organic soils, lacustrine silt and silty clays were encountered which extended to the glacial till soils at depths ranging from 1.2 metres to beyond 10.7 metres below the existing ground surface. Below the lacustrine silt and silty clay layers was glacial silt and silty clay tills were generally encountered. These tills were generally compact/stiff, moist, medium plastic with trace high plastic lenses, medium brown and contained traces of gravel, sand, clay, sandstone, oxides, coal and precipitates. These tills extended beyond the depth of the borehole. All of the borehole logs can be found in the Geotechnical Evaluation reports submitted under separate cover.

Both evaluations provide design recommendations for earthworks and underground utility installation and backfilling, and recommend that full time geotechnical monitoring be undertaken.

¹ McIntosh Lalani Engineering Ltd., Geotechnical Evaluation 3 – 20 Acre Parcels, May 2008

² McIntosh Lalani Engineering Ltd., Geotechnical Evaluation Additional Boreholes for 3 -20 Acre Parcels, December 2011

4.1.2 Historical Resource Impact Assessment

Two Historical Resource Impact Assessments (HRIA) were performed on the WRHNP lands. The first was completed by Historical Resource Management Ltd.³ on August 20, 2008 and recommended Historical Resources Act clearance. This clearance was granted through a letter from the Government of Alberta Culture and Community Services received on September 26, 2008.

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The second HRIA was completed by SNC Lavalin Environment⁴ on October 18, 2011 and also recommended Historical Act clearance. This clearance was granted through a letter from the Government of Alberta Culture and Community Services received on November 25, 2011.

Both HRIA reports and clearance letters have been submitted under separate cover.

4.1.3 Biophysical Resources

A Biophysical Impact Assessment (BIA) was undertaken by Sweetgrass Consulting Ltd.⁵ during the fall of 2011 and finalized in January 2012. The BIA identifies twelve habitat groupings including various shrubs, grasslands and wetlands. Approximately 50% of the site is non-native or disturbed semi-native habitat, and the majority of the native habitat has been disturbed by intensive livestock grazing.

The BIA notes two significant habitat areas. The first is labeled as Wetland 80, see Figure 4, which is the largest and most productive wetland in the WRHNP area. The BIA recommends retention of this wetland and the adjacent aspen woodland as Environmental Reserve (ER). The second is labeled as Wetland 91, which is significant because it includes a diverse area of connected habitat. Wetland 91 is recommended to be protected as ER, with the additional recommendation that the surrounding connected upland habitat be included in the community's Municipal Reserve (MR) dedication. The area recommended as MR does not meet

³ Historical Resource Management Ltd. – Historical Resource Impact Assessment, August 20, 2008

⁴ SNC Lavalin Environment – Historical Resource Impact Assessment, October 18, 2011

⁵ Sweetgrass Consultants Ltd. – Willows of Riversong Biophysical Impact Assessment, January 2012

the criteria to be classified as ER, but would be a valuable natural amenity to the community.

A small population of blunt-leaved yellow cress, a provincially rare plant species, was found in the heavily grazed habitat around Wetland 89 in the southeast corner of the WRHNP area. This is the same provincially rare plant that was found in the community of Fireside, west of the WRHNP area. Similar to the mitigation for rare plants that was approved for Fireside; it is proposed that these rare plants be transplanted to enhance the ER areas around Wetland 80 or 91.

Figure 4: Wetlands⁶



⁶ Sweetgrass Consultants Ltd. – Willows of Riversong Biophysical Impact Assessment, Figure 3, page 10.

4.1.4 Environmental Site Assessment

Three separate Phase One Environmental Site Assessments (ESA) have been performed on the land, based on the different ownership areas.

A Phase One Environmental Site Assessment⁷ (ESA) dated November 29, 2007, was performed by Base Property Consultants Ltd. for the Tirion parcel and the east half of the La Vita Land parcel (see Figure 2 Ownership Map). This ESA states that there is no significant environmental impairment on the site, and that no further environmental investigation is required.

A second ESA⁸ was prepared for the west half of the La Vita Lands Inc. parcel, see Figure 2 Ownership Map, by Base Property Consultants Ltd, dated February 24, 2008. This ESA also states that there is no significant environmental impairment on the site, and that no further environmental investigation is required.

The third ESA⁹ was prepared for both the Arneson land and 1417094 Alberta Ltd. by Biophilia Inc., dated October 31, 2011. This ESA states that there is no evidence of environmental liabilities associated with the subject property and that further investigation is not warranted.

In summary, no further action with regards to environmental concerns is required within The Willows of River Heights Neighbourhood Plan.

4.1.5 Traffic Impact Assessment

The Willows of River Heights Traffic Impact Assessment (TIA) Report¹⁰ prepared by Bunt & Associates dated January 2012 includes series of recommendations developed based on the analysis undertaken as part of that study. In general these conclusions confirm that the WRHNP proposed internal and external road networks will provide acceptable levels of service. The TIA has been submitted under separate cover.

⁷ Base Property Consultants Ltd. – Phase One Environmental Site Assessment, November 29, 2007

⁸ Base Property Consultants Ltd. – Phase One Environmental Site Assessment, February 24, 2008

⁹ Biophilia Inc., Phase One Environmental Site Assessment, October 31, 2011

¹⁰ Bunt & Associates – The Willows of River Heights Transportation Impact Assessment Report, January 2012

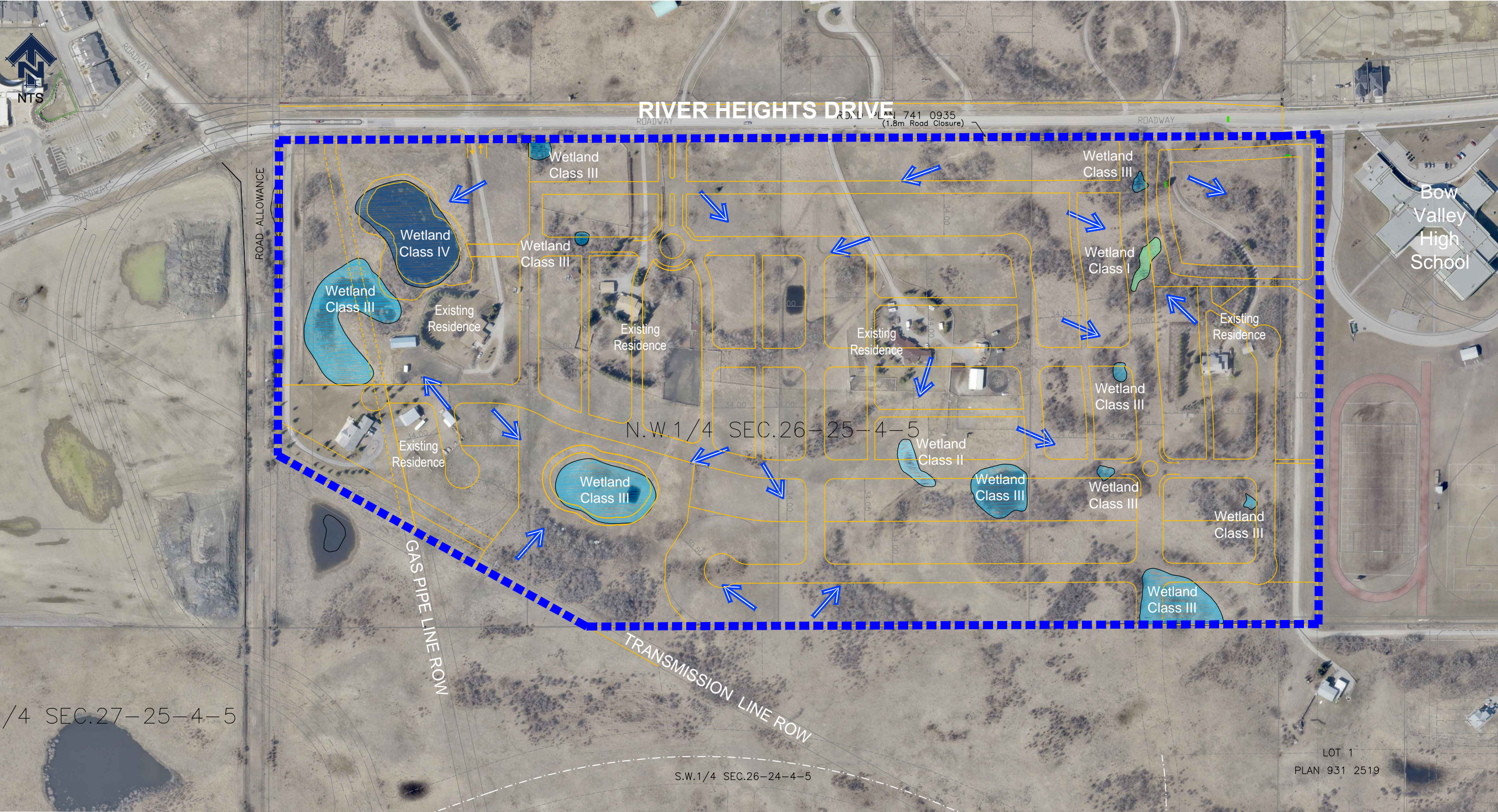


Figure 5:
Development Considerations

5.0 THE WILLOWS OF RIVER HEIGHTS NEIGHBOURHOOD PLAN

The Willows of River Heights Neighbourhood Plan (WRHNP) area falls within the boundary of the River Heights Area Structure Plan (RH-ASP). The policies within the RH-ASP define River Heights to be a mixed use community which includes residential, commercial, industrial, institutional and open space uses over approximately 414 hectares (1022 acres). The RH-ASP identifies the lands within The Willows of River Heights Neighbourhood Plan boundary as future residential.

