



## Stage 1 Neighbourhood Plan

**Tamani**  
COMMUNITIES

Prepared by:  
Brown & Associates Planning Group

In Conjunction with:  
Focus Corp.

May 28, 2010

**7. NEW BUSINESS**

7(c) Riversong Design Brief and Stage 1 Neighbourhood Plan

Resolution #150/06/10 Moved by Councillor Chester that Council adopts by resolution the proposed Riversong Design Brief and Stage 1 Neighbourhood Plan, dated May 28, 2010.

Amendment

Resolution #152/06/10 Moved by Councillor McFadden that Council amend Resolution #150/06/10 by including direction that Administration continue discussions with the Rocky View School Board regarding pathway access to the high school from River Heights Crescent.

Carried Unanimously

Vote on Resolution #150/06/10 as amended

Carried Unanimously

## **TABLE OF CONTENTS**

<b>1.0</b>	<b><i>INTRODUCTION.....</i></b>	<b><i>1</i></b>
1.1	Policy Context and Purpose of the Plan .....	1
1.2	Location and Adjacent Uses.....	1
1.3	Land Titles and Ownership .....	3
1.4	Description of Land .....	3
1.5	History of Development .....	7
1.6	History of Riversong and Current Land Use Designations .....	8
<b>2.0</b>	<b><i>RIVERSONG STAGE 1 NEIGHBOURHOOD PLAN.....</i></b>	<b><i>13</i></b>
2.1	Design Elements .....	13
2.2	Housing Diversity and Streetscape .....	17
2.3	Pedestrian Oriented Development .....	19
2.4	Transit Oriented Design .....	19
2.5	Crime Prevention through Environmental Design .....	24
<b>3.0</b>	<b><i>TRANSPORTATION NETWORK.....</i></b>	<b><i>26</i></b>
3.1	Constraints .....	26
3.2	Thresholds.....	27
<b>4.0</b>	<b><i>LAND USE.....</i></b>	<b><i>34</i></b>
4.1	Residential.....	35
4.2	Public Service .....	35
4.3	Institutional.....	35
4.4	Commercial .....	36
<b>5.0</b>	<b><i>NEIGHBOURHOOD PLAN STATISTICS .....</i></b>	<b><i>38</i></b>
<b>6.0</b>	<b><i>DENSITY.....</i></b>	<b><i>38</i></b>
<b>7.0</b>	<b><i>PHASING .....</i></b>	<b><i>38</i></b>
<b>8.0</b>	<b><i>UTILITY SERVICING.....</i></b>	<b><i>41</i></b>
8.1	Sanitary Servicing.....	41
8.2	Water Main Distribution.....	41
8.3	Stormwater Management .....	41
8.4	Shallow Utilities .....	42
<b>9.0</b>	<b><i>MEETING THE NEEDS OF THE TOWN OF COCHRANE.....</i></b>	<b><i>44</i></b>
9.1	Municipal Environmental Impact Statement (MEIS) .....	44
9.2	Addressing Sustainability .....	46

<b>9.3 The Cochrane Sustainability Plan – Thirteen Pathways to the Future.....</b>	<b>48</b>
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<b>APPENDIX.....</b>	<b>51</b>
<b>Appendix A: RIVERSONG STAGE 1 NEIGHBOURHOOD PLAN.....</b>	<b>52</b>
<b>Appendix B: CROSS SECTION ‘D’ – MODIFIED RESIDENTIAL ROAD.....</b>	<b>54</b>
<b>Appendix C: CROSS SECTION ‘E’ – MODIFIED COLLECTOR ROAD.....</b>	<b>55</b>
<b>Appendix D: PHOTOGRAPHS OF EXISTING RIVERSONG HOUSING DEVELOPMENTS .....</b>	<b>56</b>
<b>Appendix E: HISTORICAL RESOURCE IMPACT ASSESSEMENT CLEARANCE LETTER.....</b>	<b>59</b>
<b>Appendix F: ENVIRONMENTAL SITE ASSESSMENT LETTER UPDATE.....</b>	<b>61</b>
<b>Appendix G: LETTER FROM ALBERTA TRANSPORTATION RE: RIVER AVENUE BRIDGE.....</b>	<b>62</b>

### **TABLE OF FIGURES**

Figure 1: Location Plan .....	2
Figure 2: Aerial Photograph of Existing State of Land.....	4
Figure 3: Location of Riversong within the South Ridge ASP.....	9
Figure 4: Approved Land Use By-law 19/2006 .....	10
Figure 5: Approved Land Use By-law 17/2007 .....	11
Figure 6: Context Plan .....	12
Figure 7: Riversong Stage 1 Neighbourhood Plan.....	14
Figure 8: Key Elements Plan.....	18
Figure 9: Pathway Connectivity Plan .....	21
Figure 10: Potential Public Transportation Route .....	22
Figure 11: Potential School Bus Route .....	23
Figure 12: Stages 1 & 2 of the Transportation Network .....	28
Figure 13: Stages 3 & 4 of the Transportation Network .....	29
Figure 14: Emergency Access Routes.....	32
Figure 15: Proposed Land Use Redesignation.....	37
Figure 16: Neighbourhood Plan Statistics .....	39
Figure 17: Riversong Stage 1 Phasing Plan.....	40
Figure 18: Conceptual Utility Alignment.....	43



## 1.0 INTRODUCTION

### 1.1 Policy Context and Purpose of the Plan

The Town of Cochrane Council adopted its new *Municipal Development Plan* (MDP) in October 2008. Under the policies of the MDP, an Area Structure Plan followed by a Neighbourhood Plan shall be prepared prior to development of new communities within the Town of Cochrane. Section 14.3.2 of the MDP outlines the requirements of an Area Structure Plan and a Neighbourhood Plan.

In general terms, the role of the Area Structure Plan is to provide the general policies to direct the community development, while the Neighbourhood Plan provides the detailed design information and makes the connection between the Area Structure Plan policies and the built form of the community. An Area Structure Plan is a statutory plan while a Neighbourhood Plan is a non-statutory plan.

The Riversong Stage 1 Neighbourhood Plan (RS1NP) seeks to facilitate and continue the planning and development of the Riversong Stage 1 area. The governing *South Ridge Area Structure Plan* (SR-ASP) was originally adopted by the Town of Cochrane in 1994, with amendments adopted in 2001 (Bylaw 18/01) and 2002 (Bylaw 25/01).

The RS1NP provides detail on how the community of Riversong will continue to be developed. Special attention will be given to streetscapes and the pedestrian environment to ensure that Riversong is a community where residents can walk or bicycle for recreation, and that the connections are in place for accessing the local school and community greenspaces.

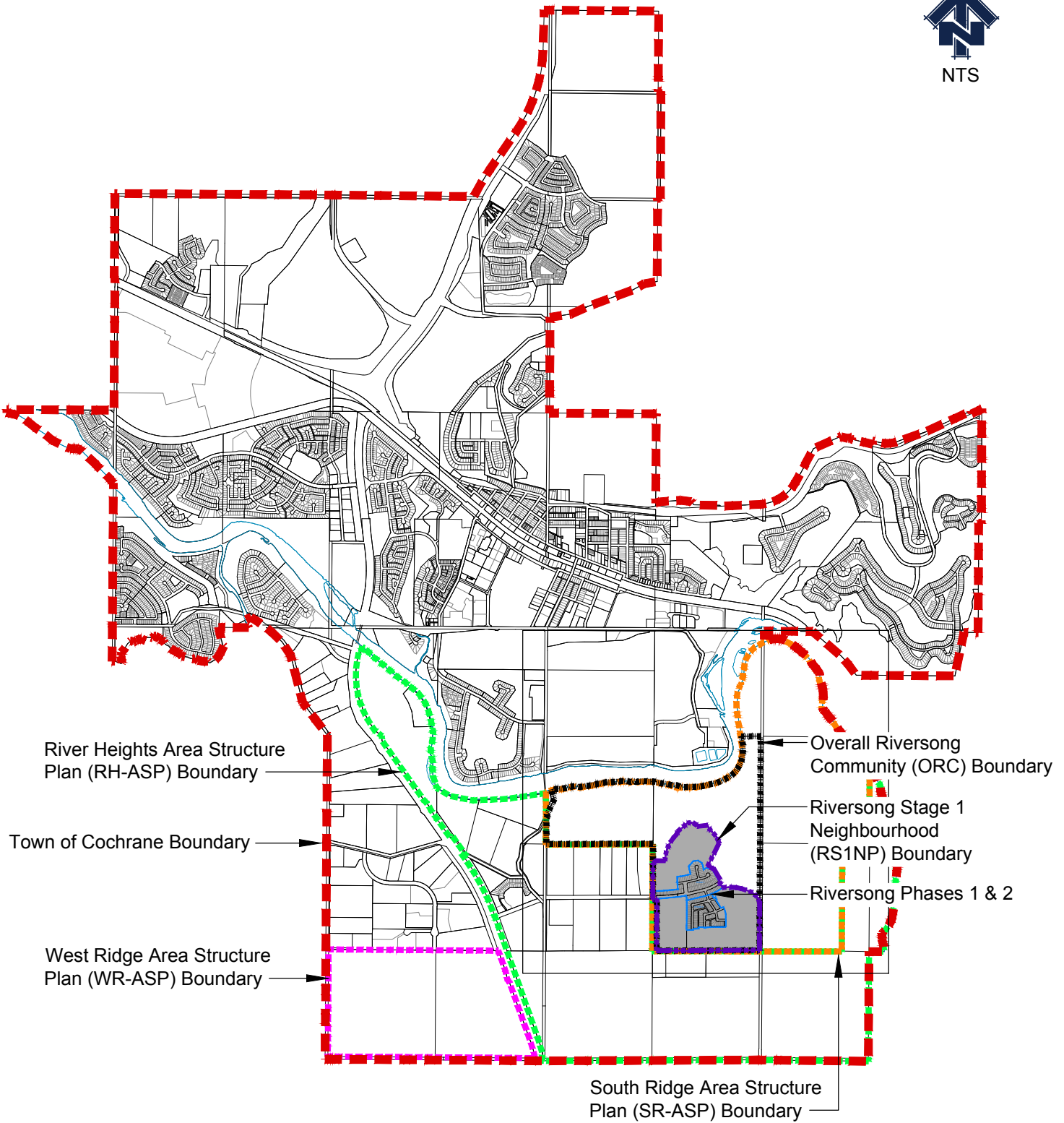
For discussion purposes, the entire community of Riversong (Riversong Stage 1 and all future Stages) will be referenced as the Overall Riversong Community (ORC), and the lands directly affected by this Neighbourhood Plan will be referenced as the Riversong Stage 1 Neighbourhood Plan (RS1NP). These boundaries can be seen on Figure 1.

### 1.2 Location and Adjacent Uses

The RS1NP area is located within the south sector of the Town of Cochrane and comprises approximately 54.34 hectares (134.27 acres). As shown in Figure 6, the area is bounded by:

- Future Riversong residential development to the north, with the Bow River beyond;
- An existing and operating gravel extraction operation on the east;
- Agricultural lands and future residential to the south;
- Bow Vista residential development and Agricultural lands to the west.

The Town of Cochrane is in the early planning stages of preparing the River Heights Area Structure Plan. This Plan will provide policy direction of the



south and west sides of the ORC, and will take the ORC into consideration. See Figure 1 for the River Heights Area Structure Plan area relative to Riversong.

### 1.3 Land Titles and Ownership

The remaining undeveloped lands within the RS1NP fall under the Land Title Number 091 103 850 +121 and are owned by 1300534 Alberta Ltd. These lands are currently managed by Tamani Communities.

The lands are legally defined as portions of the NE ¼ of Sec.26-25-4-W5 and portions of Lot 1 Block 9 in Plan 0412318.

DESCRIPTIVE PLAN 0412318

BLOCK 9

LOT 1

EXCEPTING THEREOUT:

PLAN	NUMBER	HECTARES (ACRES)	MORE OR LESS
SUBDIVISION	0910527	6.820 (16.9)	
SUBDIVISION	0911859	2.02 (5.00)	
SUBDIVISION	0912151	6.245 (15.43)	

As Phases 1 and 2 have already been developed, private ownership exists within these areas. The Bow Valley High School is also built and operating, and falls under the ownership of the Rocky View School Division, and the Town of Cochrane has taken ownership of the tot lot park in Phase 2. The legal description of these lands is outlined below:

- Private Resident Ownership – Plan 0912151, Blocks 13-16;
- Private Resident Ownership – Plan 0910527, Blocks 10-11;
- Rocky View School Division - Plan 0911859, Block 8, Lot 1, Area 8.938 hectares (22.09 acres) more or less;
- Town of Cochrane – Plan 0912151, Block 17, Lot 1MR, Area 0.406 hectares (1 acres) more or less.

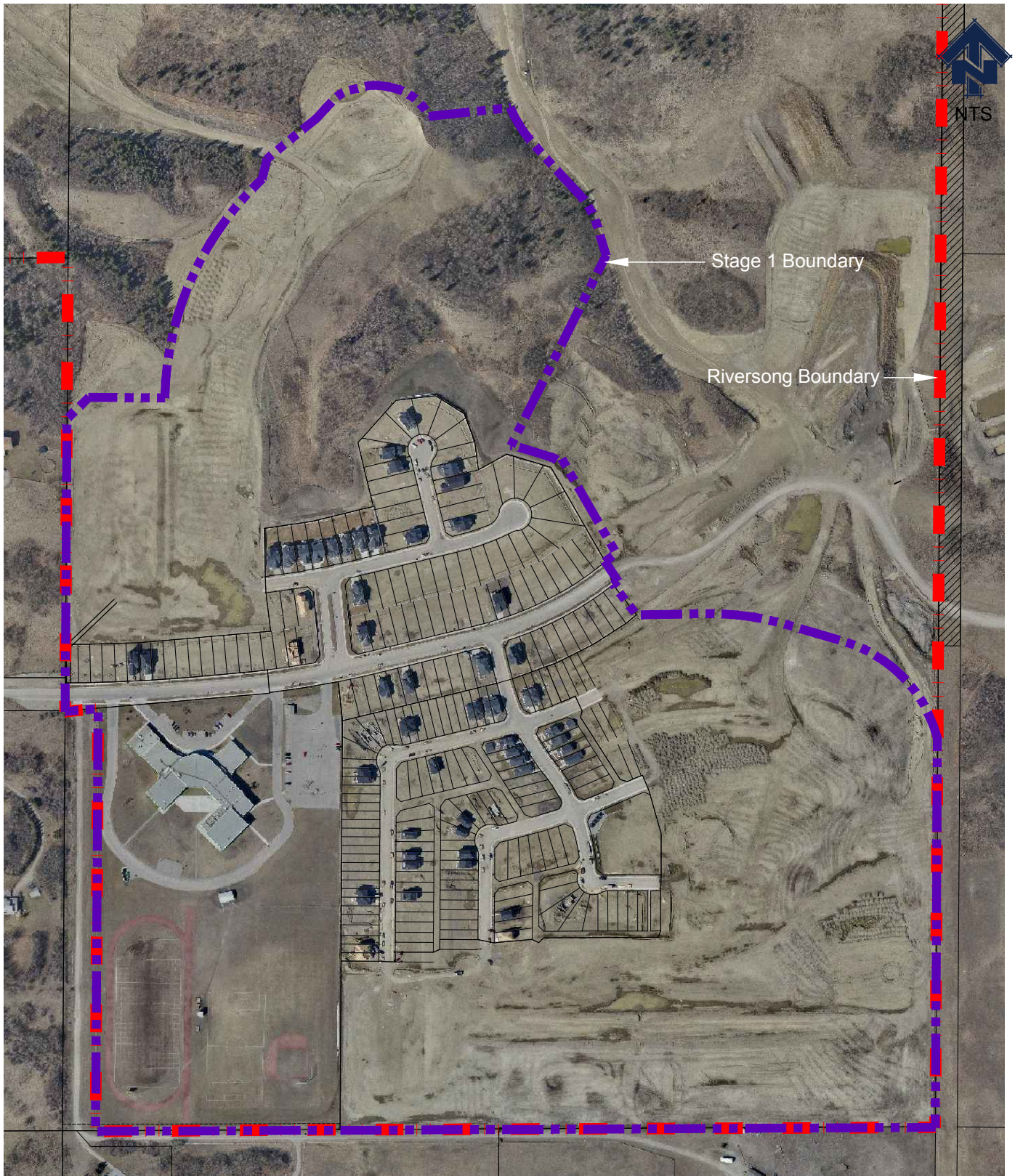
### 1.4 Description of Land

#### 1.4.1 Natural State

The ORC consists of generally rolling, hummocky lands with a large escarpment. The southern portion of the lands, referred to as the upper bench lands, are higher and flatter when compared to the northern, lower bench, ORC lands. The central portions of the lands consist largely of steep escarpment slopes. North of the escarpment, the lands flatten again in the lower bench area.

Some of the studies identified in Sections 1.4.1.1 through 1.4.1.4 were performed prior to the development of RS1NP Phases 1 and 2. It is important to note that as a result of previous approvals, the entire plan area has already been





stripped and graded; therefore some of the studies supporting this report are older than what would typically be submitted with a Neighbourhood Plan.

#### **1.4.1.1 Geotechnical Investigation**

A Geotechnical Evaluation<sup>1</sup> dated August 2000 was prepared by Golder Associates Ltd. for the ORC. The report focused on addressing the Town of Cochrane requirements for development on terrain with slopes greater than 15% and provided recommendations for:

- 1) the stability of the steep slope along the watermain alignment;
- 2) the development setbacks along the east plateau; and
- 3) the foundation conditions for the road connector between Highway 22 and River Heights Drive.

Recommendations relative to 1 and 3 above have been followed during construction for Phases 1 and 2. The recommendations relative to 2 will be addressed at a future stage.

In summary the Geotechnical Evaluation's recommendations for the ORC have been addressed for areas that concern the RS1NP lands, and other areas will be addressed with the future development.

#### **1.4.1.2 Historical Resource Impact Assessment**

A Historical Resource Impact Assessment<sup>2</sup> (Report 80-181) was prepared for the SR-ASP by Lifeways of Canada Ltd. in 1981. The report identified five prehistoric archaeological sites, one paleontological site, and one historic site. Of these sites, four were stated to require additional investigation. Only one of these four sites (EhPo-49) was located within Riversong's boundary. This site (EhPo-49) was reviewed by Dr. Brian Reeves of Lifeways of Canada in 1998, at which time he concluded that the site was a natural formation and not a cultural feature. Dr. Reeves recommended to Alberta Community Development that mitigation requirements originally recommended be rescinded. This recommendation was approved, and a copy of the letter of approval is provided as Appendix F. No further historical resource investigations are required within Riversong.

#### **1.4.1.3 Environmental Site Assessment**

A Phase 1 Environmental Site Assessment<sup>3</sup> (ESA) was completed by Almor Testing Services Ltd. on December 20, 1997 for the ORC. This report

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<sup>1</sup> Geotechnical Investigation For The Proposed Cochrane Crossing Development, Golder Associates Ltd., August, 2000

<sup>2</sup> Historical Resources Impact Assessment Robinson Lands, ASA Permit 80-181, Lifeways of Canada, December, 1980

<sup>3</sup> Level One Environmental Site Assessment for Southland Development Corp., Almor Testing Services Ltd., December 20, 1997

concluded that no environmental impairment existed, and that no further investigation was required. An updated letter was provided by Almor Testing Services Ltd. dated October 12, 2006 that further supported the findings in the original report; that no further environmental investigation is required. A copy of this letter is provided as Appendix F.