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The area to the west of the WRHNP is identified in the WR-ASP as an Employment Centre. This area is currently designated as Highway Commercial (C-HWY), with a portion built and operating as an automotive dealership. A portion of the west side of the WRHNP is proposed to be designated as C-HWY to allow it to be developed as part of the commercial/employment centre. The WR-ASP also identifies a future mixed-use Village Centre will be within walking distance to the south of the WRHNP area. See Figure 6 for the neighbourhood layout.

The key design elements of The Willows of River Heights Neighbourhood Plan are:

- ✓ *Utilizing Land Use Districts to allow an integration of various housing forms creating unique streetscapes;*
- ✓ *Two entrances into the community from River Heights Drive, and future additional access from James Walker Trail and River Heights Drive;*
- ✓ *A combination of green spaces, pathways and sidewalks for pedestrian connectivity and passive recreation;*
- ✓ *Active recreation opportunities through a playground, active play areas and playfields associated with the future Joint Use Site;*
- ✓ *Identification of a potential future community garden site;*
- ✓ *A portion of a future school site;*
- ✓ *Two permanent wetlands and associated riparian areas to be integrated as natural amenities of the neighbourhood,*
- ✓ *A stormpond with a local pathway encircling it for passive recreation;*
- ✓ *Regional pathway connection to adjacent commercial uses to the west;*
- ✓ *Two traffic circles for place-making and traffic calming;*
- ✓ *One-way streets separating street oriented townhouse development from the formal park space to provide an intimate yet active focal point for the neighbourhood.*

These design elements allow the WRHNP to meet the requirements of a complete community because they fulfill the following needs:

- ✓ *Provide suitable access to the site;*
- ✓ *Include residential options that can accommodate a variety of household forms;*
- ✓ *Ensure convenient and safe access to commercial development and employment area;*
- ✓ *To have educational opportunities located in close proximity to a residential location;*
- ✓ *Provide public spaces for communal use;*
- ✓ *Offer the opportunity for natural and open green space in an urban environment;*
- ✓ *Include the opportunity for residents to grow their own food locally, and*
- ✓ *Ensure the infrastructure necessary to facilitate the development.*

Public utility easements run adjacent to the southwest and west sides of the Neighbourhood Plan area. These public utility easements are identified in the River Heights Area Structure Plan as part of the regional trail network.

The Willows of River Heights Neighbourhood Plan proposes that the regional pathway will run inside the Altalink Power Line right of way in a portion of the Plan area, then act as a buffer and connection between the residential uses and commercial/employment uses as it heads towards River Heights Drive. This regional pathway alignment is consistent with the intention of the alignment identified in the River Heights Area Structure Plan and will connect residents to the future employment and retail areas to the west of the Plan area. Further details on the linear greenspace are found in Section 7.3. Additional appropriate connections will be determined through future Neighbourhood Plans.

5.1 Community Name

The name ‘The Willows of River Heights’ and the future design theme are inspired by the natural vegetation on the site as well as the proximity to the community to the Bow River. The name and theme are further reinforced by the protection of the upland riparian area and tree stand adjacent to wetland 91 and visible from the community’s main entrance.

The Willows of River Heights celebrates the harmonious relationship between the natural environment and the community

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Willow trees are often found along riverbanks as their strong roots can help stabilize the banks. The Willows of River Heights name celebrates the river and encourages a harmonious relationship between the natural environment and community.

5.2 Community Theme

The design theme for The Willows of River Heights takes inspiration from the natural environment and the river. This theme will be illustrated through several outlets.

- Entrance features inspired by willow trees and shrubs will be placed on either side of Willows Gate, off River Heights Drive.
- The landscaping throughout the community will include willow trees and shrubs in addition to other vegetation in conformance with the Town of Cochrane landscaping requirements.
- A public art piece in the feature entrance park. The final design shall require limited maintenance, be a reflection of the community theme, and be visible to residents as they enter the community on Willows Gate.
- The proposed colour palette for The Willows of River Heights community will utilize river tones. The colour palette will include shades of brown, gray, black, green, blue, white and beige. Variations of these colours will form the colour palette for the community.

5.3 Design Elements

Design Elements are the elements of The Willows of River Heights that are built into the layout of the community to make it function more completely and more efficiently, or that provide opportunities for social interaction and connectivity for residents. The design elements will help define the community and provide a sense of place. Figure 9 illustrates the key design elements of the WRHNP.

5.3.1 Design Elements of the Residential Areas

The WRHNP envisions a vibrant community supportive of many different life stages and family compositions, and will encourage this through its varied housing forms. The housing forms that will be available within the

An integrated mix of residential built form will create unique streetscapes with a variety of housing forms available throughout the neighbourhood.

WRHNP may include multi-family apartments, townhouses, semi-detached dwellings, single family dwellings and secondary suites. Single detached housing will be encouraged to be built adjacent to semi-detached and townhouse units as an opportunity to integrate the development forms and to add variety to the streetscape. Accessory/garden suites are also available to increase the range of accommodations provided throughout the Neighbourhood Plan area.

The majority of the single or semi-detached residential blocks within the WRHNP have rear access through lanes. See Figure 6. Providing rear vehicular access to the residential units eliminates the need for vehicles to cross the front sidewalk for access to garages. Reducing the potential conflict between pedestrians and vehicles creates a safer pedestrian environment along the streetscape. All of the residential units that front onto the collector road network within the WRHNP have rear lane access, with no direct front vehicular access onto the collector roads. Laned residential areas fronting onto collector roads also eliminate conflict between driveways and pedestrian crosswalk locations.

The Residential Single and Two Dwelling District found in the Town of Cochrane Land Use Bylaw 01/2004 allows single detached homes and semi-detached homes to exist in the same block under one land use district. This built-in flexibility within one land use allows for some variety in the built form, which aids in the creation of interesting streetscapes. The Willows of River Heights builds upon the vision of the R-2 land use and takes it one step further by integrating townhouses with single and semi-detached units. Variation of housing forms along each street will create a streetscape that supports a unique built form. Every street can develop differently, creating a unique character not found in communities with homogeneous built forms.

Another design element that will add to interest to the streetscapes in the WRHNP are one-way streets in front of the Townhome developments adjacent to the feature entrance park. As residents enter the Neighbourhood Plan area on Willow Gate, from River Heights Drive, with first housing form presented will be a townhouse development. Fronting one-way streets will bring the townhouses closer to the park, providing a more intimate relationship between the housing form and the open space.



Figure 7: Example of a One-Way Street Separating Townhouses and Open Space

The WRHNP includes two high-density multi-family (RM) sites. Existing constraints on the RM sites include a combination of a 0.60 hectare (1.49 acre) Class IV wetland and riparian area, high pressure gas pipelines right of ways and/or an ATCO overhead transmission line building setback. Given these constraints, the WRHNP envisions the RM sites to develop into a cluster residential area. Clustered residential development will facilitate a high density, low impact development around the Class IV wetland, turning this constraint into an amenity. A clustered residential development will result in less hard surfaced infrastructure, and thereby permit natural drainage to remain directed towards the wetland, helping to sustain it.

Figure 8: Example of Low Impact/High Density Cluster Development





Figure 9: Design Elements

5.3.2 Design Elements of the School Site

The school site is purposefully placed adjacent to the Bow Valley High School to allow both schools to share playfields and reduce the size of the school site. Reducing the size of school sites will permit the utilization of municipal reserve for other neighbourhood amenities.

Access to the school site will be accommodated by Willow Drive, a 21.0 metre collector road that runs in a north/south direction, along the west side of the school site, connecting River Heights Drive to the future James Walker Trail.

A round-about is proposed north of the intersection in front of the school site to aid traffic calming in this location, along Willow Drive, and provide safe access to the school site.

5.3.3 Internal Road Network

The WRHNP layout follows a modified grid design which reduces vehicular conflicts when compared to a traditional grid design. The difference between the two is that the modified grid provides some loops and crescents to minimize traffic short-cutting and eliminate unnecessary street intersections while a traditional grid has intersections at the end of each block.

The modified grid design of the community builds upon the Cochrane Sustainability Plan's 12th **Pathway to the Future: There are diverse options for getting around**. Not only does the modified grid design give vehicular traffic multiple routes to choose from, it also encourages walking and cycling in the community by providing short blocks and good sidewalk/pathway connectivity.

5.3.3.1 One-Way Streets

Two one-way streets are included in the WRHNP road network. The purposes of these streets are to provide front access to the adjacent townhouse residential areas, but maintain an intimate relationship between those residences and the central greenspace. Each street will allow one driving lane and one parking lane with a sidewalk on the side of

the residential units. Pedestrian access through the park space will be provided through a local pathway system.