#### **1.4.1.4 Traffic Impact Analysis**

##### **(a) Internal Road Review**

An internal road review was preformed by D.A. Watt and detailed in a letter report<sup>4</sup> dated October 3, 2007. The letter report evaluates both the short and the long term traffic scenarios.

The short term traffic scenario is based on the existing surrounding development, RS1NP development up to and including Phase 4 and the current road network of the single route into the development being from Highway 22 via River Heights Drive.

The long term scenario is based on complete build-out of the ORC and all internal roads, full build-out of other future developments in the area, the New East-West arterial road, New North-South arterial road, future North-South collector west of the school site and the proposed New River Bridge being in place.

The result of the traffic review was to recommend that:

- Riverside Way be designed and built as a Modified Collector Road (Cross-Section 'E' in Appendix C)
- River Heights Boulevard from River Heights Drive to River Heights Crescent, where it runs parallel to the east boundary of Riversong be designed and built as a 15m Modified Residential Road (Cross-Section 'D' in Appendix B).
- River Heights Boulevard from the end of the recommended Modified Residential Road to the east boundary of Riversong, be designed and built as an 19.3m Avenue Road<sup>5</sup> (City of Calgary Alternative Street Design Standard).

These conclusions have been acknowledged by the developer and will be implemented into the future construction in the RS1NP and the ORC. While the Modified Collector recommendations will be implemented, it has been noted by the developer's engineer that this

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<sup>4</sup> Riversong Development, Cochrane – Road Standard Review, D.A.Watt Consulting, February 3, 2005

<sup>5</sup> The City of Calgary Design Guidelines for Subdivision Servicing, August 2004, Appendix II-B, Sheet 21



cross-section must also accommodate a water line, therefore the cross-section will be built 27.0 metres wide rather than the recommended 25.55 metres. All other design recommendations will remain the same.

#### **(b) External Road Review**

Additional transportation network analysis has been recently undertaken on the transportation network surrounding and providing access to the RS1NP and the ORC. Further discussion on these findings can be found in Section 3.0.

#### **1.4.2 Existing State**

Subsequent to previous approvals, the entire RS1NP area has been stripped and rough graded in anticipation of the continuation of development. Figure 2 illustrates the existing state of the RS1NP area through an aerial photograph.

The ORC has land use approved under Bylaws 19/2006 and 17/2007. Further discussion on the existing land uses can be found in Section 4.0.

Riversong Phases 1 and 2 are close to completion and have many residents. As of March 2010, Riversong Phases 1 and 2 have received all Construction Completion Certificates (CCC's) and a number of Final Acceptance Certificate (FAC's).

### **1.5 History of Development**

The development history of Riversong began several years prior to the 2008 MDP requirement of a Neighbourhood Plan to guide subdivision approvals. Prior to the 2008 MDP, development was guided by a Concept Plan approved by Council. Phases 1 and 2 of Riversong are developed, and began development under the direction of a Concept Plan which was conditionally approved in March 7, 2001. The history of development, governing policies and approvals granted in Riversong are detailed below.

December 1994	The South Ridge Area Structure Plan was adopted through Bylaw 14/94;
March 7, 2001	The Crossing Concept Plan (now called Riversong) was conditionally approved;
August 13, 2001	An amendment to the SR-ASP was adopted through Bylaw 18/01;
September 9, 2001	An amendment to the SR-ASP was adopted through Bylaw 25/01;
September 25, 2006	Bylaw 19/2006 was approved and designated Land Use throughout Riversong;

June 27, 2007	An amended a portion of the land use Bylaw 19/2006 was approved through Bylaw 17/2007;
Spring, 2008	Construction of Riversong Phases 1 & 2 began;
October 14, 2008	The Cochrane Town Council approved the new Municipal Development Plan;
Fall/Winter, 2008	Riversong Phases 1 & 2 were completed and occupancy began;
May 2009	The Cochrane Sustainability Plan was adopted by Resolution by the Cochrane Town Council;
Summer 2009	Continued construction awaits further subdivision approvals subsequent to Design Brief and Neighbourhood Plan direction.

## 1.6 History of Riversong and Current Land Use Designations

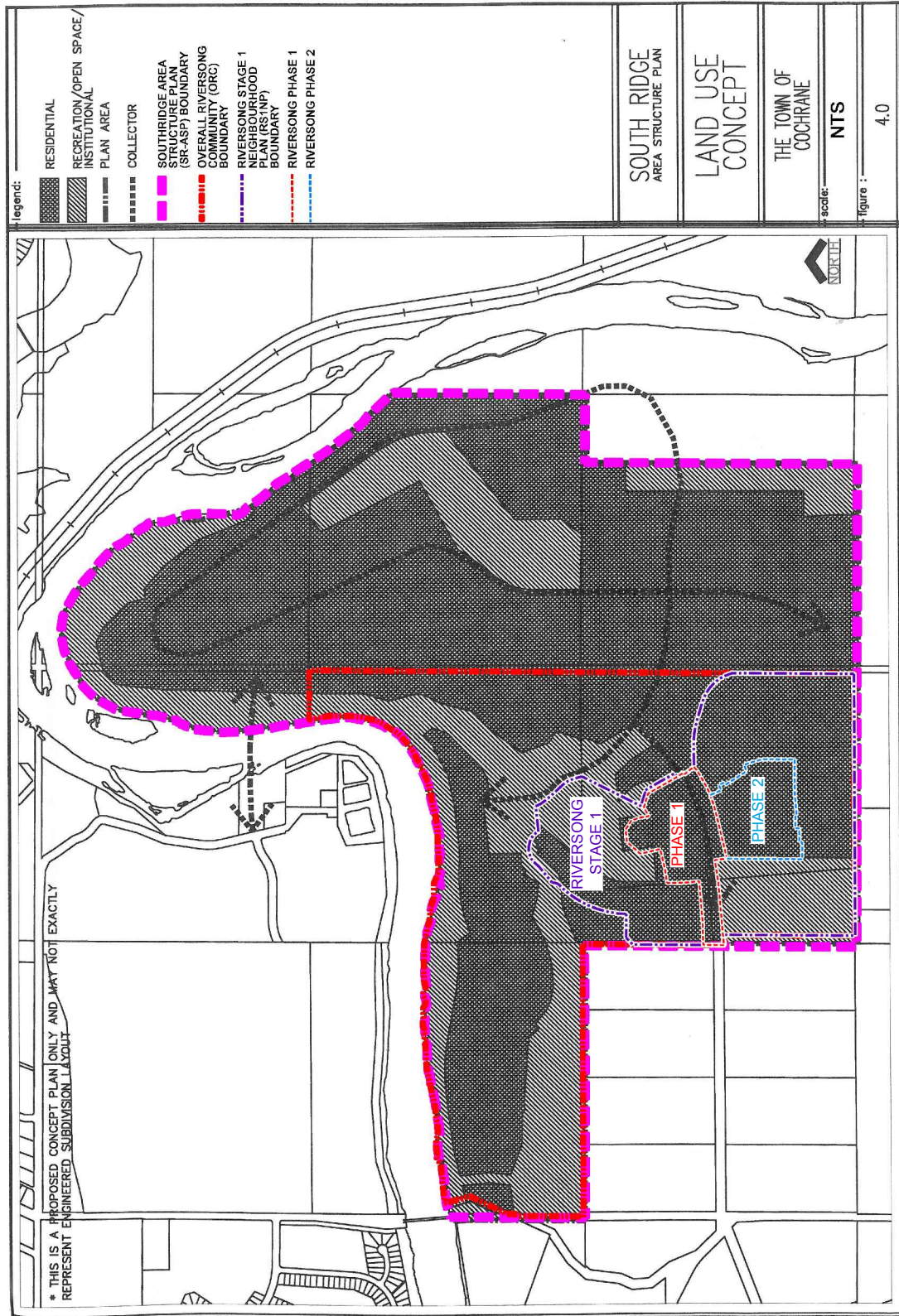
Figure 3 shows the Riversong community within the Land Use Concept plan of the SR-ASP. The Riversong Stage 1 Neighbourhood Plan provides the required development details as directed in Section 14.3.2 of the 2008 MDP. Riversong Stage 1 also meets the major planning directives of the 2008 MDP and the Cochrane Sustainability Plan. These are outlined in Section 9.0.

As noted in Section 1.1, all of the lands within the ORC have approved Land Use through Bylaw 19/2006 and Bylaw 17/2007. The land uses designated through each bylaw, as shown on Figures 4 and 5, are as follows:

Bylaw 19/2006: (see Figure 4)	R-1 (Residential Single-Detached Dwelling District) R-2 (Residential Single and Two Dwelling District) R-M (Residential Multi-Dwelling District) P-S (Public Service)
Bylaw 17/2007: (see Figure 5)	Amended a portion of R-1 to R-2 Amended a portion of R-2 to R-M

In accordance with the provisions of the Municipal Development Plan, a Neighbourhood Plan is required prior to subdivision approval.





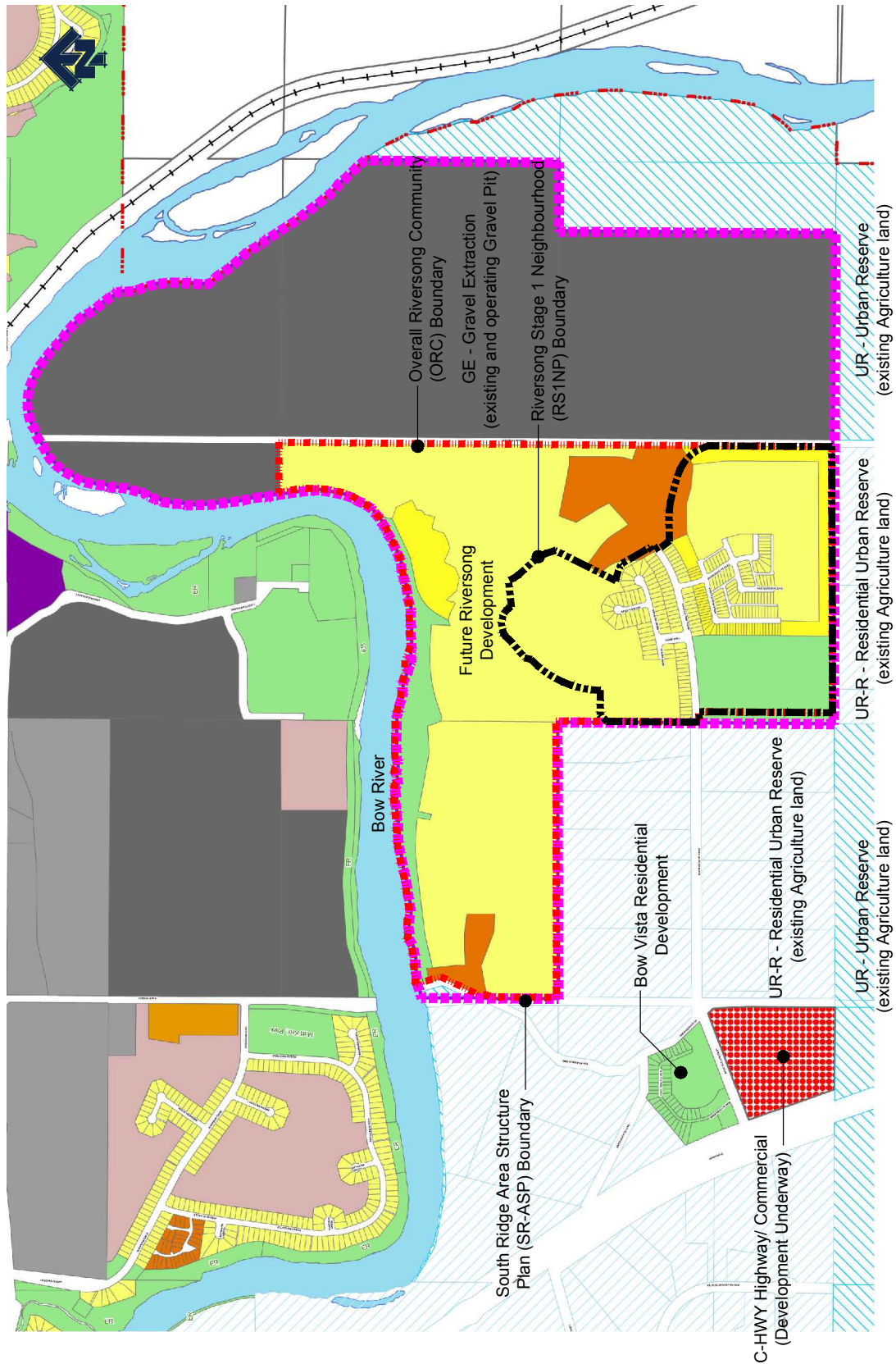
**Figure 3:**  
Location of Riversong Stage 1 within the  
South Ridge ASP Land Use Map



BYLAW 19/2006 Version 2  
Schedule A







**Figure 6:**  
Context Plan

## **2.0 RIVERSONG STAGE 1 NEIGHBOURHOOD PLAN**

The Riversong Stage 1 Neighbourhood Plan (RS1NP) includes 54.34ha (134.27ac) within the SR-ASP area. The boundary of the RS1NP was drawn to include a portion of River Heights Drive, and the remaining residential areas that extend beyond the currently developed Phases 1 and 2 in the upper bench area. The boundary also includes the existing Bow Valley High School (land use designation PS-MSR) and a portion of the escarpment as this will allow the completion of a large portion of the Riversong pathway system. An illustration of the Neighbourhood Plan can be seen in Figure 7.

The existing development in Riversong consists of two Phases which provide 111 front drive lots, 76 laned lots and 44 semi-detached lots.

All of the remaining developable land within the RS1NP is designated R-1 or R-2. In order to provide for a greater variety of housing, and thereby increase the density and intensify the land use within the RS1NP area, land use amendments are put forth under this Plan. The proposed land use amendments are discussed further in Section 4.0.

### **2.1 Design Elements**

The land Riversong occupies contains varied topography and significant natural amenities due to the naturally rolling lands, the escarpment and the proximity to the Bow River. The layout of the community respects these natural features, and protects the escarpment and the areas adjacent to the Bow River as environmental reserve (ER). Protecting these areas as ER will ensure that these natural features are available to the entire community as well as adjacent communities to enjoy.

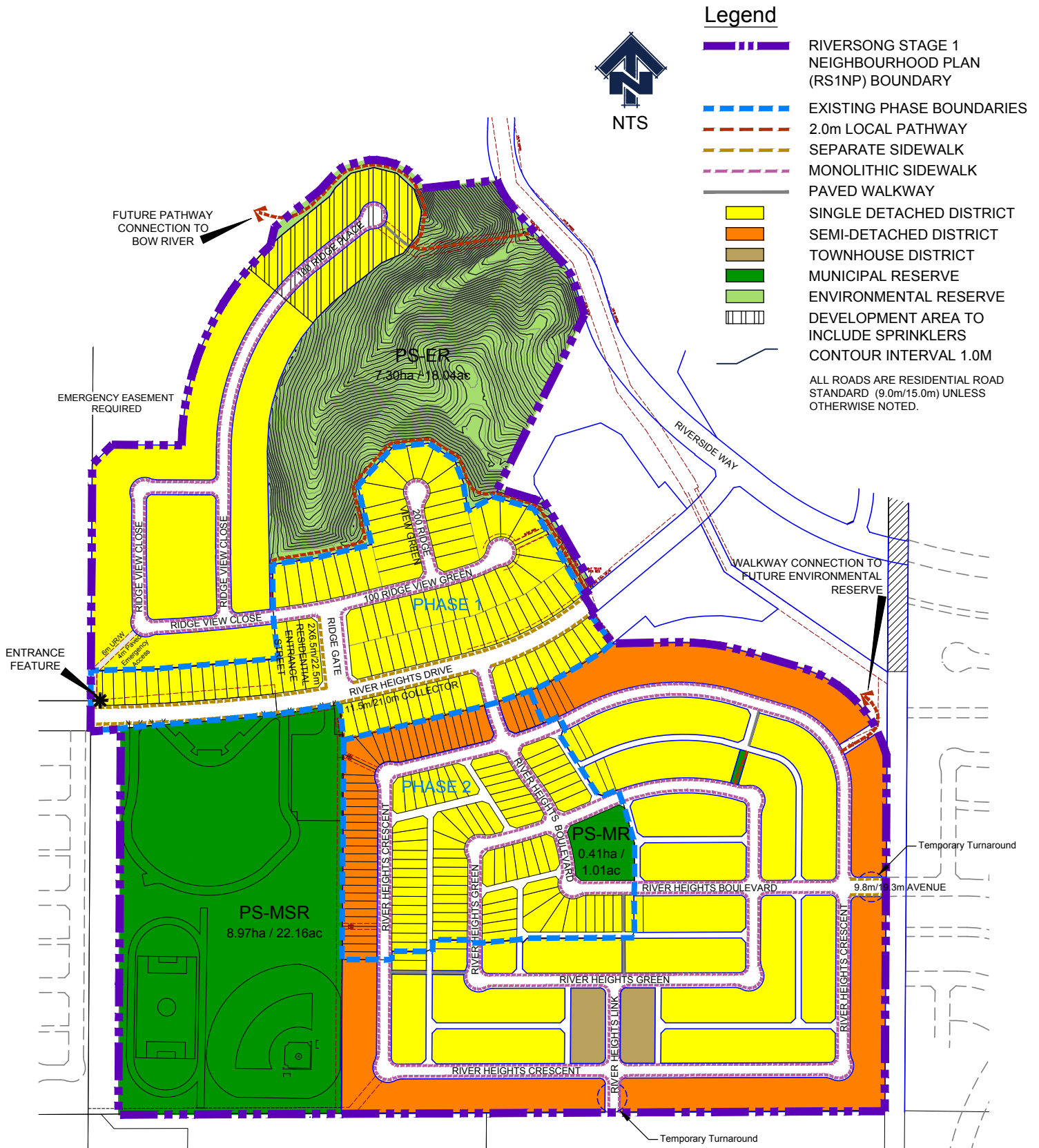
Riversong will continue to provide the high standard of architectural details, previously endorsed by the Town, and found in the community today. Figure 8 illustrates the other key elements of the RS1NP.

#### **2.1.1 Entrance Feature**

An entrance feature welcoming residents into the community is proposed on the north side of River Heights Drive at the community boundary. This feature will be located adjacent to the emergency access, but placed such that it will not interfere with emergency service vehicles from utilizing the emergency access.



# Riversong Neighbourhood Plan



**Figure 7:**  
Riversong Stage 1  
Neighbourhood Plan

## **2.1.2 Design Elements of the Residential Areas**

### **2.1.2.1 Residential Area South of River Heights Drive**

The residential area south of River Heights Drive, in the RS1NP, is envisioned to provide interest in the streetscape through varied housing styles.

This area of the RS1NP provides semi-detached housing along the perimeter and laned single detached housing throughout the interior, with the exception of a proposed section of townhouse units flanking River Heights Link, the southern most access point into Riversong. The purpose for placing the semi-detached housing along the perimeter of this residential area is to provide a varied streetscape, and integrate the semi-detached units with the laned single detached housing throughout this area. This integration maintains a variety of housing throughout this residential area.

### **2.1.2.2 Residential Area North of River Heights Drive**

The north residential area in the RS1NP is designed to utilize the viewpoints and the natural features of the land. Many of the houses in this area back onto the escarpment which is a unique land feature and an amenity to the community. This area of the RS1NP provides front drive lots and estate lots.

## **2.1.3 Design Elements of the Internal Road Layout**

The RS1NP internal road layout respects the natural topography of the land. To this end, cul-de-sacs are utilized adjacent to the escarpment to minimize the impact of the roads on the escarpment, while a modified grid network is utilized on the lands not adjacent to the escarpment.

A modified grid road network has been provided throughout the residential area south of River Heights Drive. The advantages of a modified grid road network are the reduction of vehicular conflicts as the occurrence of four way intersections is minimized, and shorter blocks which increase the walkability of the area.

The residential area to the north of River Heights Drive has more physical restrictions due to the escarpment, and therefore utilizes a P-loop and cul-de-sacs. The advantages of cul-de-sac areas are a reduction of vehicular impact on the streets due to no through roads. Potential pedestrian connectivity limitations are mitigated through the inclusion of walkways.

#### **2.1.4 Connectivity**

The escarpment and the Bow River are natural amenities of the Riversong community that will draw residents out of their homes to enjoy their outdoor environment. The sidewalk and pathways system will be there to facilitate the safe enjoyment of the community.

The RS1NP offers a well connected sidewalk and pathway system that links the local playground to the abundance of natural environmental reserve and the local High School. Strategically placed walkways and pathways mean that residents can walk safely and comfortably to any of these local amenities. Where appropriate, walkways are placed to bisect long blocks to allow residents more direct access to their destination. Sidewalks are provided on both sides of all roads to aid walkability. Further discussion on pedestrian oriented design can be found in Section 2.3.

#### **2.1.5 Local Playground**

The ORC will include two tot lot parks. The MDP provides guidelines for Tot Lots. These guidelines state that the recommended size for a Tot Lot is 0.40 hectares (1.0 acre) and the catchment area is a 500 metre to 1 kilometre radius.

The first tot lot park is already constructed in Phase 2 of Riversong Stage 1, in the upper bench lands. This 0.40 hectare (1.01 acre) park is located south of River Heights Drive. This park is centrally located within this higher density, southern residential area and is within a 500 metre walking distance to all homes in this area of Riversong with the exception of the houses in the cul-de-sac at the top of the escarpment. These homes will be within a 500 metre walking distance to the second tot lot park in the lower bench lands. All of the homes within the ORC will be within a 1 kilometre walking distance to a tot lot.

#### **2.1.6 Bow Valley High School**

The existing and operating Bow Valley High School, at Riversong's entrance on River Heights Drive, is an amenity to the community and will continue to be an important element of the community's identity.

The school is placed at the entrance of the community on the higher, flatter lands in Riversong. School playfields are best suited for flatter lands, which occur in the south portion of Riversong. The benefit of the school placed at the entrance of the community is the reduced traffic impact on the residential roads.

The school offers the opportunity for students, teachers and parents to walk to the school for education, jobs or volunteering. Riversong's social development will grow as families become involved in school activities and meet each other



on the school playfields, in the greenspaces, and on the community pathways and sidewalks.

## **2.2 Housing Diversity and Streetscape**

South of River Heights Drive a mix of housing styles will be available. This narrow Residential Single-Detached Dwelling District (R-1) will provide laned lots. Rear garage homes with front porches, short front setbacks, sidewalks on both sides of the street and high architectural detail requirements are envisioned here. Each of these elements contributes to an active, pedestrian oriented streetscape. The narrow R-1 lots will provide a more affordable opportunity for residents of Cochrane to own a single detached home.

A Residential Single and Two Dwelling District (R-2) has been proposed across from the narrow R-1 lots on many of the streets south of River Heights Drive. The placement of the semi-detached units across the street from the narrow single detached laned units integrates the housing options throughout this residential area. Visual interest is added to the streetscape by integrating the different housing types, and housing variety is maintained throughout this portion of the RS1NP.

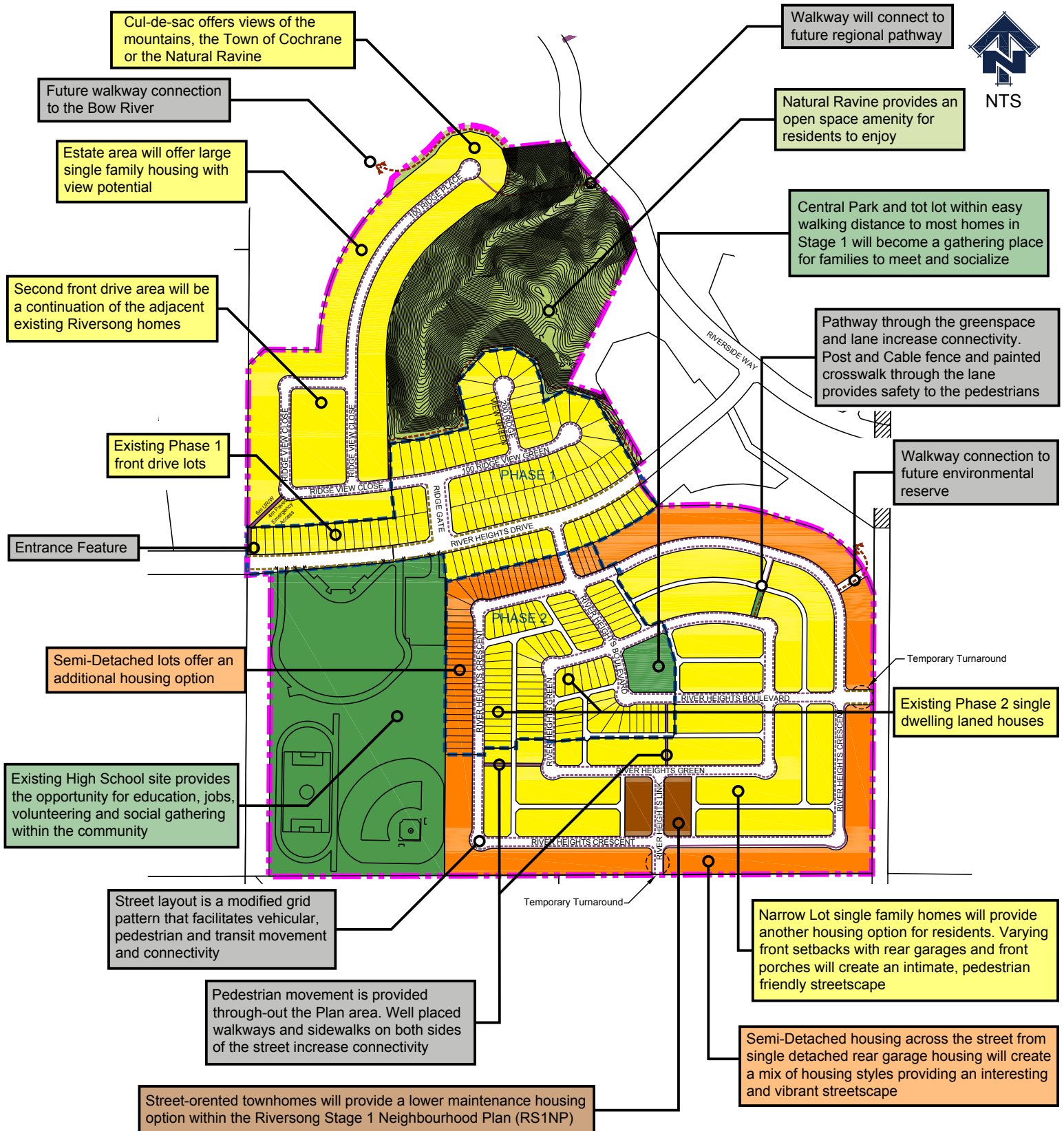
The proposed Residential Multi-Unit Dwelling District (R-3) area will provide a townhouse development within the RS1NP, south of River Heights Drive. This will provide entry level housing opportunities in Riversong and add further variety to the streetscape.

The north side of River Heights Drive will provide a mix of front drive lots and estate lots, many of which overlook the escarpment. Large-lot estate housing will be provided in the northern portion of the cul-de-sac with lot sizes transitioning southward to match the existing lot sizes in Riversong Phase 1. This area provides the opportunity for residents of Riversong to live in a front-drive single-detached dwelling.

The range of residential land use designations and lot sizes in Riversong provides life-cycle housing opportunities to future residents. A resident of Riversong could initially move into a townhouse (R-3 District), and then expand into a semi-detached (R-2 District) or narrow lot single detached dwelling unit (R-1 District) as they age or start a family. Eventually this same resident may desire to attain a front-drive home or large-estate home (R-1 District), both of which are also available within Riversong. At later stages in life, a resident can downsize to a semi-detached (R-2 District) or townhouse dwelling (R-3 District) but still live within the community they have become accustomed to.

Photographs of existing Riversong housing can be found in Appendix D. These photographs provide examples of the quality and variety of lot sizes and associated housing currently found in Riversong.

# Riversong Neighbourhood Plan



**Figure 8:**  
Key Elements

## **2.3 Pedestrian Oriented Development**

As previously noted in Section 2.1.4, the RS1NP recognizes that the escarpment and the Bow River are natural amenities of Riversong which will draw residents out of their homes to enjoy their outdoor environment. Therefore, to facilitate the existing and future resident's safe enjoyment of the community, the RS1NP offers numerous pathways along with sidewalks on both sides of the street to aid connectivity.

Special attention has been taken to ensure pedestrian connectivity throughout the RS1NP area. Sidewalks and pathways lead residents directly to the parks and the escarpment and create a safe walking environment throughout. The future regional pathway system will be constructed along Riverside Way and will connect residents with the Bow River once future development stages occur. Cross walks will be provided at the school site and other locations where deemed necessary to aid in the safety of the pedestrian environment and promote walking and cycling to the local school. Residents will have multiple route options for walking and cycling in their own community.

A wide utility corridor in the northeast portion of the southern residential area, as shown on Figure 9, has been utilized to provide both a lane and walkway to aid in the connectivity of the RS1NP area. A 2.0m wide local pathway will connect residents through this area to both the tot lot park and the beginning of the escarpment to the north. To provide additional safety to the pedestrian, a post and cable fence will provide separation between the walkway and the lane. The pedestrian crossing of the lane will also be identified with painted cross-walk lines to alert vehicular traffic of the crossing.

Two additional walkways are provided within the residential area south of River Heights Drive where long blocks occur. These walkways will provide residents with more direct access to their destination.

Two walkways are also provided in the residential area north of River Heights Drive. These walkways will bring residents directly to the pathway that accesses the escarpment and ultimately will connect down to the lower bench lands and the Bow River.

The emergency access connecting River Heights Drive to Ridge View Close will have a 4.0m paved surface for emergency vehicles. This access can also be utilized by pedestrians and cyclists as an alternative route to access the school site.

## **2.4 Transit Oriented Design**

As per the Riversong Design Brief, Transit Oriented Design (TOD) shall be considered for the RS1NP. TOD creates communities that are less dependent on private vehicular transportation and focus more on alternative methods of transportation. Whether utilizing public transit, cycling or walking, residents of TOD communities should have access to all the community's amenities through strong pedestrian connections. Section 2.3 discusses RS1NP pedestrian connectivity to facilitate walking and cycling. Although

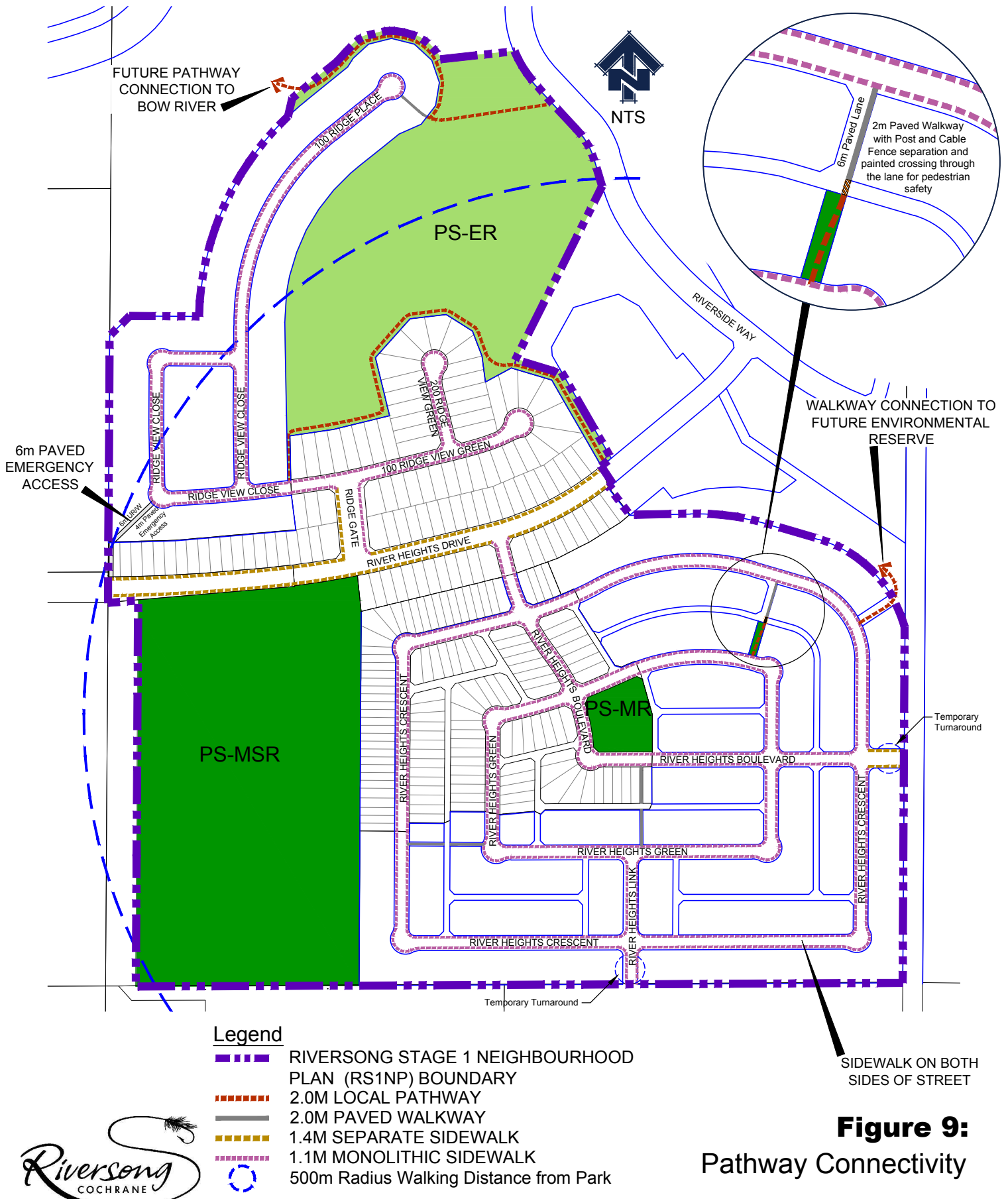
the Town of Cochrane does not currently have a local public transportation system, it anticipates its future inception as part of its responsible growth management.

Riversong accommodates the possibility of public transportation in the future. The ultimate route for public transit in Riversong would be through River Heights Drive to Riverside Way, north on Riverside Way to a bus turnaround, and then back south to head east out of the community. The interim route is illustrated on Figure 10. This route will utilize River Heights Green as a turn-around loop until future development to the east occurs.

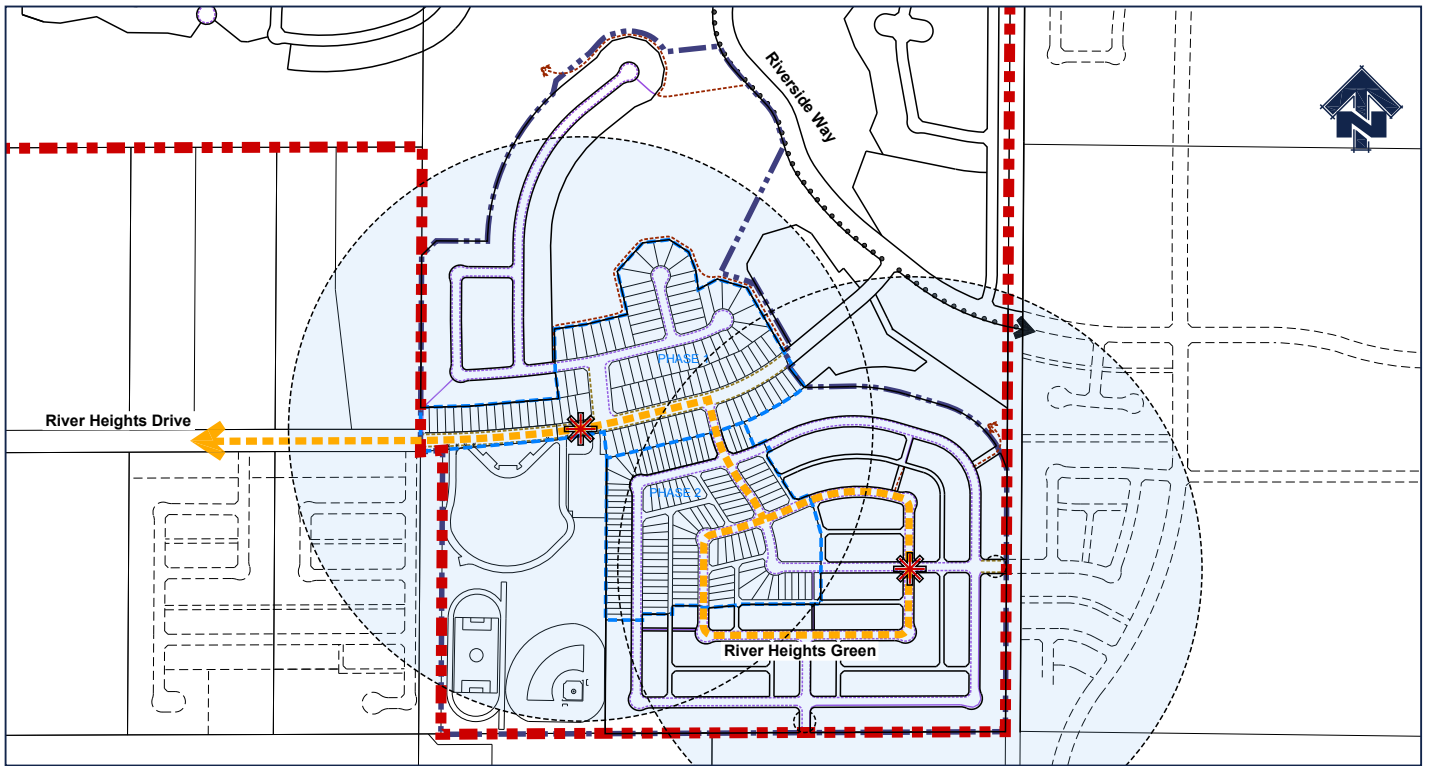
Figure 11 illustrates the potential school bus route through RS1NP area. This route as illustrated provides complete 400m school bus walking distance coverage to the entire RS1NP area. A portion of this route utilizes residential streets.

The final location of bus zones will be determined at the subdivision application stage to the satisfaction of the Town of Cochrane.