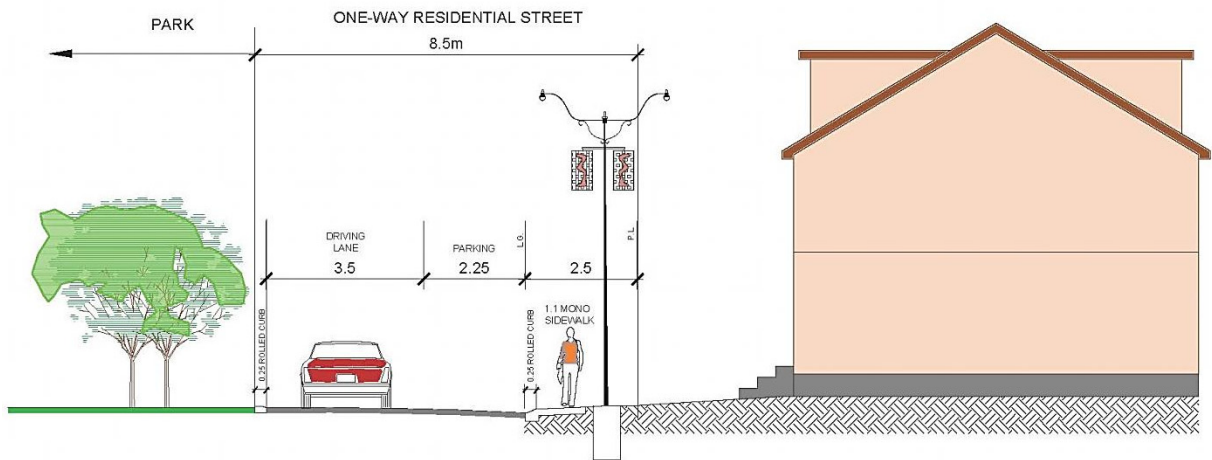


Figure 10: Example of a One-Way Street Cross-Section

5.3.4 Stormwater Management Facility

The stormwater management facility will operate as a traditional storm pond, but will be landscaped to provide wetland habitat. Existing vegetation within The Willows of River Heights Neighbourhood Plan will be relocated to the perimeter of the stormwater management facility to enhance the viability of the wetland habitat area and preserve the existing vegetation. Additional landscaping will be included as needed to ensure sufficient vegetation is provided to create a wetland habitat.

Walking paths and places to relax and enjoy the outdoor environment are part of the stormwater facility design and will provide residents with passive recreation opportunities. Residents will be able to walk, run or cycle around the facility, or just sit and enjoy the naturalized environment.

5.3.5 Central Park & Public Art

The vista welcoming residents into The Willows of River Heights from River Heights Drive will be a structural public art piece placed at the north end of the central park. This public art piece will enhance the theme of the

community as well as provide a sense of place. The art piece will be a low maintenance structure that can withstand the elements. The public art will be enjoyed by residents of the community whether they are walking past the park, sitting in and enjoying the park, or even by driving past on their way home.

The central park will also be designed to support active play. The park is wide enough to house a minor soccer field but will be constructed as a general open play area to facilitate active play as well as landscaping and passive enjoyment. A parks concept plan can be found in Appendix E.

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5.3.6 Wetland Park

The location of this park is a result of the desire to protect a natural feature of the existing site. It will be a wooded park and wetland area that will preserve existing habitat for plants and wildlife. The treed portion of site itself does not meet the criteria for protection under environmental reserve, but its value as an amenity to the community is recognized and therefore will become part of the municipal reserve dedication.

The east portion of this park area will house a play structure providing active recreation for young families, and the northwest corner will provide a location for a community garden. A parks concept plan can be found in Appendix E.

5.3.7 Commercial/Employment Area

The commercial area in the west portion of the WRHNP area will be developed comprehensively with the commercial/employment area to the west. There will be no direct vehicular connection to this area from within the WRHNP. Pedestrian access will be conveniently provided from the regional pathway which runs along the entire east side of the commercial/employment area.

6.0 LAND USE

The Willows of River Heights is located within the River Heights Area Structure Plan which identifies the WRHNP land as predominantly residential. Below are listed the proposed land use categories for the WRHNP. The proposed land use redesignation is illustrated on Figure 11.

6.1 Residential Use

The predominant Land Use within The Willows of River Heights Neighbourhood Plan will be residential. Residential use covers 18.36 hectares (45.37 acres), or 62.3% of the net developable WRHNP area.

Two residential land use categories will be represented within the Plan area:

- Residential Higher Density Use
- Residential Mixed Density Use

The Neighbourhood Plan is envisioned to be built out with an integrated mix of dwelling units on every residential block. The Town of Cochrane's flexible residential land use districts will be utilized extensively within the plan area to facilitate the development of different housing forms on the same block. The areas within the WRHNP identified as Residential Mixed Density Use are anticipated to include a range of housing such as Single detached, Semi-detached, Townhouse, and Secondary Suites. The areas identified as Residential Higher Density Use will be comprehensively developed sites.

The range of dwelling options within the Plan area will provide choice of dwelling style accommodating a variety of income levels and life stages – singles, young families, mature families, and empty nesters. Each group will have the opportunity to find suitable accommodation within The Willows of River Heights Neighbourhood Plan area.

Should a need for affordable housing be identified within The Willows of River Heights Neighbourhood Plan area through consultation with the Cochrane Society for Housing Options, there would be a great variety of locations in which it could be accommodated.

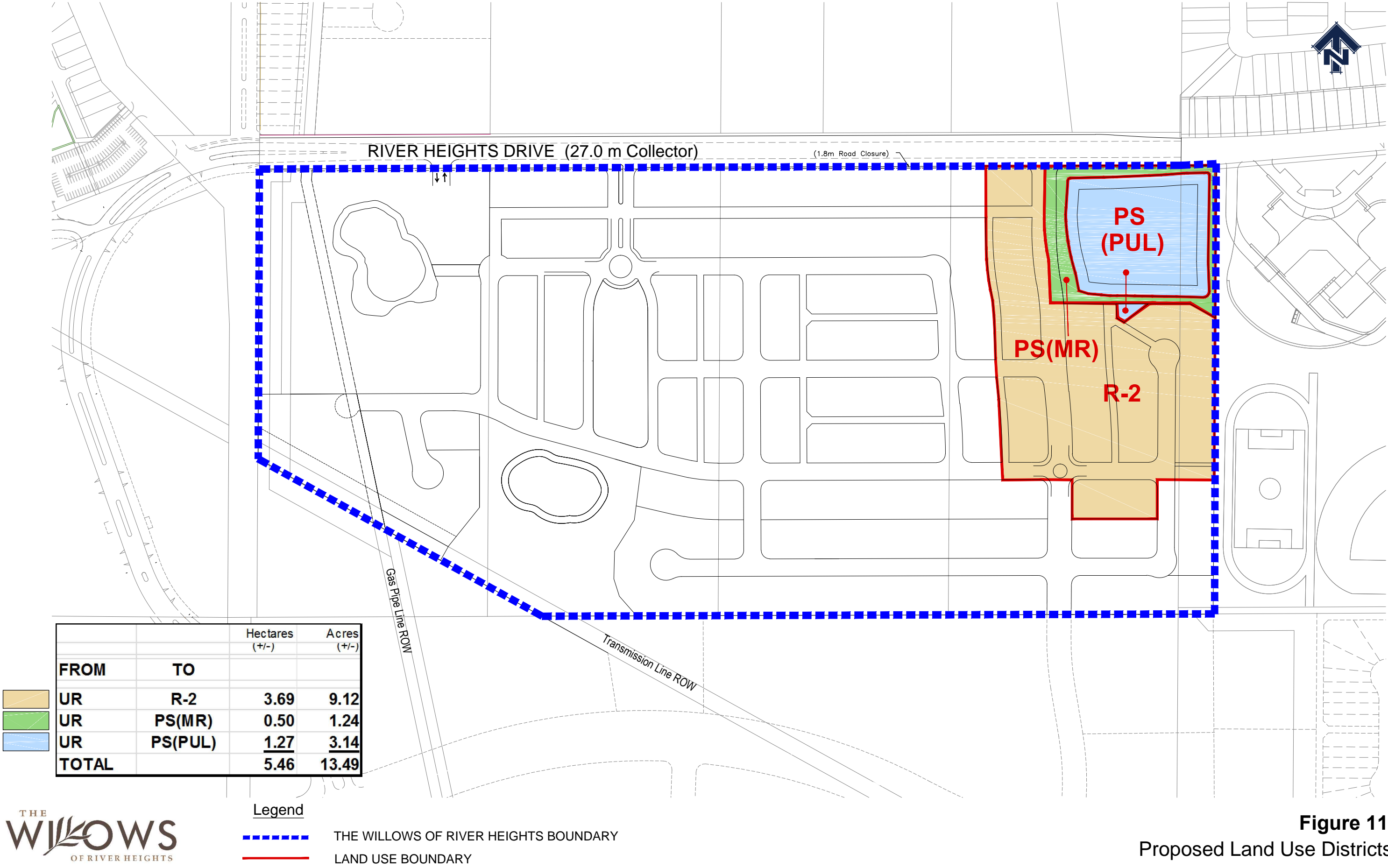


Figure 11:
Proposed Land Use Districts

6.2 *Commercial Use*

The area to the west of the WRHNP is identified in the RH-ASP as an Employment Centre. This area is currently designated as Highway Commercial (C-HWY), with a portion built and operating as an automotive dealership. 0.40 hectares (0.99 acres) of the west side of the WRHNP is proposed to be designated as Highway Commercial to allow it to be developed as part of the commercial/employment centre. These lands will be serviced and accessed from the west side, outside of the WRHNP area. Commercial use makes up 1.4% of the net developable area.

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The importance of visual buffering between commercial uses and residential is recognized. At the land use application stage, a plan shall be provided showing how the visual impacts of the commercial development on the residential development will be mitigated.

6.3 *Public Service Use - Open Space and Environmental Reserve*

The Public Service component of The Willows of River Heights Neighbourhood Plan accounts for 4.34 hectares (10.72 acres), or 14.7% of the net developable area. Municipal Reserve dedication accounts for 10.3% of the net developable area.

The open space system is designed to increase connectivity through the WRHNP. Passive and active recreation opportunities are found within the Plan area. Further information on how the open space system aids pedestrian connectivity can be found in Section 7.3.