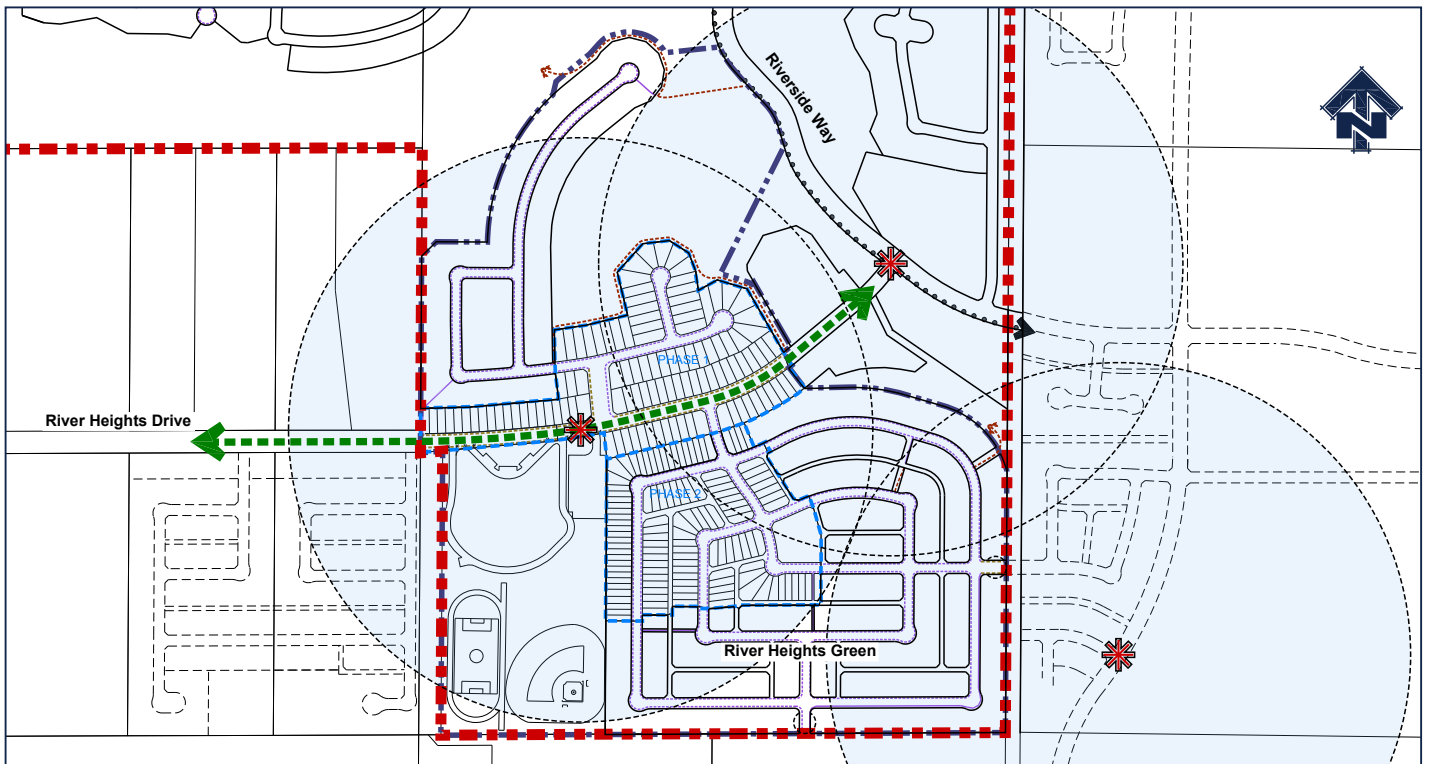
# Riversong Neighbourhood Plan



# Riversong Neighbourhood Plan



**Interim Transit Bus Route**



**Ultimate Transit Bus Route**

**Legend:**

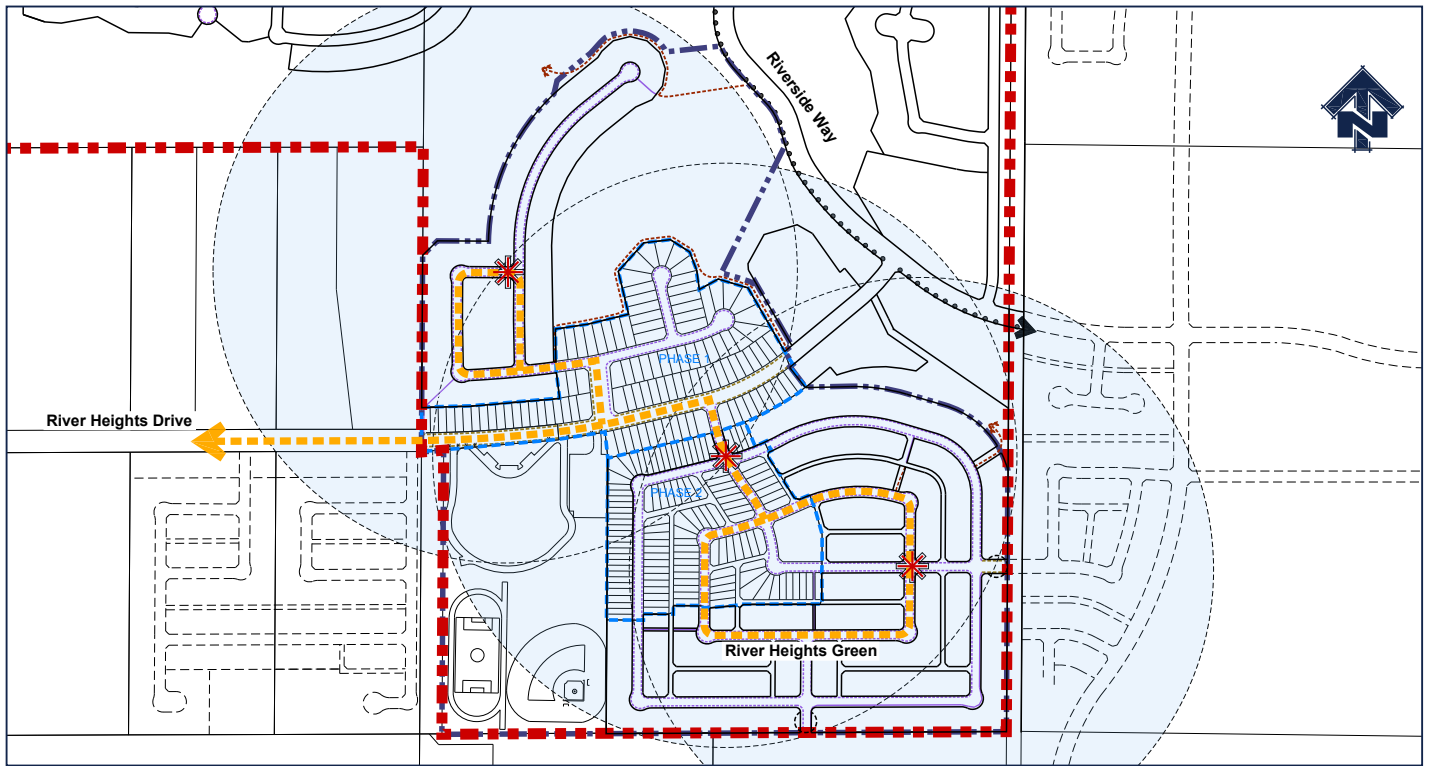
- Overall Riversong Community (ORC) Boundary
- Riversong Stage 1 Neighbourhood Plan (RS1NP) Boundary
- Existing Phase Boundary
- Interim Bus Route
- Ultimate Bus Route
- Transit Bus Stop Locations
- 400m Walking Distance



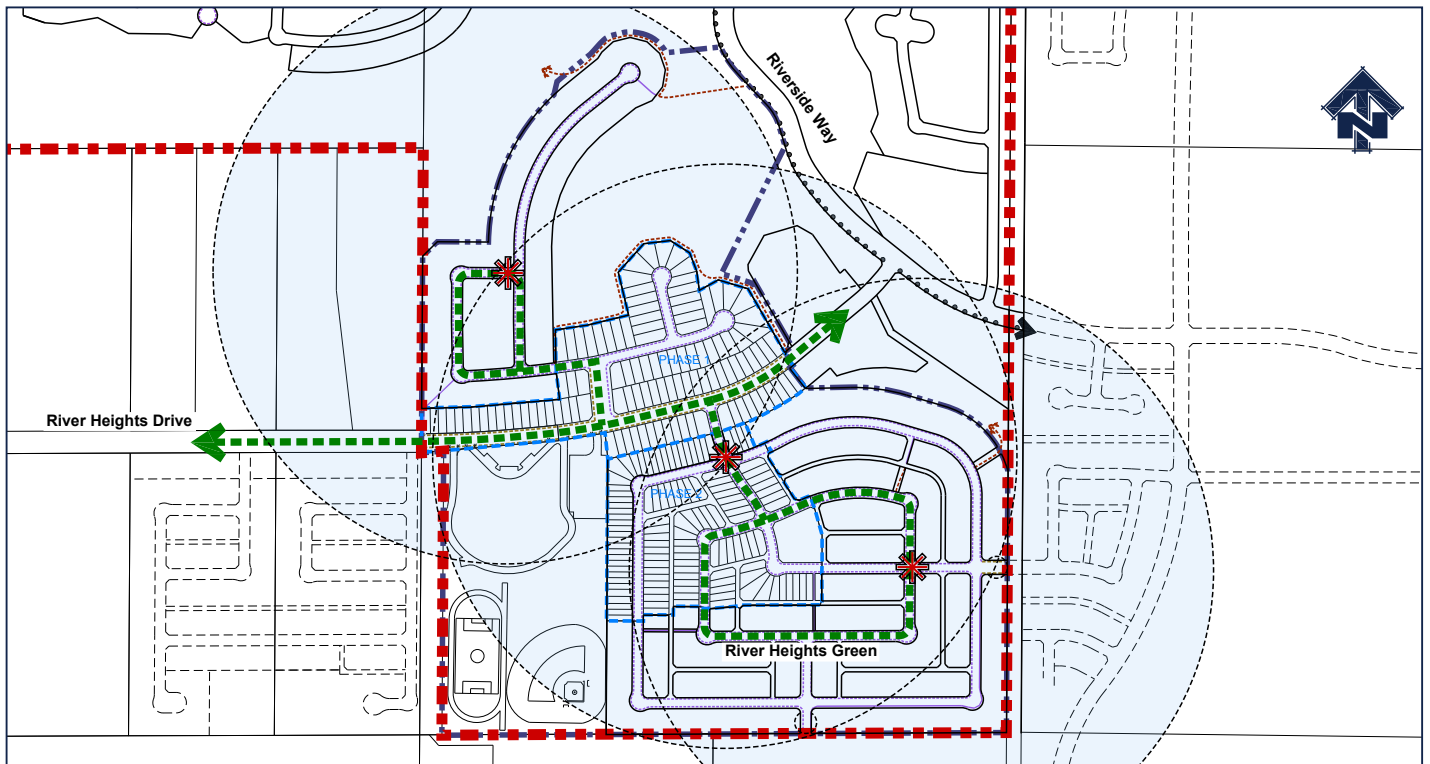
**Figure 10:**  
Public Transportation  
Route



# Riversong Neighbourhood Plan



Interim School Bus Route



Ultimate School Bus Route

## Legend:

- Overall Riversong Community (ORC) Boundary
- Riversong Stage 1 Neighbourhood Plan (RS1NP) Boundary
- Existing Phase Boundary
- Interim Bus Route
- Ultimate Bus Route
- School Bus Stop Locations
- 400m Walking Distance



**Figure 11:**  
School Bus  
Transportation Route

## 2.5 Crime Prevention through Environmental Design

The RS1NP recognizes the importance of Crime Prevention through Environmental Design (CPTED). Crime prevention through environmental design happens when the built environment helps to reduce the incidence of crime and the fear of crime occurring. The MDP provides basic criteria for designing communities with CPTED. The criteria and how Riversong addresses them is outlined below.

### 1. 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”<sup>6</sup>. The majority of the RS1NP 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 RS1NP that include curved streets 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.

### 2. Visibility by Others

- The escarpment within the RS1NP is visible from all sides permitting informal surveillance to continually occur. Houses back onto the escarpment from the south, west and north sides. A pedestrian pathway runs along the north side and the future Riverside Way is located on the east side. Crime is less likely to occur when there is a high potential for the crime to be witnessed, and people feel safer when they can easily be seen.
- The tot lot park in the residential area south of River Heights Drive is located centrally and adjacent to that area’s main entrance off River Heights Drive. This park is highly visible to the surrounding homes that overlook it and to residents living in and accessing this portion of the community.

### 3. Finding Help

- The tot lot park and the local high-school will help foster the social development of the community and turn, facilitate the sense of safety in the community as residents get to know their neighbours. Residents of a close knit community are more likely to report a crime or intervene to help.

### 4. Sightlines

- 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.

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<sup>6</sup>Town of Cochrane Municipal Development Plan, October 2008, Appendix E, page 73



5. Lighting

- Attention will be made to provide street lighting at key locations, and near walkways to allow continued visibility at night.

6. Predictable Routes

- The combination of sidewalks, pathways and walkways in the RS1NP provide multiple options for reaching destination points. Residents do not have to take the same route every time.

7. Entrapment Spots

- 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”<sup>7</sup>. The design of the RS1NP does not provide small areas that are shielded on three sides resulting in potential entrapment situations. Attention will be given to future landscaping plans and the growth patterns of plantings to ensure future entrapment spots do not occur.

8. Isolation

- Feelings of isolation will be largely avoided by maintaining well lit sidewalks and walkways providing visibility to residents, and of residents utilizing these areas.
- Centrally located parks and attention to landscaping will help eliminate feelings of isolation by ensuring residents maintain good visibility of their surroundings and can be seen by others.

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<sup>7</sup> Town of Cochrane Municipal Development Plan, October 2008, Appendix E, page 75  
*Riversong Stage 1 Neighbourhood Plan Report, May 28, 2010*

## **3.0 TRANSPORTATION NETWORK**

### **3.1 Constraints**

#### **3.1.1 Topography**

The escarpment and natural topography of Riversong put limitations on the transportation network and connectivity. The design of the transportation network respects the topography of the land by minimizing the impact on the escarpment, resulting in limited vehicular connectivity in some areas of Riversong. The Bow River also creates a natural boundary on the north side of the community, impeding access from this direction.

#### **3.1.2 Ownership**

Separate ownership of the lands on the west and east side of Riversong adds constraint to the transportation network.

Riversong is not directly adjacent to Highway 22, but it relies upon this highway as the permanent access route to and from the community, via River Heights Drive. There are several landowners between the west side of Riversong and Highway 22. This creates challenges on the timing and financing of upgrading River Heights Drive to improve the access into Riversong.

The gravel extraction operation on the east boundary of Riversong also falls under different ownership. River Heights Drive currently accommodates the gravel trucks entering and exiting the site due to the limited transportation connectivity throughout the entire area. Traffic volumes through Riversong must consider the gravel extraction operation.

#### **3.1.3 Access**

Riversong is situated immediately south of the Bow River, and approximately one kilometre east of Highway 22. The permanent access into Riversong is from Highway 22 via River Heights Drive.

River Heights Drive is identified in the Transportation Update Plan 2009 as a major collector. As this road currently utilizes ditches rather than curb and gutter for stormwater management, it will be referenced as a rural collector for discussion purposes. River Heights Drive is a rural collector up to Riversong's west boundary. At the entry point into Riversong, River Heights Drive changes to a 21 metre collector standard road.

River Heights Drive terminates at the proposed Riverside Way. Riverside Way, if approved, will provide access into Riversong's lower bench area and to future urban development to the east of Riversong. This future development, to the

east of Riversong, will not occur until the existing gravel extraction operation ceases.

The Transportation Update Plan 2009<sup>8</sup> identifies a major arterial road running north/south, in the SR-ASP lands to the east of Riversong, which will provide an additional connection to Highway 22, and a potential future second bridge crossing of the Bow River. Each of these will provide improved access to Riversong. Additional discussion of the potential future bridge can be found in Section 5.2.4.2.

## **3.2 Thresholds**

The existing and future transportation network is identified in Figures 12 and 13. These Figures are based on the *Transportation Update Plan 2009* prepared by Urban Systems under the direction of the Town of Cochrane.

### **3.2.1 Current Intersection of Highway 22 and River Heights Drive**

An Intersection Traffic Study<sup>9</sup> (ITS) completed by Focus Corporation, determined that the intersection of Highway 22 and River Heights Drive currently operates at an overall Level of Service A. However, the westbound right and left turning movements operate at a Level of Service C.

The ITS has determined that based on existing traffic volumes, the intersection at Highway 22 and River Heights Drive is capable of accommodating the traffic volumes of an additional 50 residential units, or equivalent for commercial/industrial development while maintaining the existing level of service.

With an additional 50 residential units:

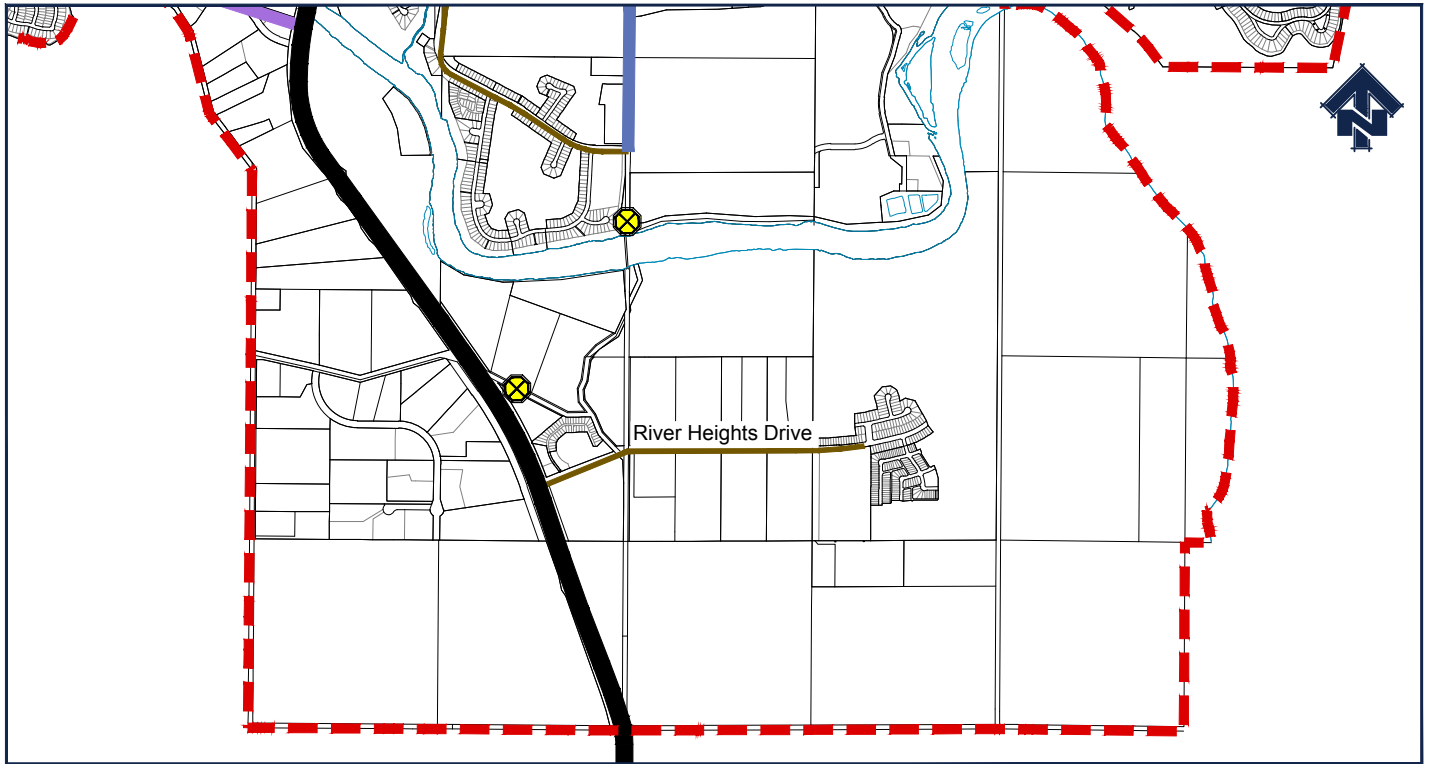
- Overall Level of Service: The ITS shows the Highway 22/River Heights Drive intersection, with an additional 50 units would maintain an overall Level of Service A, with individual movements operating at Level of Service C during peak periods.
- Specific Level of Service: The ITS shows that the Highway 22/River Heights Drive intersection can accommodate an additional 50 residential units and maintain peak period westbound left and right movements at a Level of Service C.