The Willows of River Heights provides for a portion of the future Joint Use 6.0 acre Grade 5 to Grade 8 school site, identified in the River Heights Area Structure Plan. This future school site and size meet the objective of the River Heights Area Structure Plan by locating it where it can take advantage of the playfields of the Bow Valley High School to reduce the overall cumulative size of the school sites within the RH-ASP area. Also included within the Public Service Land Use area are environmental reserves, consisting of the two wetlands and their adjacent riparian areas; municipal reserve in the form of a central park, the wetland park area, and open space adjacent to the stormpond; plus public utility lots for the stormpond and storage of gravel and snow as part of the Cochrane Roads Department maintenance program.

7.0 TRANSPORTATION NETWORK

7.1 Internal Transportation Network

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The Willows of River Heights modified grid road network provides vehicular traffic with multiple routes to choose from. It also provides short blocks and good sidewalk/pathway connectivity to encourage walking and cycling in the community as alternate forms of transportation to vehicles. The inclusion of short blocks increases the connectivity of the street layout because there become multiple options for connecting to various different areas of the community. For the same reasons, short blocks increase the pedestrian connectivity as well. The internal street network is shown in Figure 6, and the potential future transit route is identified in Figure 13.

Sidewalks are placed on both sides of all of the streets within the WRHNP area. The sidewalk network is complimented by a pathway system that will draw residents into the community's greenspaces. The pedestrian connectivity (network) is discussed in Section 7.3.

The one-way streets and the traffic circle in front of the school site are design elements to create interest in the streetscape, and provide traffic calming as vehicles slow down to navigate them.

7.2 External Transportation Network

The initial access to the WRHNP area will be from River Heights Drive. The Transportation Impact Analysis from Bunt & Associates states that 350 homes can be built and occupied within the WRHNP area prior to the requirement of a second permanent access to the community via James Walker Trail. The ultimate build out of the WRHNP will have two access points into the community from River Heights Drive and one from James Walker Trail. Figure 12 illustrates the staged external transportation network as per the Town of Cochrane Transportation Plan Update 2009.

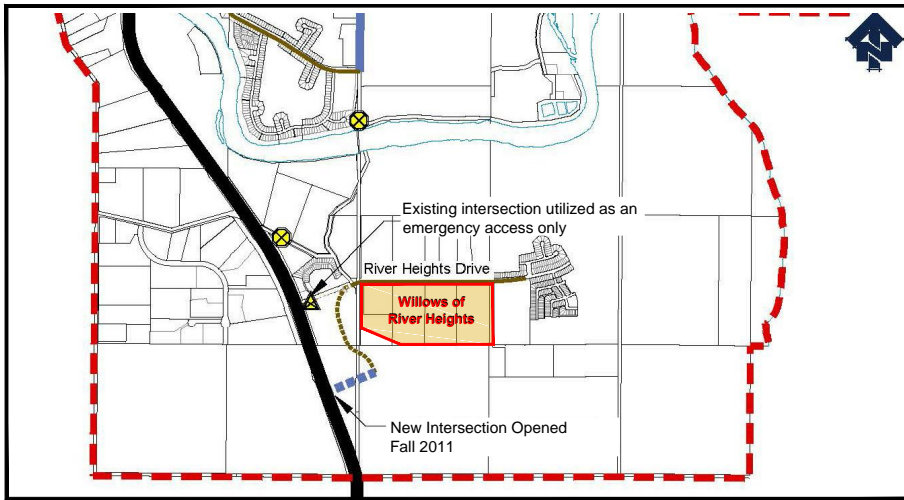
7.2.1 River Heights Drive

The growing population surrounding River Heights Drive and its increased use has led to the requirement of upgrades to this road. Upgrades to River Heights Drive would also be a requirement of the approvals for The Willows of River Heights Neighbourhood Plan, and thereby require a contribution to the financial implications of the upgrade.

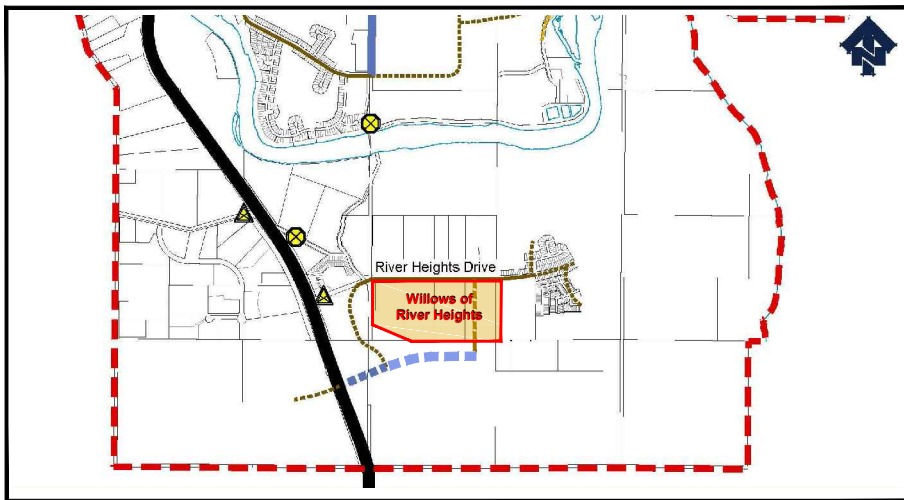
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7.2.2 Interim Emergency Access

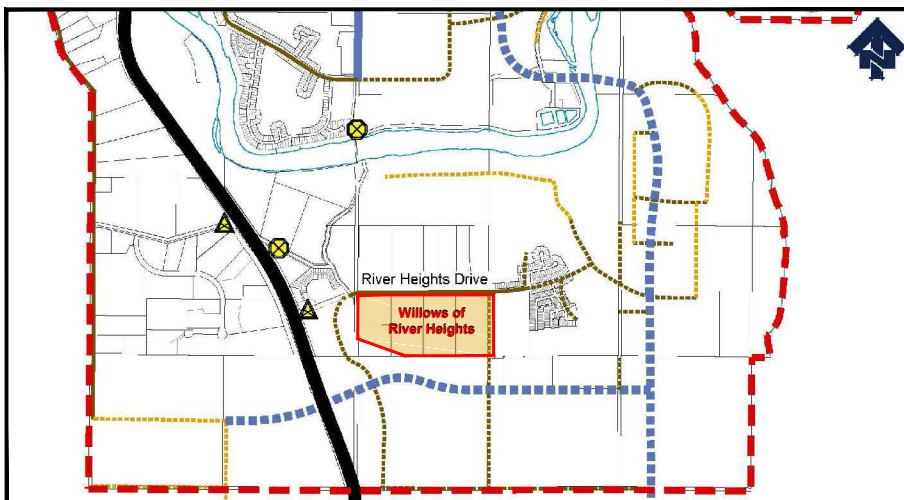
The first access to the WRHNP area will be from River Heights Drive to Willow Drive. Ultimately a second access from River Heights Drive will be constructed as well as an access south, to James Walker Trail. In the interim, a second access into the neighbourhood will be established via an emergency access to James Walker Trail until the permanent, public access is established.



Transportation Network
Stage 1



Transportation Network
Stage 2



Transportation Network
Ultimate

2026 Recommended Future Road Network as per the Town of Cochrane Transportation Plan update 2009

Legend:

- | | |
|-------------------------------|--------------------------|
| Provincial Highway (Existing) | Major Arterial (Future) |
| Major Arterial (Existing) | Minor Arterial (Future) |
| Minor Arterial (Existing) | Major Collector (Future) |
| Major Collector (Existing) | Minor Collector (Future) |
| Minor Collector (Existing) | |

7.3 Pedestrian Circulation Network

The Willows of River Heights Neighbourhood Plan provides a comfortable and safe pedestrian environment. The modified grid design provides short blocks and well-connected pathways, walkways and sidewalks providing the pedestrian easy access to local greenspaces for recreation and gathering and to adjacent developments for retail and employment opportunities. Figure 6 illustrates the pedestrian connectivity of the Neighbourhood Plan and the abundance of pathways and sidewalks to facilitate comfort and convenience in the pedestrian environment.

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Separated sidewalks along the collector system provide a more comfortable distance between the pedestrian and the motor vehicle. A separated sidewalk places the pedestrian several metres from the curb whereas a monolithic sidewalk is built directly adjacent to the curb. This separation results in greater pedestrian protection along busy roads and allows for a more relaxing walking experience.

Monolithic sidewalks will be constructed on both sides of all residential streets within The Willows of River Heights Neighbourhood Plan.

An asphalt surface regional pathway system will run along the Altalink Powerline right of way and the commercial/employment area along the southwest and west sides of the WRHNP area. A public easement will be required along the alignment of the regional pathway between the residential and commercial developments. A local pathway will connect into the WRHNP through the wetland park and continue through the central park.

Where the local path exists adjacent to natural areas it will have a natural trail material surface to minimize environmental impacts. In locations where the local path provides a connection from a sidewalk through a walkway between houses, the surface will be concrete to provide ease of maintenance. The local pathway connections are provided in key locations to reduce walking distances to the regional pathway, greenspaces, and provide short-cuts where pedestrians would logically want them.

The combination of the WRHNP's short blocks, sidewalks and pathways make for a very walkable community. Whether pedestrians are walking to the school site, the central park, around the stormwater management facility or to the future

adjacent local services and retail development there will be multiple routes to get them there.