Alberta Transportation has informed the Town of Cochrane Planning Department that a Level of Service less than C would not be acceptable at this intersection.

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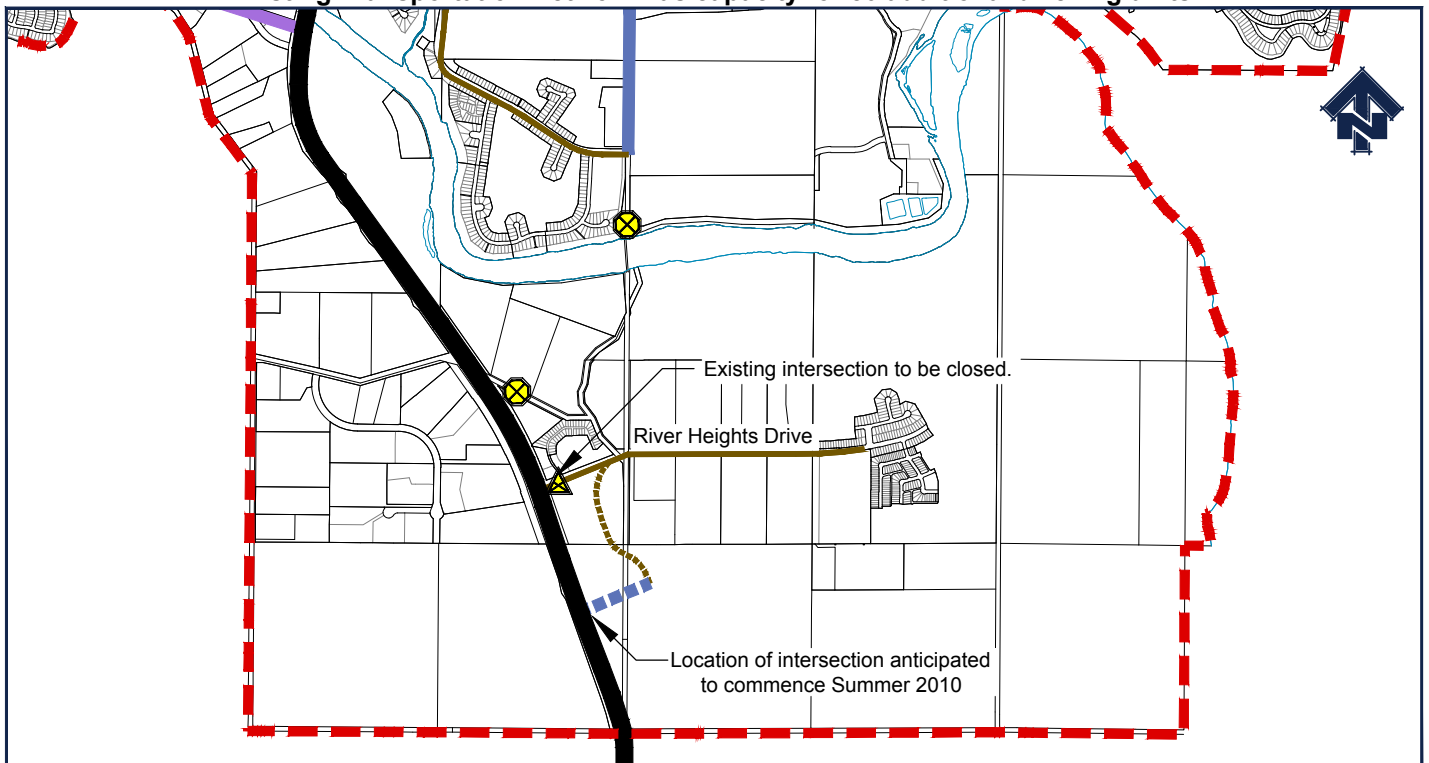
<sup>8</sup> Town of Cochrane Transportation Update Plan 2009, Urban Systems, April 2009

<sup>9</sup> Intersection Traffic Study, Focus Corporation, February 17, 2010



## Transportation Network Stage 1

Existing Transportation Network has capacity for 50 additional dwelling units



## Transportation Network Stage 2

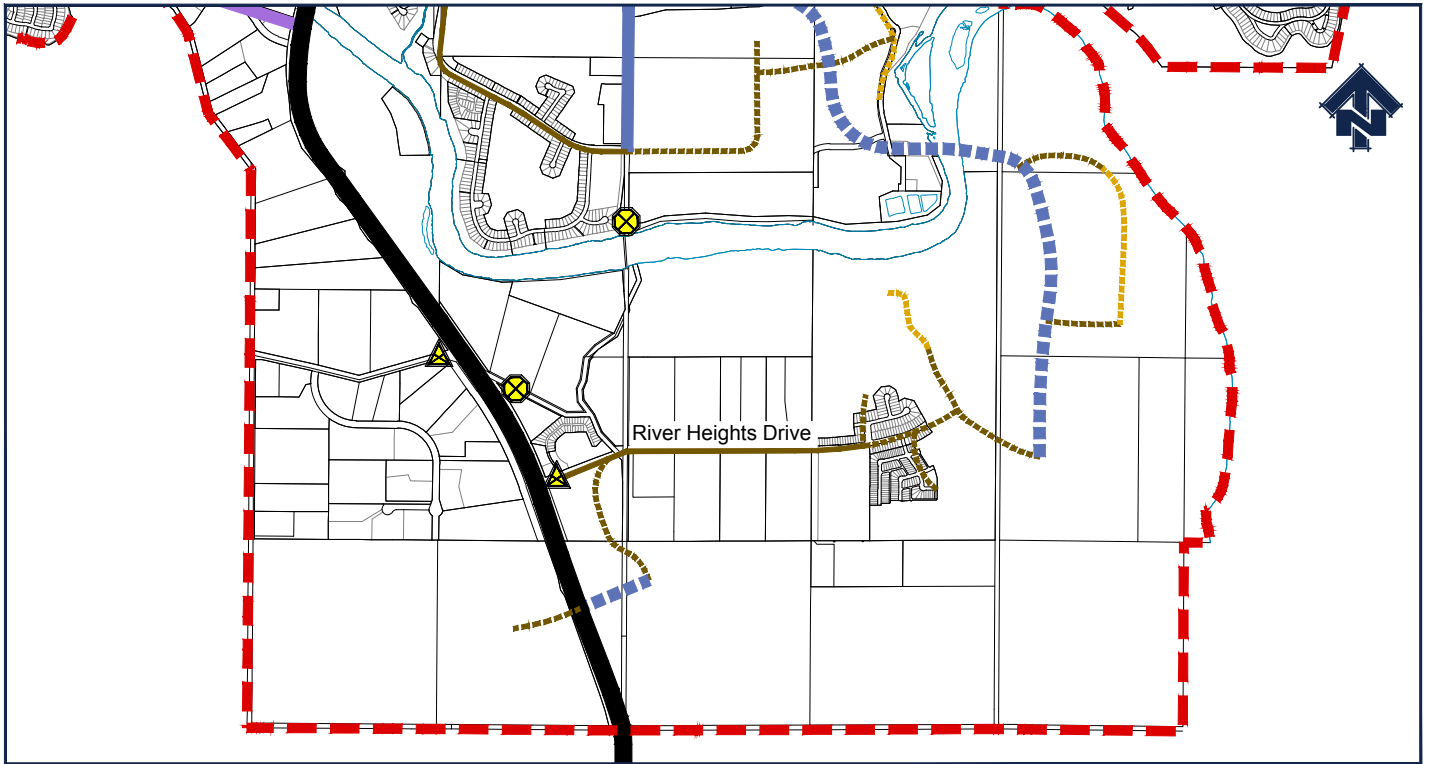
Spring 2010 Construction of new intersection will increase the capacity of the Transportation Network and allow 880 additional dwelling units to be constructed.

### Legend:

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

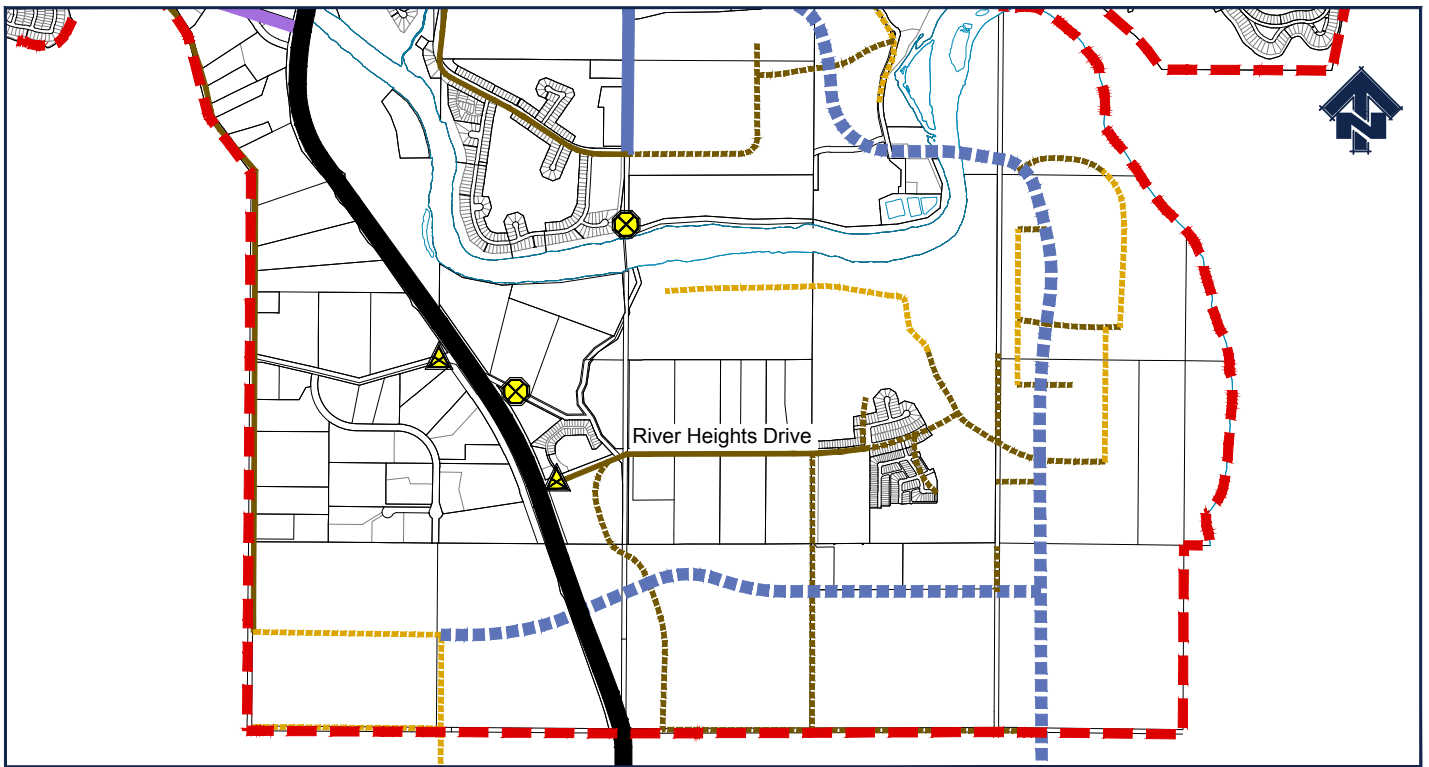
## Figure 12:

Stages 1 & 2 of the Transportation Network



**Transportation Network Stage 3**

2016 Recommended Future Road Network as per the Town of Cochrane Transportation Plan update 2009



**Transportation Network Stage 4**

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)    |                          |

**Figure 13:**

Stages 3 & 4 of the  
Transportation Network

### **3.2.2 Planned Intersection of Highway 22 and River Heights Drive**

A new intersection for Highway 22 and River Heights Drive is planned. This new intersection will be constructed 550± metres south of the existing intersection, and will be fully channelled with future signalization as required. Private land ownership exists between the locations of the existing intersection and proposed intersection. A connection through this private land will be required to connect the new intersection with the existing River Heights Drive. This agreement is currently under discussion and close to resolution. Once this agreement is in place, and the new intersection is constructed, the intersection capacity constraints on the transportation network serving Riversong will be eliminated.

It is anticipated that the new intersection will commence in the summer of 2010. The existing Highway 22 and River Heights Drive intersection will either be closed or left intact as an emergency access only. This decision will be made by the Town of Cochrane and Alberta Transportation.

#### **3.2.2.1 Planned River Heights Drive Re-Alignment**

As noted in Section 3.2.2, due to the relocation of the existing intersection approximately 550m± south, a portion of River Heights Drive must be re-aligned to access the new intersection. The construction of the re-aligned portion of River Heights Drive will enable development to surpass the 50 additional units that the existing intersection can support.

Registration of subdivision in Riversong, beyond 50 additional units, will not be supported by the Town until such time as an agreement in relation to the River Heights Drive re-alignment is provided to the Town.

### **3.2.3 River Heights Drive**

In accordance with the *Intersection Traffic Study*, River Heights Drive has a capacity to serve up to 10,000 vehicles per day (two way traffic).

The ITS has determined that based on existing traffic volumes, River Heights Drive is capable of accommodating the traffic volumes of an additional 880 residential units, or equivalent for commercial/industrial development.

It is noted that at present, River Heights Drive operates at a Level of Service A. With the traffic volumes of an additional 880 residential units, or equivalent for commercial/industrial development, this level of service will be maintained.

At such time when development surpasses the additional 880 residential units, or equivalent for commercial/industrial development, the Level of Service of

River Heights Drive will be reduced. At this time, the development of additional routing or upgrading of River Heights Drive will be required.

While this limitation does not affect the development of the Riversong Stage 1 Neighbourhood Plan area, the Town of Cochrane will not approve the subdivision of any residential parcels, or development permits for any commercial/industrial developments that would exceed the additional 880 residential units, or equivalent for commercial /industrial development, prior to the upgrading of River Heights Drive or the development of an alternate permanent access.

Should improvements to River Heights Drive be required, the first developer requiring it shall front end the improvements while being entitled to 100% recoveries based on frontage obligations from lands adjacent to River Heights Drive. The Town will work with the Developer to set up the recovery mechanism.

#### **3.2.4 Access**

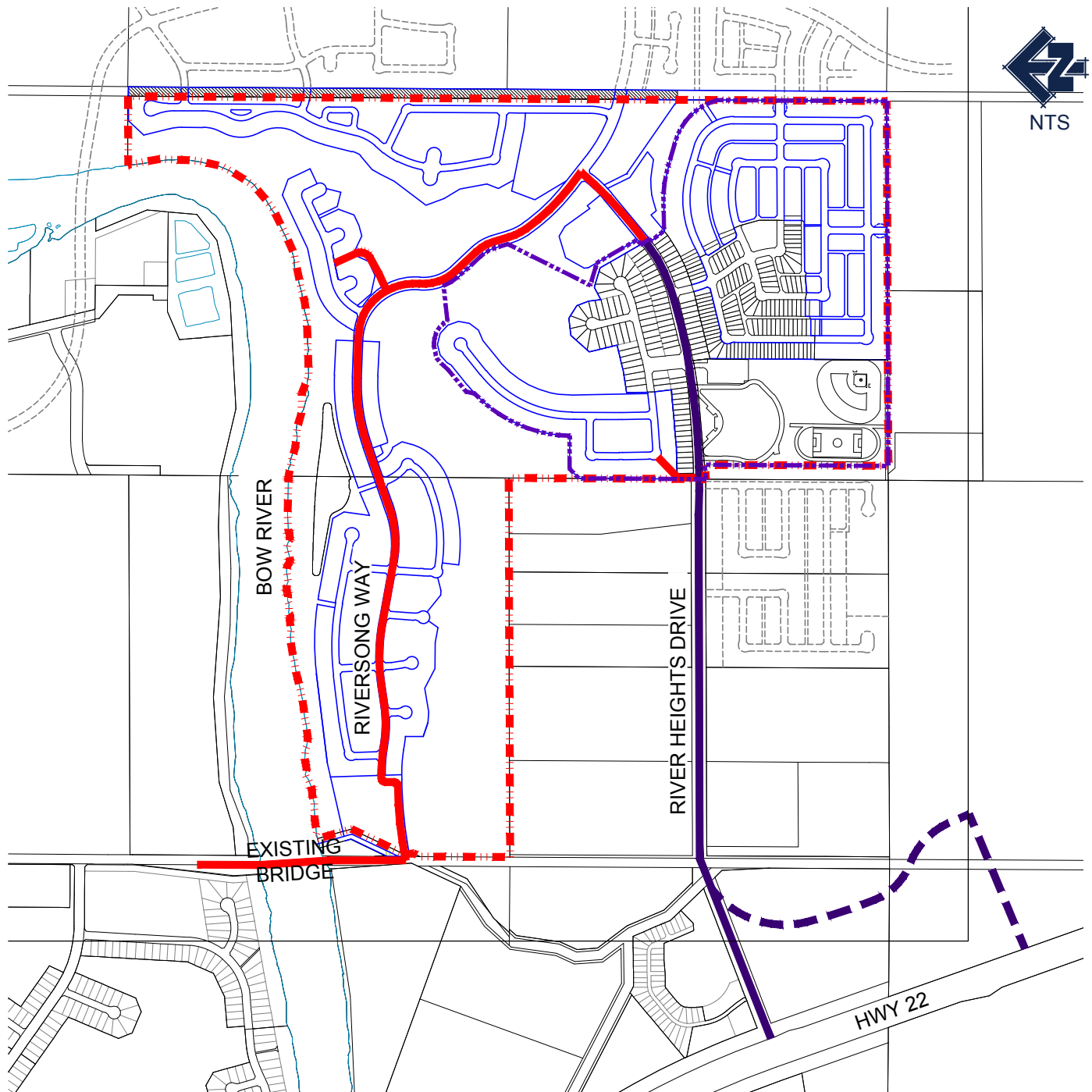
Riversong currently has a permanent access in place via River Heights Drive and Highway 22. This access will soon be enhanced by the planned new intersection of River Heights Drive and Highway 22, as discussed in Section 3.2.2.

##### **3.2.4.1 Emergency Access (External) via River Avenue Bridge**

Emergency access will be provided to Riversong via the River Avenue Bridge. See Figure 14. An all weather access road through Riversong's lower bench lands will connect River Avenue Bridge to River Heights Drive.

River Avenue Bridge has the capacity to carry up to 40 tons, as verified by Alberta Transportation to the Town of Cochrane Engineering Department, which will accommodate the heaviest emergency response vehicle. Therefore River Avenue Bridge can be utilized as an emergency access while remaining closed to public vehicular traffic.

It is important to note that the River Avenue Bridge remains under the jurisdiction of Alberta Transportation. Alberta Transportation has agreed to the use of River Avenue Bridge as an emergency access into Riversong. A letter stating this agreement can be found in Appendix G. An agreement shall be made between the developer and Alberta Transportation relative to the maintenance and use of the bridge.



## Legend

- - - - - Overall Riversong Community (ORC) Boundary
- - - - - Riversong Stage 1 Neighbourhood Plan (RS1NP) Boundary
- Existing Access
- - - - - New Access to commence construction Summer 2010
- Proposed Emergency Access Route



### 3.2.4.2 Future Bridge

A second permanent bridge crossing of the Bow River has been identified in the MDP and the SR-ASP. The approximate location of this new bridge has been identified northeast of Riversong, within the SR-ASP lands.