7.4 Public Transportation

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The WRHNP anticipates a future public transportation route. The route is anticipated to utilize River Heights Drive, Willows Drive and James Walker Trail, which are all collector standard roads or greater. This route will provide the entire WRHNP access to public transportation within 400m walking distance, with the exception of a small area in the southwest portion. This area would likely be within 400m walking distance to a bus stop located in the commercial development to the west, to which the regional pathway will provide access to.

7.5 Access to Adjacent Residential Property

The WRHNP recognizes the requirement to provide uninterrupted access, of a similar or higher standard to the existing access, to the residences currently utilizing the closed road allowance that makes up the east boundary of the WRHNP area (within the existing South Ridge Area Structure Plan area). A new access via Willow Drive, with a connection provided to the existing driveway will be in place prior to construction requiring the existing driveway to be closed.

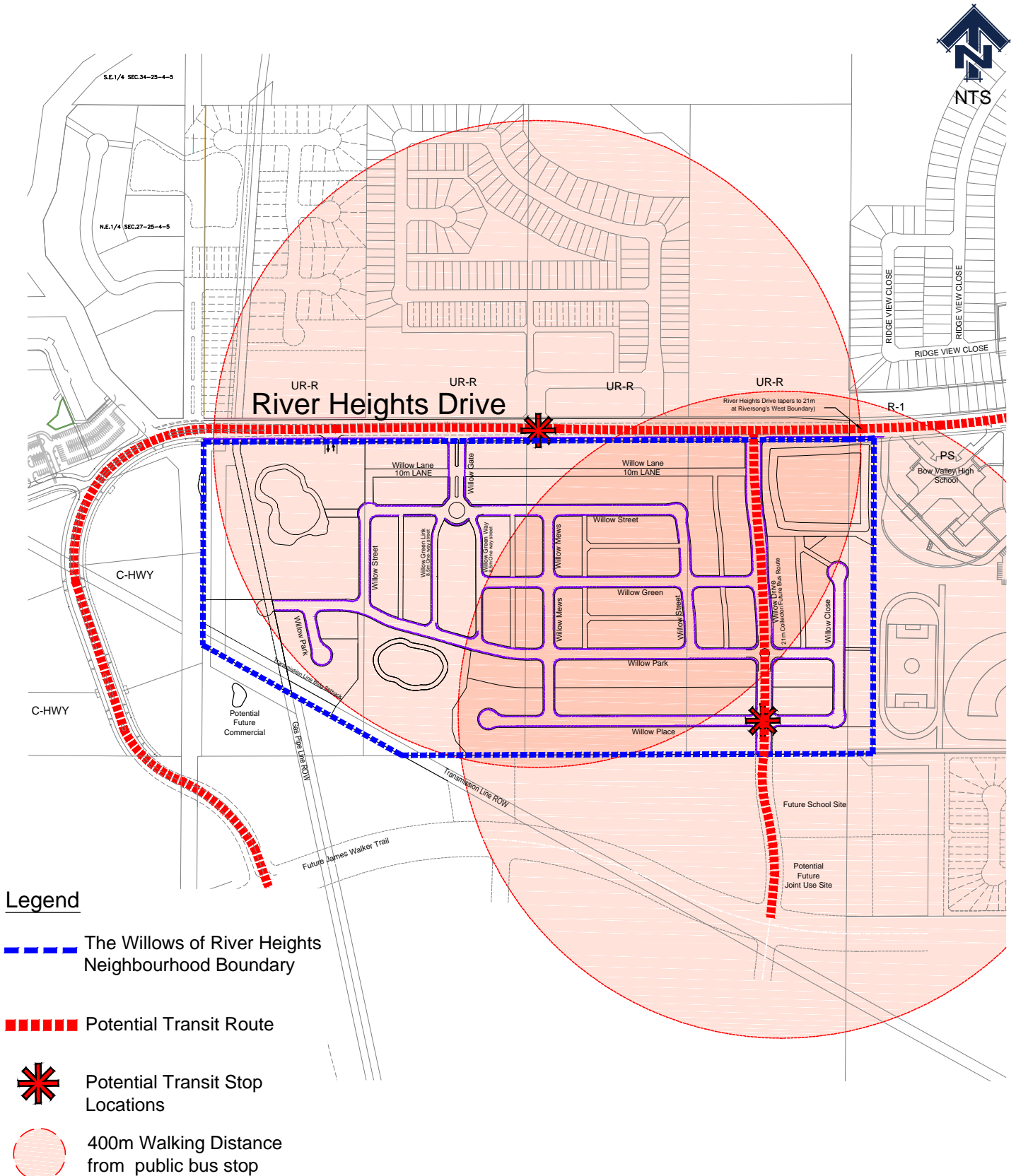


Figure 13:
Potential Public Transportation Route

8.0 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

Crime prevention through environmental design (CPTED) occurs where the built environment is designed in such a way as to reduce the predication of criminal activities and reduce the fear of crime occurring. The Willows of River Heights Neighbourhood Plan is conscious of safety through design and this is incorporated throughout the WRHNP area.

The MDP provides basic criteria for designing communities with CPTED. The criteria and how The Willows of River Heights addresses them is outlined below.

Awareness of the Surrounding Environment

The MDP states that “awareness of the surrounding environment occurs when people can see and understand their surrounding environment through unobstructed sightlines, adequate lighting, and avoidance of hidden spaces”¹¹.

- The Willows of River Heights is a modified grid design which provides unobstructed sightlines along straight roads as well as intersections that provide good visibility in all directions.
- Portions of the Neighbourhood Plan that include longer cul-de-sacs utilize walkways to provide multiple accesses to and from the area to avoid entrapment.
- Street lighting will be provided along all roads and near walkways.

Visibility by Others

- Special attention was given to the placement of pathways and walkways to ensure they are aligned with roadway sightlines and/or highly visible open spaces.
- The playground and community garden within the north portion of the wetland park are both in highly visible locations.

Finding Help

- The majority of The Willows of River Heights residential blocks include lanes. Laned residential areas create a more interactive streetscape, as

¹¹Town of Cochrane Municipal Development Plan, October 2008, Appendix E, page 73

typically there are an increased number of windows on the front of the dwelling units. This will help residents feel more connected to each other and increase the likelihood of helping each other.

- There are multiple pedestrian access points into the community from all directions.

Sightlines

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- Attention will be given to the placement of landscaping features, the growth characteristics of plants and their placement in relation to potentially vulnerable areas throughout the community.
- Walkways are placed at the ends of roadways to permit visibility through them.

Lighting

- Attention will be made to provide street lighting at key locations, and near walkways to allow continued visibility at night.
- Lighting within The Willows of River Heights will be Dark Sky sensitive by not causing glare for drivers or light trespass to neighbours.

Predictable Routes

- The combination of sidewalks, pathways and walkways within the Neighbourhood Plan provide multiple options for reaching destination points. Residents do not have to take the same route every time, nor do they have to retrace their steps to return home after a walk, jog or cycle.
- There are multiple access points into the community from all directions.

Entrapment Spots and Isolation

The MDP defines entrapment spots as “small, confined areas near or adjacent to well-travelled routes that are shielded on three sides by some barriers, such as walls or bushes”¹².

- The Neighbourhood Plan road network does not provide small areas that are shielded on three sides resulting in potential entrapment situations.

¹² Town of Cochrane Municipal Development Plan, October 2008, Appendix E, page 75

Longer cul-de-sacs have access to greenspaces beyond via walkways or lanes.

- Attention will be given to future landscaping plans and the growth patterns of plantings to help ensure future entrapment spots do not occur.
- The regional pathway and adjacent location of the community garden and playground will provide a reason for residents to access the treed area south of the Class III wetland. Crime is less likely to occur if there is a high potential of been witnessed. The adjacent homes, regional path and community garden will increase the safety of this area. This area will be a natural amenity to the community. A strong sense of ownership, or territoriality, encourages individuals to take control of and defend their environment.

9.0 HOUSING DIVERSITY, STREETScape AND ARCHITECTURAL DEVELOPMENT

The Willows of River Heights Neighbourhood Plan will feature a variety of housing forms. Multiple housing options such as single family homes with attached garages, single family homes with detached garages, accessory and garden suites, semi-detached homes, duplexes, townhouses, and stacked multi-family condominiums will be available in the WRHNP.

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Similar to the community of Fireside, the WRHNP will use land use designations as an important tool to help build diversity into its streetscapes. The land use designation that provides the greatest flexibility in the existing Town of Cochrane Land Use Bylaw is the R-2, Residential Single and Two-Dwelling District. This land use, as previously mentioned in Section 6.1, allows single detached houses and semi-detached houses to co-exist within the same block, and under the same land use. The WRHNP also anticipates a potential future progressive Land Use District that will take the R-2 flexibility one step further by permitting townhouse development to be integrated with single and semi-detached dwellings. This would provide a tool by which the developer and builders could provide the type of housing that residents want and place it where it is desired. Each street would be able to develop with unique character and housing forms.

The future architectural controls will support The Willows of River Heights neighbourhood theme that will be reflected throughout the entire neighbourhood. This theme will be enhanced through the colour palette which will include cool river tones. The natural stone and wood finishing materials (or materials designed to emulate these natural materials) on the houses will add design details to further support the community theme.

Variations in the streetscape will occur through different housing forms existing side-by-side, varying front setbacks, a variety of lot widths and different housing heights all adhering to The Willows of River Heights architectural guidelines (which shall be submitted prior to development).

Affordable housing will be considered within the Neighbourhood Plan. The Cochrane Society for Housing Options has different needs to fulfill and the developer will work with the Society to determine some of these needs can be met in The Willows of River Heights.

10.0 NEIGHBOURHOOD PLAN STATISTICS

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NEIGHBOURHOOD PLAN STATISTICS	Frontage (m)	Hectares (+/-)	Acres (+/-)	Units	% of GDA
TOTAL LAND AREA		30.51	75.39		
Land Ownership		30.36	75.02		
Road Closure Area		0.15	0.37		
Environmental Reserve		1.04	2.57		
GROSS DEVELOPABLE AREA (GDA)		29.47	72.82		100.0%
TOTAL RESIDENTIAL		18.36	45.37		62.3%
Phase 1					
Residential Frontage	717	2.50	6.18		
Anticipated # of lots:				100	
Phase 2					
Residential Frontage	1145	3.99	9.86		
Anticipated # of lots:				167	
Phase 3					
Residential Frontage	698	2.40	5.93		
Anticipated # of lots:				103	
Townhouse Development	277	0.94	2.32		
Anticipated # of units:				55	
Phase 4					
Residential Frontage	1209	4.11	10.16		
Anticipated # of lots:				170	
Phase 5					
Comprehensive Multi-Family Development		2.81	6.94		
Anticipated # of units based on 15 upa				104	
Phase 6					
Residential Frontage	125	0.80	1.98		
Anticipated # of lots:				17	
Comprehensive Multi-Family Development		0.81	2.00		
Anticipated # of units based on 15 upa				30	
HIGHWAY COMMERCIAL		0.40	0.99		1.4%
PUBLIC SERVICE		4.34	10.72		14.7%
Municipal Reserve (PS-MR)		3.07	7.59		10.4%
Public Utility Lot (PS-PUL)		1.27	3.14		4.3%
ROADWAYS		6.35	15.69		21.5%
TOTAL UNITS & DENSITY					
Total number of units					
Anticipated.				746	
Density					
Anticipated.			25.3 upha		10.2 upa

Table 2: Neighbourhood Plan Statistics

11.0 DENSITY

The Willows of River Heights Neighbourhood Plan provides an anticipated density of 25.3 units per hectare (10.2 units per acre). This figure is higher than 19.8 to 24.7 units per hectare (8 to 10 units per acre) required in the RH-ASP and the requirement of 19.8 units per hectare in the 2008 MDP.

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12.0 UTILITY SERVICING

12.1 *Water Main Distribution*

The water distribution system for The Willows of River Heights is supplied by the St. Mary's Reservoir and pump house, located east of the WRHNP area. This Reservoir services existing and future development on the East and West sides of Highway 22.

The watermains for the WRHNP will connect to the existing watermain in River Heights Drive at the intersections with Willow Gate and Willow Drive. From this watermain loop the whole subdivision can be serviced. No offsite watermain is required for this development.

12.2 *Sanitary Servicing*

Sanitary servicing for The Willows of River Heights will be provided by a gravity main system. This system will tie into the existing sanitary main stub that is located in River Heights Drive at the Northeast corner of the site that was constructed with the Riversong development. The existing Riversong sanitary trunk sewer crosses the Bow River at the existing sanitary siphon East Crossing as specified in the 2005 Sanitary Master Plan Drawings.

12.3 *Stormwater Management*

The stormwater for The Willows of River Heights will be managed by a gravity system that directs the collected stormwater to the proposed stormwater management facility located in the Northeast corner of the site. The stormwater collected in this facility will be treated to Alberta Environment specifications and

discharged into the existing storm system that was installed with the Riversong development.

The existing wetlands located in the west and southwest corner of the WRHNP area are being retained and will be sustained by accepting some back of lot overland drainage. The stormwater management facilities will be designed to accommodate up to the 1 in 100 year storm event.

12.4 *Shallow Utilities*

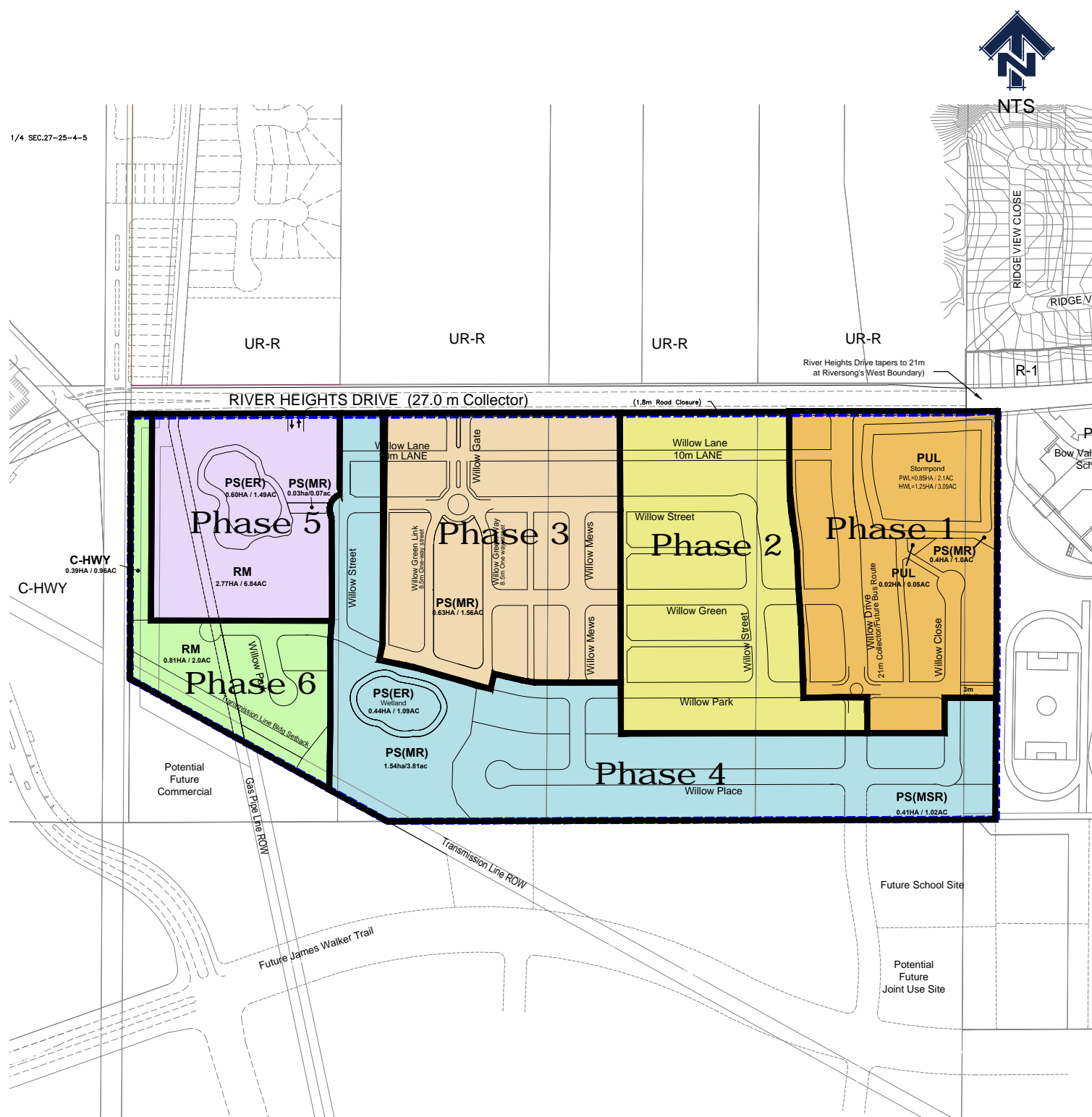
Shallow utilities for The Willows of River Heights area will be provided by an extension of the existing facilities that are installed in River Heights Drive. All power, telephone and cable television distribution system will be constructed underground within the development area.

13.0 PHASING

The development of The Willows of River Heights will begin in the northeast corner of the community and continue south and west from there. This will allow the construction of the stormwater management facility within the first phase, as well as the access into the community via River Heights Drive and Willow Drive. Figure 15 illustrates the approximate boundary of the first phase. Subsequent phases will come forward as individual landowners are ready to proceed with development.

THE
WILLOWS
OF RIVER HEIGHTS

Figure 15:
Willows of River Heights Phases



14.0 WETLAND PROTECTION AND COMPENSATION

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The Willows of River Heights Neighbourhood Plan proposes the protection and enhancement of two existing wetlands, the Class IV (wetland Site 80 in the Sweetgrass BIA) and one of the Class III wetlands (wetland site 91 in the Sweetgrass BIA), see Figure 4. Wetland 80 was identified as a significant wetland in the BIA prepared for the River Heights Area Structure Plan as well as in the BIA prepared for the WRHNP. This wetland will be left in its natural state. Low impact cluster residential development is proposed on the multi-family site surrounding this wetland to help protect it and maintain its natural function.

Wetland 91 (Class III wetland) and adjacent treed area is being retained as a result of recommendation in the BIA. The treed portion of this site does not meet the criteria to qualify for Environmental Reserve, but is an attractive area and would be a valuable natural amenity to the neighbourhood. The WRHNP recognizes the Town of Cochrane's desire to protect natural amenities as advocated through *"Pathway to the Future: 13"* in the Cochrane Sustainability Plan *"building upon the strengths of our natural heritage"*. Wetland materials from other on-site wetlands will be salvaged and transplanted to Wetland 91 to further enhance this natural amenity, as well as to the storm pond area to create additional habitat areas in that location. Through this method of retention and enhancement of existing wetlands, the WRHNP will strive for a 'no net loss' of wetland materials and function.

Any required wetland compensation will be to the satisfaction of Alberta Environment.