The timing and construction of the new bridge will be guided by the policies of the MDP. Sections 9.3.1(j) – (l) state that:

- (j) In accordance with the Town of Cochrane Analysis of Future Bow River Crossings: Planning Study, as amended from time to time, a new Bow River bridge shall be constructed and the existing River Avenue bridge shall be converted to a pedestrian crossing and emergency access.
- (k) Design and construction costs for bridges (pedestrian and vehicular) required to serve lands south of the Bow River shall be collected through offsite levies or other appropriate financial strategies.
- (l) The Town shall determine when design, construction, and completion of any bridges are to occur.<sup>10</sup>

### 3.2.5 Culs-de-Sac

The internal road network of Riversong respects the natural topography of the land by minimizing impact. The topography provides challenges to the opportunity of providing a grid like street design with a high level of connectivity. To mitigate the connectivity limitation of the culs-de-sac walkways near the ends of the culs-de-sac, or open ended culs-de-sac are provided to create greater efficiency in the pedestrian network.

It is recommended that the maximum length of a cul-de-sac be 200 metres. A cul-de-sac longer than 200 metres must provide either an emergency access or an automatic sprinkler system installed in all residences past the 200 metre distance. The sprinkler system must be installed and maintained in accordance with the *Alberta Building Code*.

The long culs-de-sac in Phase 4, as per Figure 17, of the RS1NP must include two access right of ways, one on each side of the culs-de-sac. These access right of ways will be accommodated through the side yard of a lot, to allow emergency access to the ER areas adjacent to these lots. Figure 7 identifies the general area

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<sup>10</sup> Town of Cochrane, Municipal Development Plan, October 2008, Section 9.3.1 (j) – (l), page 43

where these shall be located. The final location and form of these access right of ways will be determined at the subdivision application stage.

### **3.2.6 Emergency Access (Internal)**

All internal emergency accesses shall be constructed to support an emergency vehicle and be paved to a width of 6 metres.

## **4.0 LAND USE**

Figures 4 and 5 show the approved land uses within Riversong and Figure 15 illustrates the proposed land use redesignations within the RS1NP area.

The proposed land use within Riversong is primarily residential. A future land use amendment is proposed to:

- Amend a portion of existing Residential Single-Detached Dwelling District (R-1) add two blocks of Residential Multi-Unit Dwellings District (R-3) area to Riversong with the intention to introduce townhouse development into the RS1NP, and;
- Amend a portion of existing Residential High Density Multi-Unit Dwellings District (R-M) to Residential Single and Two Dwelling District (R-2) with the intent to provide additional semi-detached housing. Closer review of the steep grades within this existing R-M land use area determined that it will be very difficult to develop a cohesive multi-dwelling site on the south portion of these lands. Semi-detached housing will be more suitable to the land form as well as provide for a continuation of existing adjacent land uses.

The proposed future land use amendments would support Section 8.4.3(a) of the 2008 MDP by providing a variety of housing options, as well as many of the Cochrane Sustainability Plan's Pathways to the Future, including Pathway 9: Everyone has a roof over their head.

The land use designations provided in the RS1NP are discussed in greater detail below. The land use amendments will be applied for under a separate Land Use Amendment application.

Aside from the above noted amendments, the proposed land use is consistent with the land use pattern of the SR-ASP Land Use Concept, and the approved Land Use as per Bylaw 19/2006 and the amendments approved with Bylaw 17/2007.

## **4.1 Residential**

The RS1NP provides for 28.27 hectares (69.86 acres) of residential land use. This use makes up 60.3% of the gross developable area. A variety of residential dwelling units will be available within RS1NP including single detached, semi-detached, and multi-dwelling units.

A diverse range of lot sizes will be available within the single family residential dwellings (R-1) district of the RS1NP. Riversong's varying topography provides the opportunity for large view-offering estate lots along the escarpments and higher density laned single dwelling lots on the relatively flatter lands. Narrow lot single dwelling homes, mid-sized single dwelling homes, and large estate sized single dwelling homes will all be available within RS1NP.

Semi-detached housing (R-2) and street-oriented townhouse (R-3) will also be available within RS1NP south of River Heights Drive. These land uses will provide the opportunity for the RS1NP to provide entry level housing options, and diversity in its built form.

## **4.2 Public Service**

Public Service lands in the form of Municipal School Reserve, approximately 8.97 hectares (22.16 acres), and Municipal Reserve, approximately 0.44 hectares (1.09 acres), together account for 20.1% of the gross developable area of the RS1NP, see Section 4.3.

Public Service lands in the form of Environmental Reserve accounts for 7.43 hectares (18.36 acres), 13.7% of the total RS1NP area. The design of the RS1NP respects the natural features of the topography and protects them as amenities. The floodway lands and the natural escarpment will be protected as environmental reserve. Vegetation and wildlife species will be left in their natural state throughout the environmental reserve area.

The open space system will be linked together through a pathway and trail network that provides good connectivity while minimizing the impact on the environmental reserve.

The internal pathway system will link to the regional pathway as well as to the local high school, the community parks and the natural escarpment.

A tot lot is currently being constructed in Riversong Phase 2 to provide family recreation to the community.

## **4.3 Institutional**

The Riversong community includes an 8.97 hectare (22.16 acre) high school site, with associated playfields. Bow Valley High School is currently operating on this site. This school serves the Town of Cochrane and surrounding areas. A school within a community is a valuable amenity. The school provides a social focus for residents and

draw families to the community. Section 2.1.6 provides further discussion on the school site.

#### **4.4 Commercial**

The need and desirability of local commercial uses to provide a complete community for existing and future residents is acknowledged and has been reviewed during the preparation of the RS1NP. The result of this further review supports the Town of Cochrane's previous decision that a local commercial use would be better located elsewhere in the SR-ASP due to the following:

- Transportation Plan Update, prepared by Urban Systems in 2009 identifies a future major arterial road through this area and to eventually connect to downtown Cochrane via a new bridge crossing over the Bow River. This arterial road is proposed to be located approximately 150m east of the ORC's easterly boundary, and run the length of this boundary. By design, this road will see a much larger traffic volume than the collector roads in Riversong. Local commercial development would likely be more successful adjacent to this arterial road, while still within walking distance to much of Riversong.
- Commercial needs of Riversong residents will be further met through lands proposed for development for highway commercial at the intersection of Highway 22 and River Heights Drive. This proposed commercial site is located less than 1 kilometre to the west of Riversong. Residents will pass this site as they enter and exit Riversong, making it a convenient commercial location. This commercial site is part of the River Heights Area Structure Plan (RH-ASP) currently being prepared by the Town. There is opportunity within the RH-ASP for this highway commercial site to become a commercial node offering a variety of services.

# Riversong Neighbourhood Plan



## Land Use Redesignation Statistics

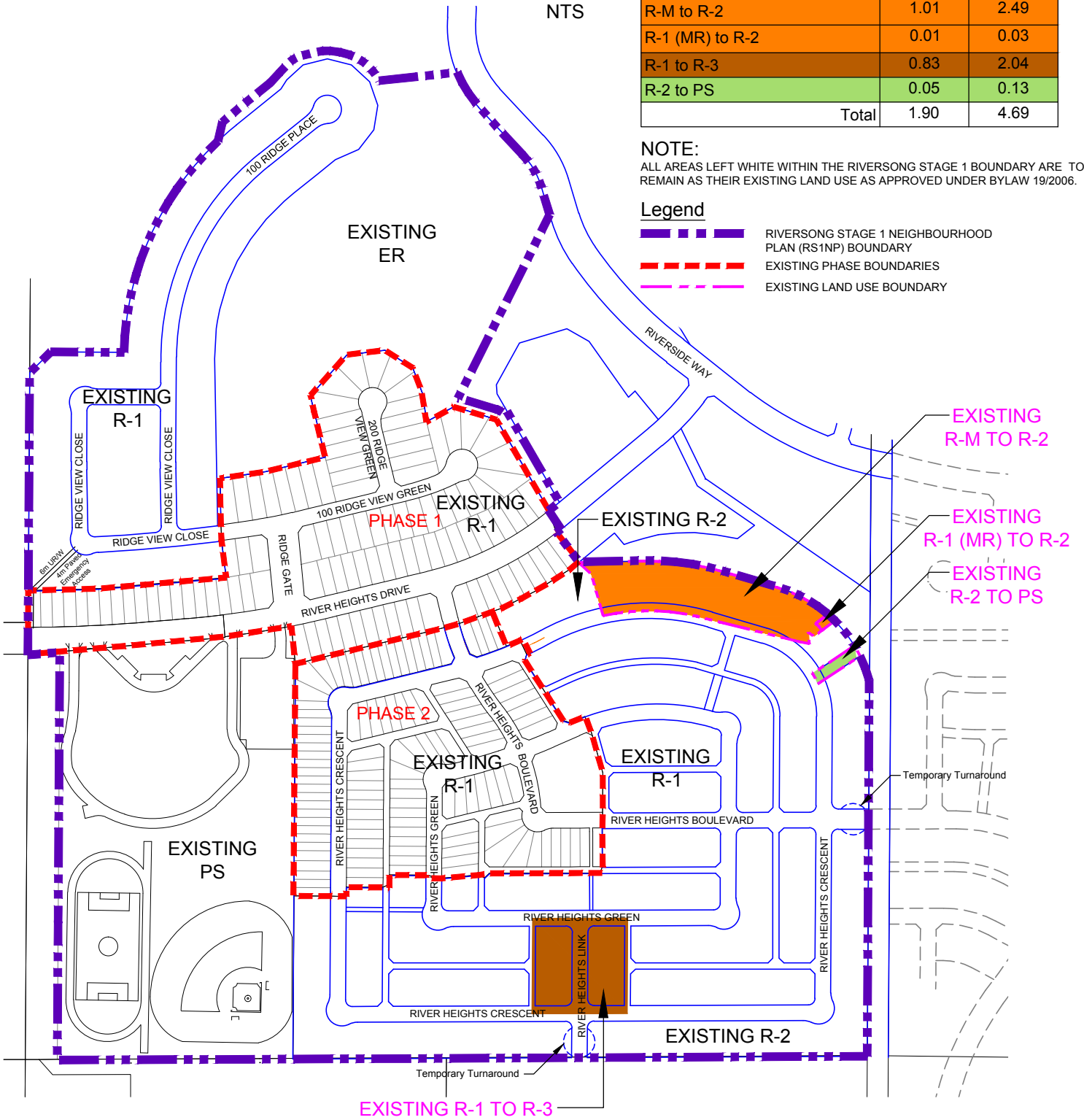
	ha	ac
R-M to R-2	1.01	2.49
R-1 (MR) to R-2	0.01	0.03
R-1 to R-3	0.83	2.04
R-2 to PS	0.05	0.13
Total	1.90	4.69

### NOTE:

ALL AREAS LEFT WHITE WITHIN THE RIVERSONG STAGE 1 BOUNDARY ARE TO REMAIN AS THEIR EXISTING LAND USE AS APPROVED UNDER BYLAW 19/2006.

### Legend

- RIVERSONG STAGE 1 NEIGHBOURHOOD PLAN (RS1NP) BOUNDARY
- EXISTING PHASE BOUNDARIES
- EXISTING LAND USE BOUNDARY



**Figure 15:**

Proposed Riversong Stage 1  
Land Use Redesignation

## **5.0 NEIGHBOURHOOD PLAN STATISTICS**

The Neighbourhood Plan statistics provide the areas and projected number of units for each land use category. Typically Neighbourhood Plan statistics are general in their category description, but in this case actual land use districts are identified. It is important to note that due to the inclusion of the school site within the RS1NP, there is a high amount of Municipal Reserve (MR) dedicated. This large amount of MR skews the anticipated density illustrated in the RS1NP Statistics by making it appear lower than if the RS1NP were to provide only 10% of the gross developable area as MR. Further discussion can be found in Section 6.0 Density.

The Neighbourhood Plan statistics also must consider the existing development within the RS1NP area. There are existing residences in Phases 1 and 2 under both R-1 and R-2 land use districts. This existing frontage is identified under each respective land use category as Existing Lots. This frontage is not included as a variable in the anticipated or maximum lot calculations, but left as a fixed number and added to the total number of units. The anticipated and maximum lot calculations include only the remaining developable frontage. Figure 16 outlines the Neighbourhood Plan Statistics.

## **6.0 DENSITY**

As noted in Section 5.0, the inclusion of the school site within the RS1NP creates an MR over-dedication and distorts the density calculations for the RS1NP area. The anticipated density for the RS1NP is 6.9 units per acre (17.1 units per hectare) with a maximum of 8.0 units per acre (19.7 units per hectare). The density of the RS1NP would be higher if the calculation excluded the MR over-dedication. Including the school site within the RS1NP creates an overall MR dedication of 20.1%. If the RS1NP had only 10% MR dedication, the anticipated density would be 7.6 units per acre (18.8 units per hectare) and the maximum would be 8.8 units per acre (21.6 units per hectare).

## **7.0 PHASING**

Phase 1 and 2 of the RS1NP are currently developed. The next areas that will be developed are Phases 3 and 4. These areas are identified on Figure 17. The remaining phases within the RS1NP are identified as Phases 5 and 6.

It is also important to note that offsite development may occur with a particular Phase development to put utilities in place. This means that the engineering Phase boundary may not exactly coincide with the planning Phase boundary.

## RIVERSONG STAGE 1 NEIGHBOURHOOD PLAN STATISTICS

	Frontage (m)	Hectares (+/-)	Acres (+/-)	Number of units	% of GDA
<b>Total Land Area</b>		<b>54.34</b>	<b>134.27</b>		
<b>Environmental Reserve</b>		<b>7.43</b>	<b>18.36</b>		
<b>Gross Developable Area (GDA)</b>		<b>46.91</b>	<b>115.91</b>		<b>100%</b>
General Land Uses					
<b>Residential</b>		<b>28.27</b>	<b>69.86</b>		<b>60.3%</b>
R-1, Residential Single Detached Dwelling District	<b>5629.96</b>	<b>21.62</b>	<b>53.42</b>		
Existing Lots	1604.00			187	
Frontage Remaining	4025.96				
* Ant. number of undeveloped lots				388	
Max. number of undeveloped lots based on 9m lot width				447	
R-2, Residential Single and Two-Dwelling District	1251	6.12	15.12		
Existing Lots				44	
Ant. Number of undeveloped lots based on 7.92m				158	
Max. Number of undeveloped lots based on 6m				209	
R-3, Residential Multi-Unit Dwellings District		0.53	1.31		
Anticipated 20 upa				26	
Maximum 30 upa				39	
<b>Municipal Reserve</b>		<b>9.41</b>	<b>23.25</b>		<b>20.1%</b>
School Site		8.97	22.16		
Park		0.44	1.09		
<b>Roadways and Lanes</b>		<b>9.23</b>	<b>22.81</b>		<b>19.7%</b>
<b>Total number of units</b>					
Anticipated.				803	
Maximum				926	
<b>Density</b>					
Anticipated.				17.1 upha	6.9 upa
Maximum				19.7 upha	8.0 upa
<b>Density adjusted to reflect a maximum 10% MR dedication</b>					
Anticipated.				<b>18.8 upha</b>	<b>7.6 upa</b>
Maximum				<b>21.7 upha</b>	<b>8.8 upa</b>

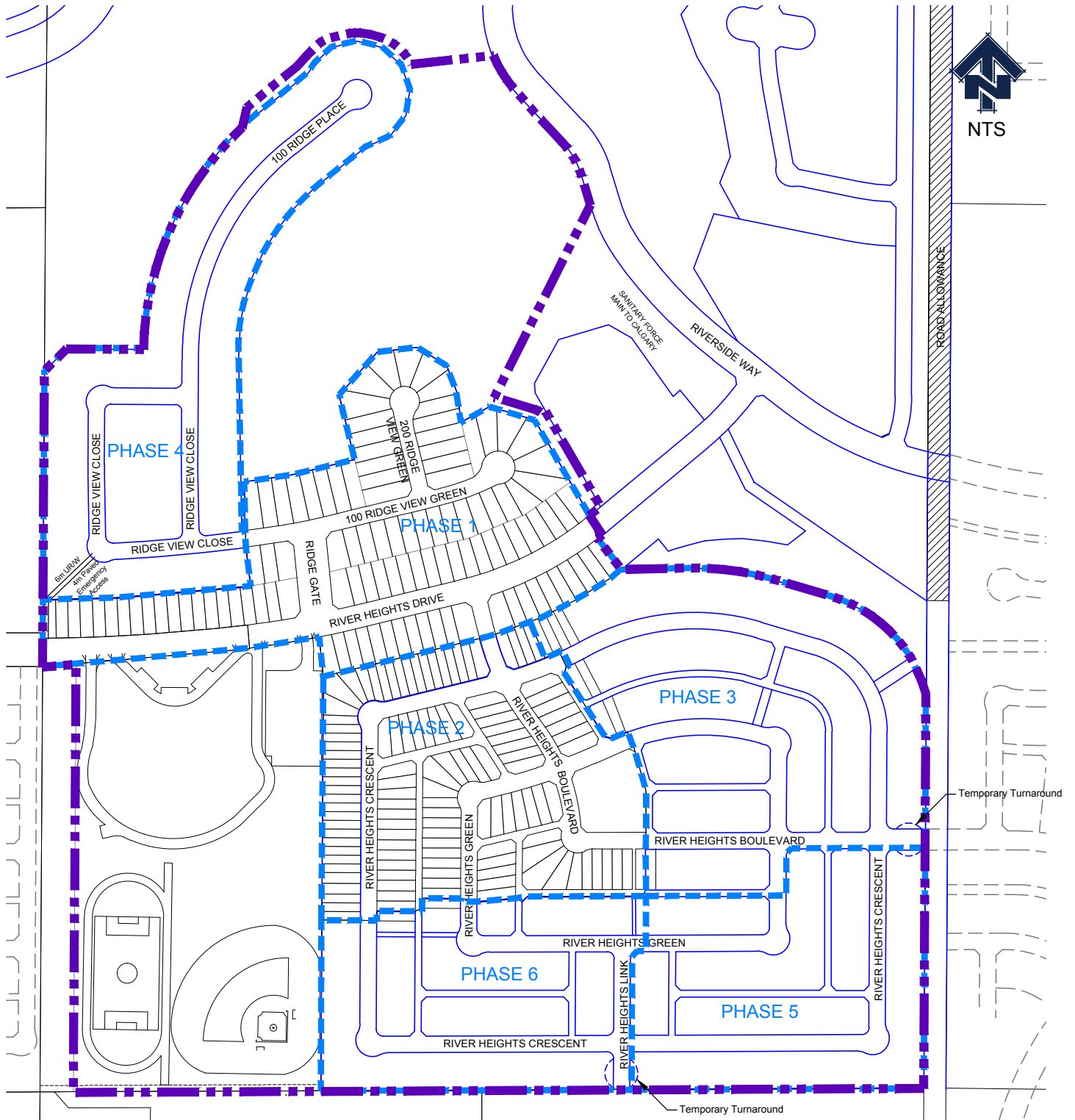
\* based on a variety of lot sizes including 13.42m - 16.45m view lots,  
and an average of 11m lots fronting River Heights Drive, and 9.75m lots elsewhere



**Figure 16:**  
Neighbourhood Plan Statistics



# Riversong Neighbourhood Plan



**Figure 17:**  
Phasing Plan

## **8.0 UTILITY SERVICING**

As previously noted in Section 7.0, as development proceeds in Riversong, a phase's Planning boundary may or may not correspond with that same phase's Engineering boundary. Should this deviance occur, it may be a result of off-site servicing required to be completed with a particular phase. Phase boundaries, planning and engineering, will be determined at Tentative Plan stage. Figure 18 illustrates the conceptual utility servicing layout.