Table 3: Wetland Classes and Areas

	Site	Area (ha)
Class I		
	85	0.044
Subtotal		0.044
Class II		
	114	0.053
Subtotal		0.053
Class III		
	90	0.009
	82	0.433
	91	0.310
	89	0.236
	113	0.158
	79	0.027
	86	0.014
	83	0.013
	87	0.012
	81	0.010
Subtotal		1.222
Class IV		
	80	0.446
Subtotal		0.446
Total Wetlands (all classes)		1.765

Table 4: Wetland Compensation

	Area (ha)
Total Wetlands (all classes)	1.765
Wetlands Retained (Wetlands 80 & 91)	<u>0.756</u>
Wetlands Subject to Financial Compensation	1.009

Table 5: No Net Loss of Wetland Habitat

	Area (ha)
Existing Wetland (all classes)	1.765
Wetlands Retained (Wetlands 80 & 91)	0.756
Wetland habitat area to be transplanted or planted	1.009
Net loss of wetland habitat area	0

APPENDIX

APPENDIX A: MUNICIPAL ENVIRONMENTAL IMPACT STATEMENT (MEIS)

**APPENDIX B: PLANNING PRINCIPLES OF THE MUNICIPAL DEVELOPMENT PLAN
SUSTAINABILITY MATRIX**

APPENDIX C: THE COCHRANE SUSTAINABILITY PLAN

APPENDIX D: OPEN SPACE CONCEPT

APPENDIX E: WRHNP BOUNDARY WITHIN THE ASP NEIGHBOURHOOD AREAS

APPENDIX A: MUNICIPAL ENVIRONMENTAL IMPACT STATEMENT (MEIS)

In accordance with Section 6.3.2 of the *Town of Cochrane Municipal Development Plan* a review of each of the factors contributing to the Municipal Environmental Impact Statement has been completed and outlined below. Further information can be found in the Supporting Reports identified in Section 4.0

A. Fish and Wildlife:

The WRHNP lies outside of the important regional wildlife corridor along the Bow Valley, and development here will have a minor effect on wildlife corridors in the Cochrane region. The proposed retention of Wetland 91 will conserve a significant portion of the most diverse connected habitat on the property.

B. Vegetation:

With the proposed retention of Wetland 91, a significant component of the floral biodiversity will be conserved, including Aspen Shrub, Tall Shrub, Silverberry Shrub, and native grassland.

C. Ecologically Significant Lands:

The BIA recognizes one wetland that is ecologically significant and warrants protection as Environmental Reserve. This wetland, Wetland 80, was also identified in the BIA prepared for the River Heights Area Structure Plan.

The BIA also acknowledges a second site in the WRHNP area that it recommends be retained as Municipal Reserve. The area does not qualify for Environmental Reserve protection, but would be a valuable amenity to the community if retained.

D. Surface and Bedrock Geology:

The Geotechnical Evaluations performed by McIntosh Lalani state that the general subsurface stratigraphy of the site consists of surficial organic topsoils overlaying veneer of silt and lacustrine clay deposits atop of glacial till soils. Further details of the Geotechnical Evaluation can be found under Section 4.1.1.

E. Soils and Terrain:

A review of the Geotechnical Evaluations and the Phase 1 ESAs found that organic topsoil was encountered throughout the Plan area ranging in thickness from 75mm to 330mm. The topography of the site is rolling, with low areas dotted across the

site. One Class IV wetland is located in the northwest portion of the site while other, lower class wetlands are scattered throughout the Plan area.

F. Slopes:

There are no unstable slopes on the property. The lands are rolling and generally slope from the southwest to the northeast corners of the Plan area.

G. Geotechnical Investigation:

Geotechnical Investigations were prepared by McIntosh Lalani Engineering Ltd. and was submitted to the Town of Cochrane under separate. See Section 4.1.1 for further information.

H. Flood Potential and Proposals for Mitigation:

There are no floodway or flood fringe lands within The Willows of River Heights Neighbourhood Plan area.

I. Stormwater Study:

The stormwater management plan will be in accordance with the approved Stormwater Management Plan prepared by Westhoff Engineering Resources Inc. titled Staged Master Drainage Plan for Cochrane Crossing – Keyland Lands, November 2005, which accounts for the WRHNP lands.

J. Water Quantity and Quality:

The stormwater management facilities proposed in the development have been designed to provincial standards to ensure release rates and water quality standards are met.

K. Air Quality:

The Willows of River Heights is predominantly a residential neighbourhood with natural open space and wetlands. The design of the community is such that pedestrian and bicycle transportation are encouraged as an alternative to internal use of motor vehicles. Although any development that results in the removal of existing vegetation will have some impact on existing air quality, the long term effects when considering the replacement of many of the existing vegetation by developer landscaped areas and private landowner plantings, the development is not expected to result in any appreciable reduction in the current air quality.

L. Visual Resources:

The rolling terrain of the land and the existing wetlands are visually appealing. The proposed development realizes the opportunity to retain the existing uplands adjacent to the wetlands to enhance the existing Class IV and Class III wetlands. The existing tree stands that will be protected will visually retain elements of the pre-development environment.

M. Land and Resource Use:

The Willows of River Heights looks to mitigate and minimize the impacts of development through:

- Preservation of the Class IV wetlands and one Class III wetland and associated upland habitat as recommended in the Biophysical Impact Assessment prepared by Sweetgrass Consulting Ltd.,
- Relocation of the less significant wetlands vegetation to enhance the wetlands being protected,
- Placing clustered residential development around the Class IV wetland to help reduce the impact of development on these lands and maintain natural drainage to the wetland.

N. Cultural and Heritage Resources:

Historical Resource Impact Assessment (HRIA) were prepared by Historical Resource Management Ltd. and by ANC Lavalin Environment. Historical Clearance was granted for both reports.

O. Construction and Demolition Waste Management:

A construction and demolition waste management plan will be provided with each Subdivision application and Development Permit application to ensure proper procedures are followed at the time of construction.

APPENDIX B: PLANNING PRINCIPLES OF THE MUNICIPAL DEVELOPMENT PLAN SUSTAINABILITY MATRIX

Addressing the Sustainability Matrix is required by the MDP for new developments. A summary of how The Willows of River Heights Neighbourhood Plan meets the five Planning Principles of the Sustainability Matrix, is outlined below.

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A. *Principle 1: Responsible Growth Management*

“Responsible growth management demands that the Town make every effort to meet the needs of a growing population, in an ecologically-aware and efficient manner, using limited natural, human, built, and financial resources”.

The Willows of River Heights is a logical location for a new Cochrane community. The growing population surrounding River Heights Drive and its increased use has led to the requirement of upgrades to this road. Upgrades to River Heights Drive would also be a requirement of the approvals for The Willows of River Heights Neighbourhood Plan, thereby a contribution to the financial implications of the upgrade.

The design of The Willows of River Heights occurred in an ecologically sensitive manner. Natural features of the community are maintained where possible to help protect the natural ecology of the site. Areas that are to be developed include a variety of housing options through an integration of single-detached, semi-detached and townhouse dwellings units to accommodate the different life stages of future residents. Clustered residential development is envisioned around the Class IV wetland to help protect and maintain this natural amenity.

B. *Principle 2: Social & Cultural Well Being*

“Social well-being and a high quality of life is a reflection of living in a community that creates a safe, healthy, and comfortable environment in which to live, work and play.”

The Willows of River Heights provides residents with an integrated variety of residential housing forms and multiple opportunities for social interaction. Details of how the WRHNP achieves this are provided in Section 5.3.1.

Several elements of a pedestrian oriented development are found in the layout of The Willows of River Heights Neighbourhood Plan as described further in Section 7.3. The active presence of the future residents is facilitated through the enhanced pedestrian environment, including parks and open spaces for social interaction, which in turn increases the safety of the community. This addresses one of the Crime Prevention Through Environmental Design (CPTED) principles. Further details of how The Willows of River Heights Neighbourhood Plan addresses CPTED can be found in Section 8.

The parks and natural greenspaces provide recreational opportunity for residents. In addition, multiple sidewalks and pathways provide a variety of connection alternatives throughout the community, see Section 7.3. A public art piece which will be placed in the feature entrance park looks to use locally produced art work, designed to reflect the community theme.

Local employment opportunities are located immediately west of the Neighbourhood Plan area, as well as within the future school site, giving residents the options for work within their community.

Figure 13 illustrates a potential future transit route.

C. Principle 3: Environmental Stewardship

“Environmental stewardship highlights the Town’s commitment to careful and responsible management of our natural resources and ecological assets”

The Willows of River Heights will protect and enhance the two wetlands and the existing riparian areas adjacent to these wetlands. Encouraging low impact clustered residential development adjacent to the Class IV wetland will help protect and maintain that wetland by permitting much of the existing natural drainage into that wetland to continue.

While the Class III wetland and adjacent treed area to the south of it that is being protected did not meet all of the requirements for environmental reserve status, the BIA by Sweetgrass Consultants recognizes the amenity that this area will provide to the community. Therefore this area is incorporated into the municipal reserve to help maintain the site’s natural heritage.

D. Principle 4: Economic Vitality

“Economic vitality provides the foundation for a healthy, diverse, active, prosperous, and resilient economy.”

The Willows of River Heights provides a high density residential community adjacent to existing and future highway commercial areas, as well as a future Village Centre development. Both of these adjacent uses are identified in the River Heights Area Structure Plan, while The Willows of River Heights is identified as a residential community. The high density residential development provided by The Willows of River Heights will help sustain the future commercial uses.