### **8.1 Sanitary Servicing**

The proposed sanitary servicing concept, as shown on Figure 18, will include gravity mains on site, flowing to an existing sanitary sewer trunk and siphon in Riverside Way. The sanitary trunk and siphon were constructed by the developer as part of Riversong Phase 1 and has capacity to service the RS1NP area.

The RS1NP area also includes the existing Town of Cochrane to City of Calgary Sanitary Forcemain. The forcemain is located in a Utility Right-of-Way.

### **8.2 Water Main Distribution**

The proposed water system distribution concept is shown on Figure 18, and is an extension of the existing watermain distribution network in the Phase 1 and Phase 2 development areas.

Distribution mains will extend through the RS1NP area on a grid system as shown, and in accordance with the Town of Cochrane Water System Master Plan. All internal valve and hydrant coverage will be provided in accordance with Town of Cochrane requirements.

The RS1NP area is serviced by the existing River Heights Water Reservoir and Pump Station and is within the River Heights water pressure zone (Elev 1170 to 1210). The watermain in Riverside Way will include a pressure reducing valve (PRV) assembly and stub, after the looping tie to Phase 4, to provide service to future development area in the lower main Town pressure zone (Elev 1130 to 1170).

### **8.3 Stormwater Management**

The stormwater management strategy for the RS1NP area is addressed in the report entitled "Staged Master Drainage Plan for Cochrane Crossing" by Westhoff Engineering Resources, Inc. (Nov 2005)

The existing topography of the RS1NP area, will facilitate drainage to the storm water storage facility located adjacent to the Bow River in the SW & SE ¼ - 35 - 25 - 4 - W4M. The storm water management facility will outfall to the Bow River.

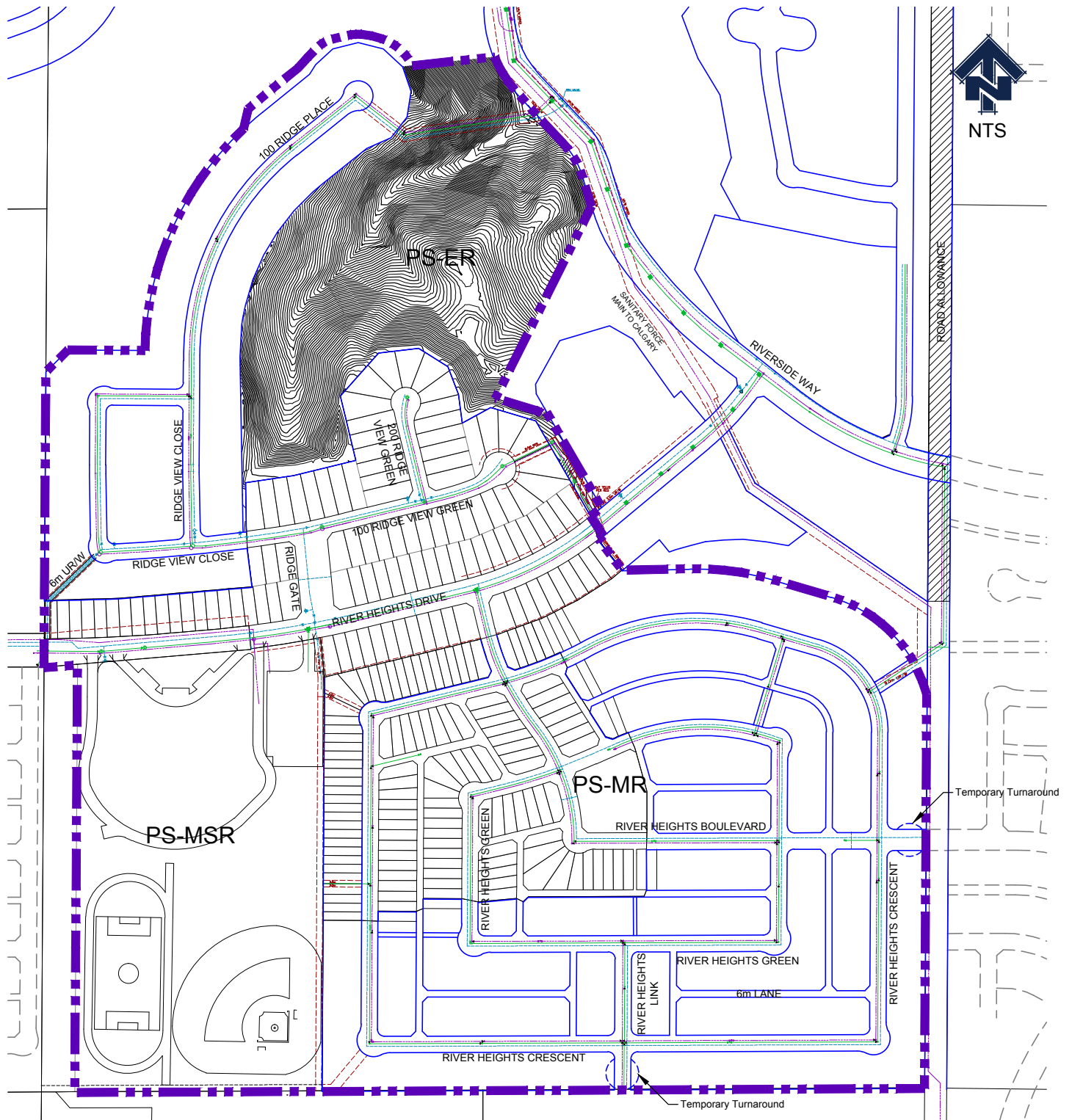
The RS1NP area will be serviced by conventional minor (pipe) and major (surface) drainage systems which will convey drainage to the proposed storm water storage facilities. The proposed storm sewer pipe system will drain to the storm water storage facilities via the existing storm trunk in Riverside Way, constructed by the developer as part of Riversong Phase 1. The existing trunk will be extended along Riverside Way, to the storm water storage facility. Riversong Phase 2 Off-site Storm Trunk design drawings have been prepared by Focus.

Subsequent to the approval of the Riversong Stage 1 Neighbourhood Plan, a development permit application can be made to facilitate the construction of the stormwater management facilities.

#### **8.4 Shallow Utilities**

Shallow utility servicing to the RS1NP area will be provided by extension of existing facilities in the adjacent Phase 1 and Phase 2 development areas. All power, telephone, natural gas, and cable television distribution systems will be constructed underground within the RS1NP area.

# Riversong Neighbourhood Plan



## Legend

- SANITARY SEWER / MANHOLE
- WATER MAIN / HYDRANT
- STORM SEWER / MANHOLE



**Figure 18:**  
Conceptual Utility Alignment

## **9.0 MEETING THE NEEDS OF THE TOWN OF COCHRANE**

### **9.1 Municipal Environmental Impact Statement (MEIS)**

In accordance with the Town of Cochrane MDP a review of the factors contributing to the Municipal Environmental Impact Statement (MEIS) has been made and outlined below. This is a unique situation because this information is being provided subsequent to the stripping and grading of the entire Riversong Stage 1 area. In some situations, further investigation is not possible.

#### **9.1.1 Fish and Wildlife**

Although RS1NP is not directly adjacent to the Bow River, measures have been taken to ensure the development has no negative impact on the River or fish and other wildlife along the banks of the Bow River. The RS1NP includes 7.30 ha (18.04 ac) of environmental reserve. By preserving this land, the wildlife habitats within will be protected.

#### **9.1.2 Vegetation**

Site vegetation includes aspen and white spruce stands of trees along the north facing hillside and prairie grasses on the lower bench and top lands. The RS1NP was designed to preserve and enhance a large escarpment/environmental reserve area. Existing vegetation has been protected within much of this large expanse of land. The remainder of the RS1NP is stripped and graded in accordance with an approved stripping and grading plan.

#### **9.1.3 Ecologically Significant Lands**

The only ecologically significant land on the property is the escarpment along the north boundary of the RS1NP. A significant portion (7.43 hectares/18.36 acres) of this land will be maintained and preserved in its natural state as Environmental Reserve.

#### **9.1.4 Surface and Bedrock Geology**

The Geotechnical Evaluation performed by Golder Associates, prior to stripping and grading states that the RS1NP area was generally a hummocky/rolling grassed upland area and had isolated tree clusters. The dominant materials found in hummocky uplands are silt and clay overlaying till.

#### **9.1.5 Soils and Terrain**

The dominant materials are silt and clay overlaying till.

### **9.1.6 Slopes**

A significant slope has been graded south of the sanitary sewage trunk main. This slope has been graded in conformity with geotechnical recommendations. See Section 1.4.1.1 for further information on the Geotechnical Investigation.

### **9.1.7 Geotechnical Investigation**

A Geotechnical Investigation was prepared by Golder Associates Ltd. and has been submitted to the Town of Cochrane under separate cover. See Section 1.4.1.1 for more information on the Geotechnical Investigation.

### **9.1.8 Flood Potential and Proposals for Mitigation**

No lands within the RS1NP are subject to flooding. All of the RS1NP lands are well upland of the river.

### **9.1.9 Stormwater Study**

A Stormwater Management Plan has been prepared by Westhoff Engineering and has been submitted under separate cover. It has been prepared in conformance with the stormwater policies of the Town and Alberta Environment. See Section 8.3 for more information regarding Stormwater Management.

### **9.1.10 Water Quality and Quantity**

The stormwater management facilities proposed in the RS1NP have been designed to provincial standards to ensure release rates and water quality standards are met. Further information can be found in the Stormwater Management Plan. See Section 8.3 for more information regarding Stormwater Management.

### **9.1.11 Air Quality**

The proposed development within the RS1NP area is predominantly residential with an abundance of open space. The development is not expected to result in any appreciable reduction in the current air quality in this portion of the Town.

### **9.1.12 Visual Resources**

The steep escarpments and rolling terrain of the land are beautiful features of the community. The design of the RS1NP area retains the existing features and protects them as a natural amenity within the community. The design of the community takes advantage of the views of the mountains, the Cochrane valley,

and the natural escarpment, by situating many residents along the escarpments where possible, so they can enjoy this unique amenity.

#### **9.1.13 Land and Resource Use**

The SR-ASP establishes that the RS1NP area include residential land uses and open space, see Figure 3. The environmental impacts of the development will be minimal and the retention of the natural open space of the escarpment will maintain habitat for wildlife and vegetation and be visually appealing to future residents.

#### **9.1.14 Cultural and Heritage Resources**

A Historical Resource Impact Assessment (HRIA) was prepared by Lifeways of Canada Ltd. The assessment indicated some archaeological sites in the general area, but no sites of significance were located within the RS1NP boundary. See Section 1.4.1.2 for more information on the HRIA.

#### **9.1.15 Construction and Demolition Waste Management**

A construction and demolition waste management plan will be provided at each phase of subdivision approval to ensure proper procedures are followed at the time of construction.

### **9.2 Addressing Sustainability**

#### **9.2.1 Planning Principles of the Town of Cochrane Municipal Development Plan**

##### **9.2.1.1 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".*

Riversong Stage 1 meets the Town's Responsible Growth Management goals by providing a new community for future residents of the Town of Cochrane through a logical extension of existing infrastructure and utility servicing. The currently operating public high-school site provides local education and the opportunity for all residents within the RS1NP to walk to school.

A substantial sidewalk and pathway system will link current and future residents with the abundance of natural open spaces. There is 7.30 ha (18.04 ac) of environmental reserve within the RS1NP. The natural ecology of the environmental reserve area will remain intact.



The proposed land use redesignation identified in the RS1NP will allow for greater range of housing choice and affordability, as well as help increase the density of the community. Higher densities support responsible growth management.

#### **9.2.1.2 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."*

Riversong is a community that provides an abundance of greenspace, close proximity to the Bow River and well connected sidewalks and walking paths to encourage residents to venture outdoors to exercise and enjoy these natural amenities. The active presence of the residents within the community will augment the social development of the community. Interaction with the outdoors will make the residents feel connected to their environment, increasing which in turn increases their quality of life.

The variety of housing types proposed within the RS1NP, including street-oriented town housing, semi-detached dwelling units, narrow lot single family homes, front-drive single family homes and larger view-offering homes, to provide a diverse housing and population base in Riversong. A young family could move into an achievable housing style in Riversong, transition to a front-drive home and perhaps eventually to an estate level home before retiring into a semi-detached villa. Residents could live out their entire life-cycle within the community of Riversong.

#### **9.2.1.3 Principle 3: Environmental Stewardship**

*"Environmental stewardship highlights the Town's commitment to careful and responsible management of our natural resources and ecological assets"*

The Riversong Stage 1 Neighbourhood Plan provides 7.43 hectares (18.36 acres) of environmental reserve, preserving the existing vegetation and wildlife habitats within the RS1NP boundary. The topography of Riversong is a natural feature of the community that has been preserved and respected with the community design.

#### **9.2.1.4 Principle 4: Economic Vitality**

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

The anticipated number of residential units with the RS1NP is 803, and the approximate projected population of Stage 1 is 2007 based on 2.5

people per household. This additional population will support local business which will encourage industries and new employers to base themselves in Cochrane.

While the ORC does not include commercial development, there are commercial developments approved and anticipated within close proximity to Riversong. The residential base of Riversong will aid in the sustainability of these commercial developments.

#### **9.2.1.5 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 the formulation of plans and developing services.”*

The RS1NP area has been partially developed and is currently home to many residents. At the onset of development, the public was consulted with the proposed Riversong design and layout. This report is being prepared outside of the typical development process of a community. The residents and neighbouring residents of Riversong are aware of the community design since it has been featured in the sales centres which they visited during the decision process to purchase a home in this particular community.

### **9.3 The Cochrane Sustainability Plan – Thirteen Pathways to the Future**

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.

#### **9.3.1 We Build a Culture of Responsibility**

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

Riversong is a community built on natural amenities, extensive sidewalk and pathway connections and a local high school site. 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. Ownership of the environment breeds responsibility to protect and help direct its future. Residents of Riversong will feel connected to Cochrane through their enjoyment of their surroundings, and therefore empowered to become a voice in Cochrane’s future.

The local high school site offers the opportunity for residents to volunteer and become involved in the community.

### **9.3.2 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 ORC provides density levels that meet 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 developer has and will continue to encourage the builders to build energy efficient homes within Riversong that employ innovative technology to reduce energy consumption, such as low flush toilets, energy efficient lighting, and energy star rated appliances.

Riversong has and will continue to develop under the guidelines of a proper Stormwater Management Plan to ensure the stormwater runoff quality meets Provincial standards prior to entering the Bow River.

### **9.3.3 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 RS1NP will provide homes for approximately 2000 new residents to Cochrane. These residents will utilize the nearby local convenience commercial centres as well as the downtown core for their shopping, entertainment and service needs. The continued 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 Riversong residents. Sporting events, school concerts and art shows will provide residents with the opportunity to socialize and celebrate together; thereby providing a social focus for the community.

### **9.3.4 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.***

Riversong has proposed to provide residents with a diverse range of housing options. A potential resident of Riversong 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. Larger estate homes are also offered adjacent to the escarpment which may become attractive as our buyer reaches middle age. Once the retirement years approach, lifestyle changes may result in that buyer looking to one of the maintenance free, multi-family options that are being considered in Riversong. A resident of Riversong could live their entire life within the community that offers housing appropriate for all stages of life and affordability levels.

The extensive sidewalk, walkway and pathway system in Riversong offer residents with multiple choices for getting around their community. The natural escarpment is a significant feature of the community and will be left in its natural state.

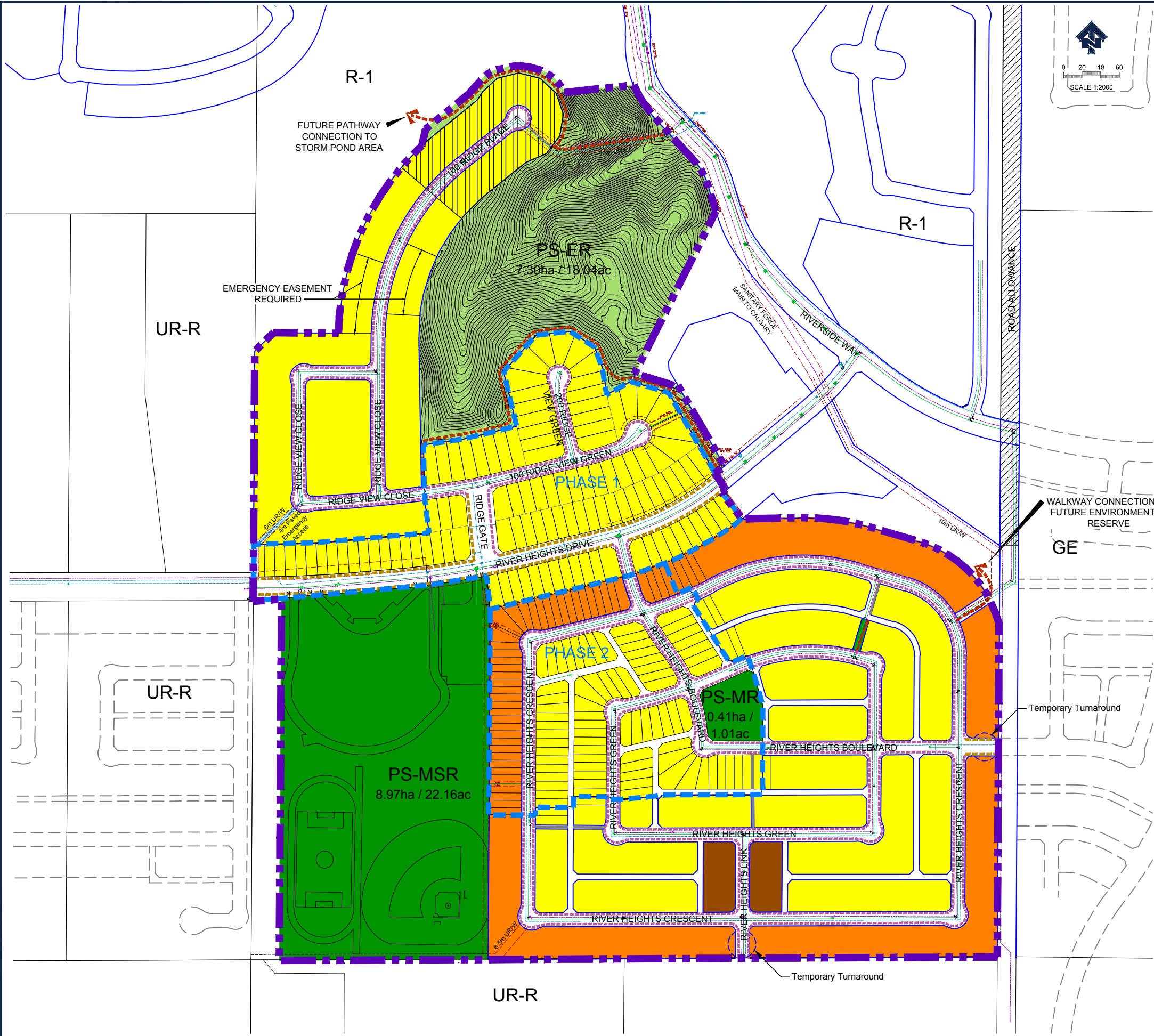
The local school provides opportunities for education, jobs and volunteering within the Riversong community.

With all of the amenities Riversong has to offer, highway commercial uses currently being developed approximately one kilometre to the west, viable local commercial opportunities located within close proximity to the east, and the Cochrane downtown core less than ten minutes drive, Riversong will provide residents with a complete community experience.