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E. Principle 5: Community Engagement

“Community engagement builds trust, ensures accountability, and improves the quality of decision making as the public plays a valuable role in formulation plans and developing services.”

Community engagement played an important role in The Willows of River Heights approval process. The development of The Willows of River Heights Neighbourhood Plan resulted in numerous meetings and discussions with adjacent landowners. A Public Consultation event was held at the Town of Cochrane Ranche House where members of the public were invited to review and comment on the plan.

APPENDIX C: THE COCHRANE SUSTAINABILITY PLAN

Thirteen Pathways to the Future

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The Cochrane Sustainability Plan was adopted by Council in May 2009. The plan provides thirteen (13) Pathways to the Future to help guide future development within Cochrane. These pathways are grouped into four (4) categories.

1. *We Build a Culture of Responsibility*

Pathway 1: We are a socially responsible and empowered community.

The WRHNP exhibits social responsibility by providing an integrated building form, high density community adjacent to future school sites, commercial development and village centre. The Willows of River Heights integrated housing forms will enable the neighbourhood to build out in a unique manner where residents will be able to choose from a variety of housing forms in virtually any location. Residents will play a significant role in the ultimate built form of the community. Design elements such as the greenspaces and parks, the community garden and public art will help create a sense of place and ownership to their community. Residents of The Willows of River Heights will feel connected to Cochrane through their enjoyment of their surroundings and natural amenities, and therefore empowered to become a voice in Cochrane's future.

The community garden and other gathering places within the community offer the opportunity for residents to get acquainted with each other and become involved in their community.

2. *We are Responsible Citizens of the Planet*

Pathway 2: We treat water as a precious resource.

Pathway 3: We use energy responsibly and innovatively.

Pathway 4: We contribute to the solution on climate change.

The Willows of River Heights provides a density of 25.5 units per hectare (10.3 units per acre) that exceeds the 19.3 units per hectare (8.0 units per acre) as required by the MDP. Higher density communities are more environmentally

responsible than lower density communities as there is less land form disturbance for servicing, less vehicular impact (shorter drive times and reduced road construction), and greater opportunity for residents to use alternate forms of transportation.

The protection of natural open space amenities and encouraging low impact development around the Class IV wetland while introducing an innovative residential land use district encouraging integrated built forms will create an environmentally responsible new community within the Town of Cochrane.

3. *We Live Locally*

Pathway 5: We consume the bounty of our local economy.

Pathway 6: Our local economy is healthy and diverse.

Pathway 7: Everyone has an opportunity to pursue their potential in Cochrane.

Pathway 8: We are a caring community that lives and celebrates together.

The WRHNP will provide homes for approximately 1885 new residents to Cochrane. These residents will utilize the nearby local convenience commercial centres, the future Village Centre, as well as the downtown core for their shopping, entertainment and service needs. The development of the community will help provide jobs to local trades people.

The local school site will provide educational needs, jobs and volunteering opportunities for WRHNP residents. Active play areas will provide families with the opportunity to meet and socialize together; the community garden site will allow residents to grow their own produce while also interacting and socializing with their neighbours. These amenities will provide a social focus for the community.

4. *Cochrane is a Complete Community*

Pathway 9: Everyone has a roof over their head.

Pathway 10: There's enough room for everything a community should have.

Pathway 11: Wherever you are in Cochrane, you're close and connected.

Pathway 12: There are diverse options for getting around.

Pathway 13: We build Cochrane on the strengths of our natural and cultural heritage.

The Willows of River Heights offers diverse range of housing options integrated throughout the community. A potential resident of the WRHNP could be a new home buyer considering a townhouse or semi-detached housing type which offers more affordability than a single detached home. This same buyer could then move into a single family home, small lot laned or front-drive home, as they progress through life and perhaps start a family. Once the retirement years approach, lifestyle changes may result in that buyer looking to one of the maintenance free, multi-unit options that are could be included on the west side of the community. A resident who chooses to live in the WRHNP area could live their entire life within the community that offers housing appropriate for all stages of life and affordability levels.

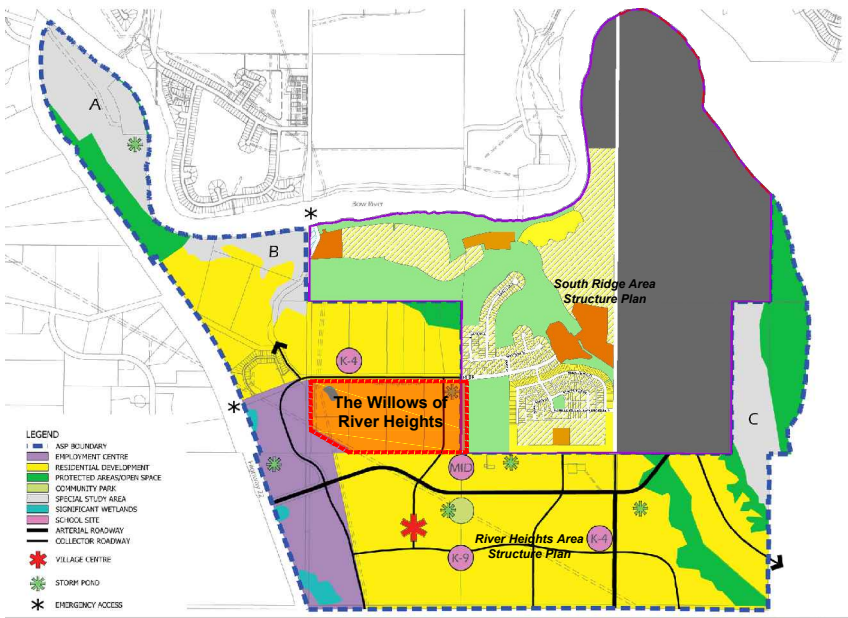
The regional and local pathway system will provide residents with convenient, safe access to the amenities within their community, as well as services and jobs outside of their community.

The local school provides opportunities for education, jobs and volunteering within the community.

When considering the variety of housing styles, the close proximity of schools, retail opportunities and jobs, The Willows of River Heights will offer residents the benefits of a complete community.

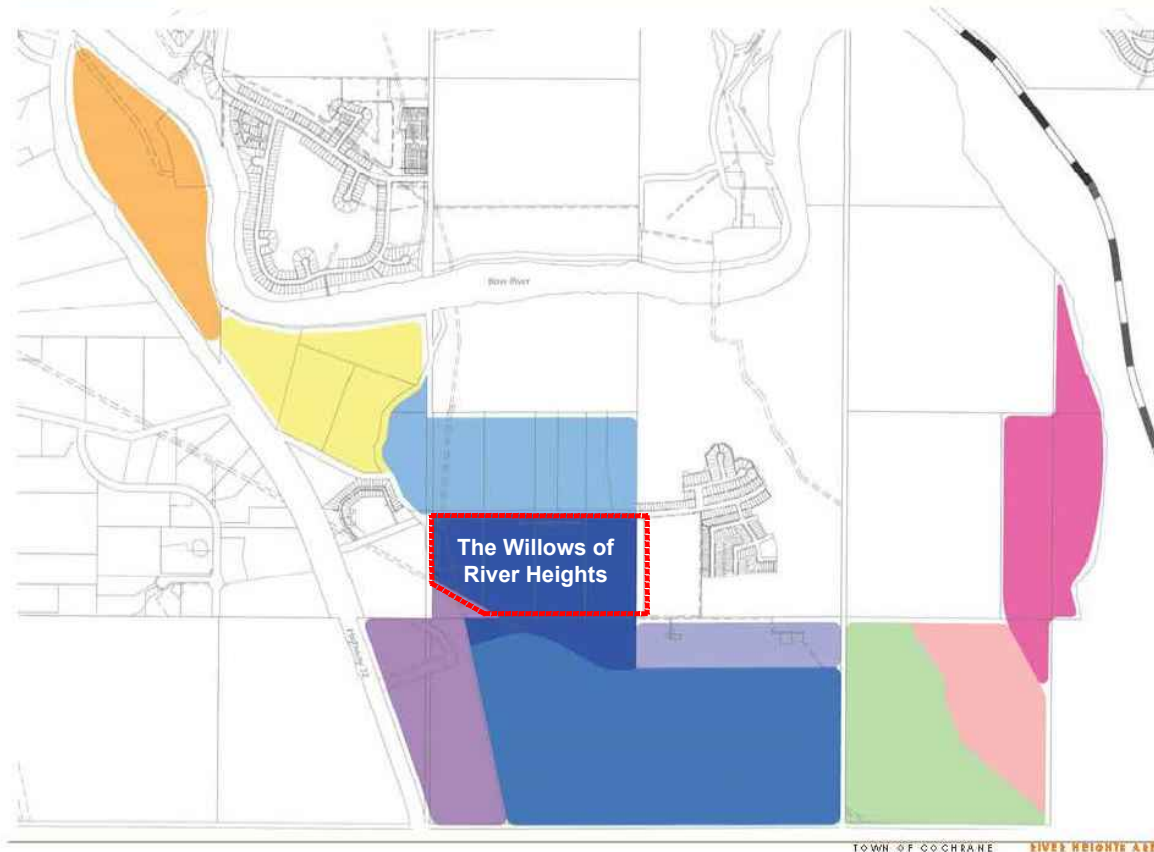
APPENDIX D: OPEN SPACE CONCEPT

APPENDIX E: WRHNP BOUNDARY WITHIN THE ASP NEIGHBOURHOOD AREAS



RIVER HEIGHTS AREA STRUCTURE PLAN
neighbourhood plan areas

FIGURE 12



NOT TO SCALE

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October 2011