## **APPENDIX**

## **Appendix A: RIVERSONG STAGE 1 NEIGHBOURHOOD PLAN**





# Riversong

COCHRANE

## NEIGHBOURHOOD PLAN

Stage 1

Legal Descriptions:  
Portion of NE1/4 SEC 26-25-4-W5

Prepared for:

# Tamani

COMMUNITIES

Prepared by:

**FOCUS** brown & associates

PLANNING GROUP

### Legend

DEEP SERVICES - PROPOSED

- STORM SEWER/MANHOLE
- SANITARY SEWER/MANHOLE
- WATER MAIN/HYDRANT
- RIVERSONG STAGE 1 NEIGHBOURHOOD PLAN (RS1NP) BOUNDARY
- EXISTING PHASE BOUNDARIES
- 2.0m LOCAL PATHWAY
- SEPARATE SIDEWALK
- MONOLITHIC SIDEWALK
- PAVED WALKWAY
- SINGLE FAMILY
- SEMI-DETACHED
- TOWNHOUSING
- MUNICIPAL RESERVE
- ENVIRONMENTAL RESERVE
- DEVELOPMENT AREA TO INCLUDE SPRINKLERS
- CONTOUR INTERVAL 1.0M
- LAND USE DESIGNATIONS

R-1

### NOTES

ALL ROADS ARE RESIDENTIAL STANDARD (9m/15m) UNLESS OTHERWISE NOTED.  
ALL LANES ARE 6.0m WIDE

RIVERSONG STAGE 1 NEIGHBOURHOOD PLAN STATISTICS					
	Frontage (m)	Hectares (+/-)	Acres (+/-)	Number of units	% of GDA
Total Land Area		54.34	134.27		
Environmental Reserve		7.43	18.36		
Gross Developable Area (GDA)		46.91	115.91		100%
General Land Uses					
Residential		28.27	69.86		60.3%
R-1, Residential Single Detached Dwelling District	5629.96	21.62	53.42		
Existing Lots	1604.00			187	
Frontage Remaining	4025.96				
* Ant. number of undeveloped lots				388	
Max. number of undeveloped lots based on 9m lot width				447	
R-2, Residential Single and Two-Dwelling District	1251	6.12	15.12		
Existing Lots				44	
Ant. Number of undeveloped lots based on 7.92m				158	
Max. Number of undeveloped lots based on 6m				209	
R-3, Residential Multi-Unit Dwellings District		0.53	1.31		
Anticipated 20 upa				26	
Maximum 30 upa				39	
Municipal Reserve		9.41	23.25		20.1%
School Site		8.97	22.16		
Park		0.44	1.09		
Roadways and Lanes		9.23	22.81		19.7%
Total number of units					
Anticipated.				803	
Maximum				926	
Density					
Anticipated.				17.1 upha	6.9 upa
Maximum				19.7 upha	8.0 upa
Density adjusted to reflect a maximum 10% MR dedication					
Anticipated.				18.8 upha	7.6 upa
Maximum				21.7 upha	8.8 upa

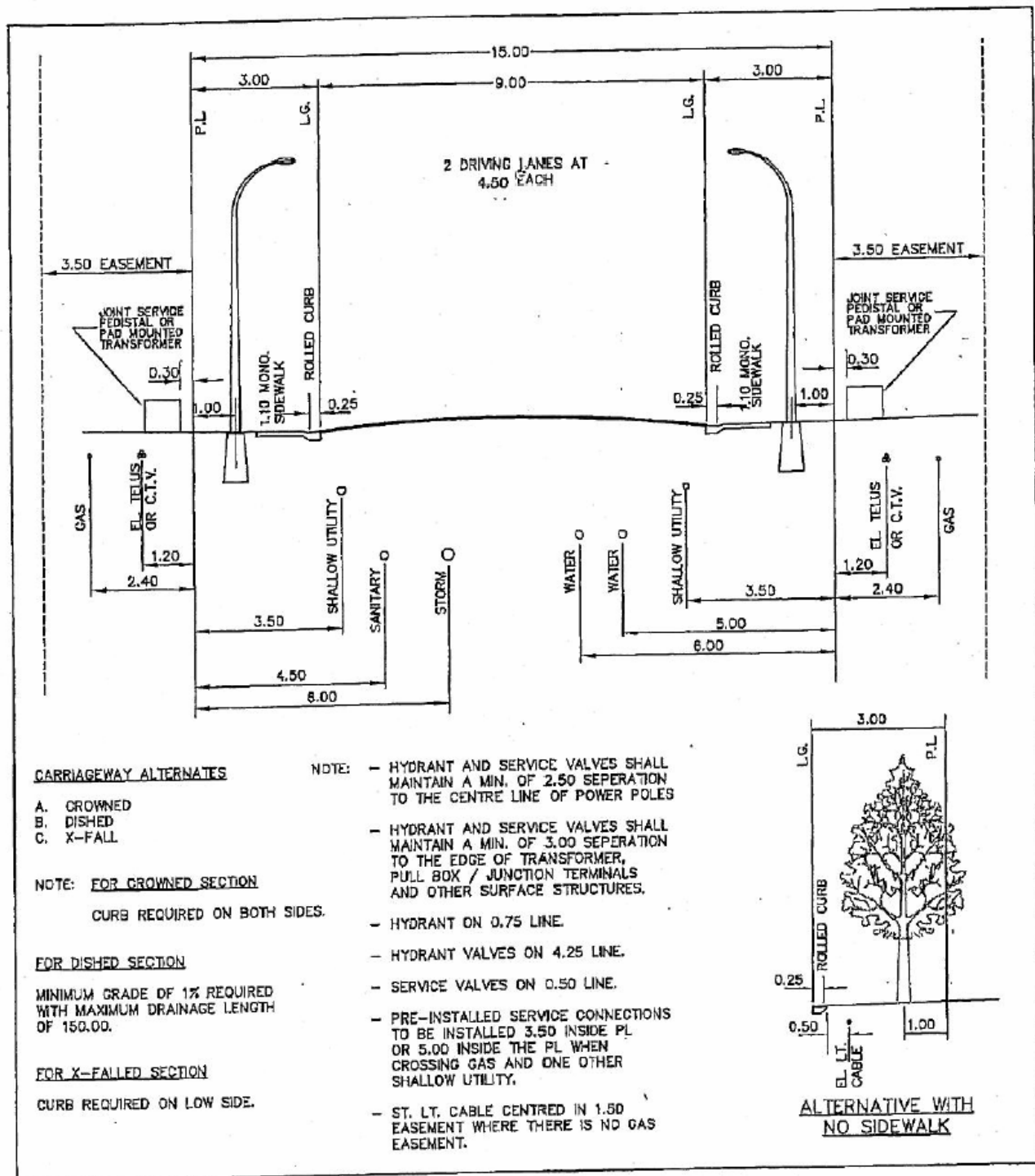
### TOWN OF COCHRANE: LOCATION MAP

Prepared for:  
TAMANI COMMUNITIES

Prepared by:  
BROWN AND ASSOCIATES PLANNING GROUP  
in consultation with  
FOCUS CORPORATION

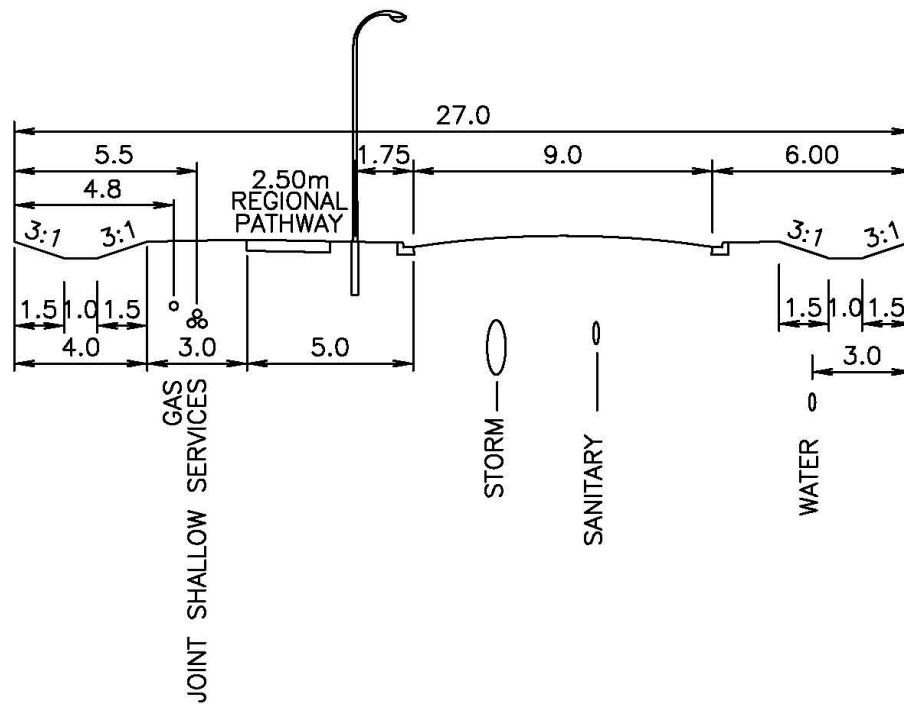
REVISIONS	DATE

## Appendix B: CROSS SECTION 'D' – MODIFIED RESIDENTIAL ROAD



## CROSS SECTION 'D' - MODIFIED RESIDENTIAL SCALE: NTS

## Appendix C: CROSS SECTION 'E' – MODIFIED COLLECTOR ROAD



CROSS SECTION  
RIVERSIDE WAY  
RIVERSIDE HEIGHTS DRIVE TO RIVERSIDE COURT



**Appendix D: PHOTOGRAPHS OF EXISTING RIVERSONG HOUSING DEVELOPMENTS**



***Figure D-2: Examples of Existing Narrow 30 Foot Lot Housing in Riversong Phase 2***



***Figure D-3: Photo of an Existing 34 Foot -36 Lot Foot Front-Drive House in Riversong***

*Riversong Stage 1 Neighbourhood Plan Report, May 28, 2010*

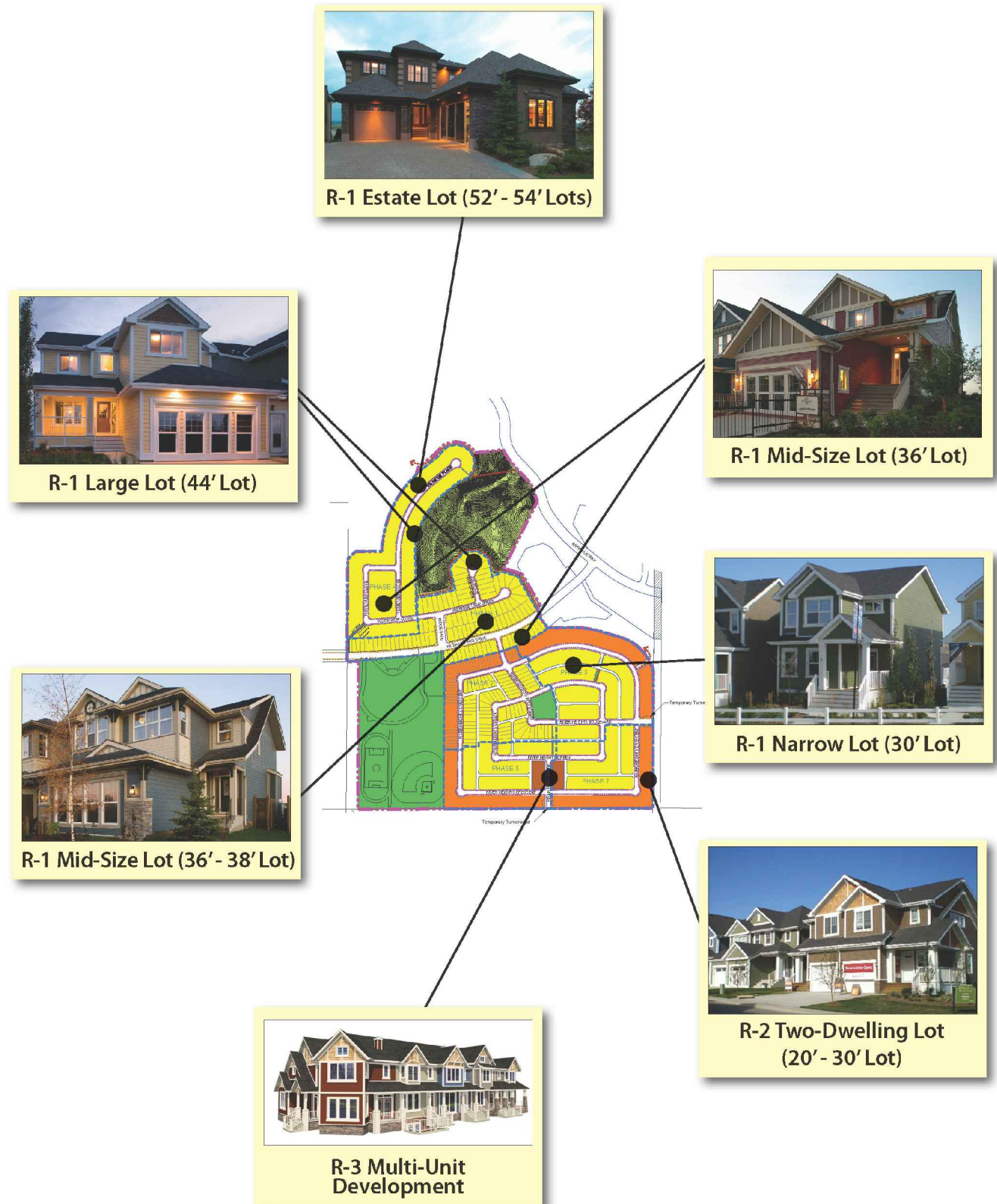




**Figure D-4: Photos of Existing Semi-Detached Housing in Riversong Phase 2**



**Figure D-5: Existing Streetscape of Narrow (30 foot) Lot Housing in Riversong**



**Figure D-6:**  
Riversong Stage 1 Housing Variety



## Appendix E: HISTORICAL RESOURCE IMPACT ASSESSEMENT CLEARANCE LETTER



Cultural Facilities and  
Historical Resources Division  
Office of the Assistant  
Deputy Minister

Old St. Stephen's College  
8820 - 112 Street  
Edmonton, Alberta  
Canada T6G 2P8

Telephone 403/431-2300  
Fax 403/427-5598

April 2, 1998

Our File: 80-181

Mr. Ken Brisbin:  
Brisbin and Sentic Ltd.  
220-5403 Crowchild Trail N.W.  
Calgary, Alberta  
T3B 4Z1

Dear Mr. Brisbin:

SUBJECT: SOUTHLAND DEVELOPMENT CORP. - SHADOW RIDGE SUBDIVISION  
MITIGATION REQUIREMENTS, ARCHAEOLOGICAL SITE EhPo-49  
HISTORICAL RESOURCES ACT REQUIREMENTS

I recently received a letter (March 16, 1998) from your consultant Brian Reeves, written in response to outstanding requirements for mitigation at archaeological site EhPo-49 (Permit 80-181).

In his letter, Mr. Reeves has indicated that he revisited the site, and determined that in fact it is a natural formation of loose cobble sized rocks, rather than a cultural feature. Based on this inspection Mr. Reeves has recommended that the mitigation requirements for site EhPo-49 be rescinded.

I concur with this recommendation. Consequently, Alberta Community Development has no further concerns with or objections to development proceeding on the captioned subdivision.

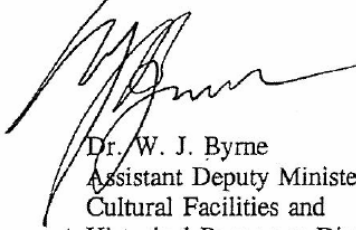
Should you require additional information or have any questions regarding our Department's review of this project, please contact Barry Newton of the Historic Sites Service, (431-2330, Historical Resources Division, Alberta Community Development, 8820-112 Street, Edmonton, Alberta, T6G 2P8; or Fax 427-3956.

...cont.

Mr. Ken Brisbin  
April 2, 1998  
Page 2

On behalf of Alberta Community Development, I would like to thank you for your cooperation in our endeavour to conserve Alberta's past.

Sincerely,



Dr. W. J. Byrne  
Assistant Deputy Minister  
Cultural Facilities and  
Historical Resources Division

cc: Brian Reeves, Lifeways of Canada Ltd.  
J. W. Ives, Archaeology and Ethnology Section, P.M.A.  
Barry Newton, Historic Sites Service, SUB 97.80-181.RES

## Appendix F: ENVIRONMENTAL SITE ASSESSMENT LETTER UPDATE



ALMOR TESTING SERVICES LTD.

7505 - 40 STREET S.E., CALGARY, AB T2C 2H5 PHONE (403) 236-8880 • FAX (403) 236-1707

2006 10 12

86-042-03-1

Keyland Development Corporation  
Box 68022 - 28 Crowfoot Terrace NW  
Calgary, Alberta  
T3G 3N8

Attention: Mr. Raymond Smith Sr.

Re: Level I Environmental Site Assessment Update  
Cochrane Crossing  
Portions of S  $\frac{1}{2}$  of Sec 35, Twp 25, Rge 4, W5M and  
NE  $\frac{1}{4}$  of Sec 26, Twp 25, Rge 4, W5M  
Cochrane, Alberta

This letter confirms we were retained to conduct an updated Phase I Environmental Site Assessment (ESA), for the above noted site. A Level I ESA was completed in January, 1998, by Almor. The surface and subsoils in the acreage area have not been compromised, since the initial observations and review. Rough Grading construction in the north portion was completed and no environmental hazards were encountered at the site. The mobile home services in the northwest corner of the site requires removal of the associated water well and septic tank. Attached are site plans of the area.

It is our opinion that no significant environmental impairment exists on the subject site. Further environmental investigation is not required, at this time.

We trust this meets with your present requirements.

Respectfully submitted,  
ALMOR TESTING SERVICES LTD.



J.B. Montgomery, P.Eng.  
JBM:ms:A01785

\* APEGGA Permit to Practice #P2260

## Appendix G: LETTER FROM ALBERTA TRANSPORTATION RE: RIVER AVENUE BRIDGE



Regional Services  
SOUTHERN REGION

2nd Floor, 803 Manning Road NE  
Calgary Alberta T2E 7M8

Toll-Free Connection  
Outside Edmonton - Dial 310-0000  
Telephone 403/297-6311  
Fax 403/297-7682  
www.trans.gov.ab.ca

Our File: Cochrane-137

May 4, 2010

Mr. Reg Jans  
Focus Corporation  
100, 6131 - 6 Street SE  
Calgary AB T2H 1L9

Dear Mr. Jans:

**RE: PROPOSED USE OF RIVER AVENUE BRIDGE  
BOW RIVER, EAST OF HIGHWAY 22**

Regarding your email inquiry for emergency vehicle access to this bridge, Alberta Transportation can confirm that the bridge is able to be used for emergency access to the Riversong community. This clarification was previously provided to the Town of Cochrane by the department's bridge section in an email dated March 29, 2010.

This bridge is on a local road in the Town of Cochrane. Although Alberta Transportation has continued to be involved with this bridge structure (for example providing technical assistance when a water line was added in 2007) the Town of Cochrane is the responsible road authority and the bridge is under the control and management of the Town of Cochrane.

If you have any questions, please contact this office.

Yours truly,

A handwritten signature in cursive script that reads "Trevor Richelhof".

For Trevor Richelhof  
Development and Planning Technologist

TBR/fm

cc: Mr. Kurt Alksne - Town of Cochrane

R:\URBAN\CI\Cochrane\Cochrane-137.doc

2007/2008/2009/2010

TRANSPORTATION

2007/2008/2009/2010

