

TAMANI COMMUNITIES | JOHN ROBINSON

# PRECEDENCE

RIVERSONG STAGE III

## NEIGHBOURHOOD PLAN

Town of Cochrane Submission | April 2017



**Tamani**  
COMMUNITIES







# PRECEDENCE

RIVERSONG STAGE III

## NEIGHBOURHOOD PLAN

Submitted by:

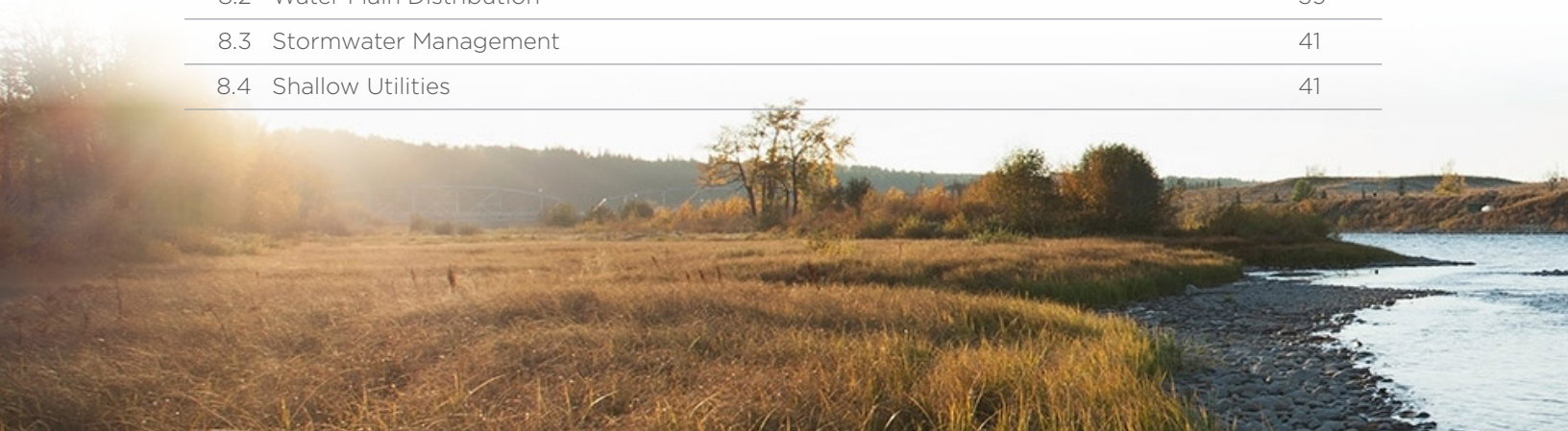
Tamani Communities & John Robinson

B&A Planning Group

April 2017

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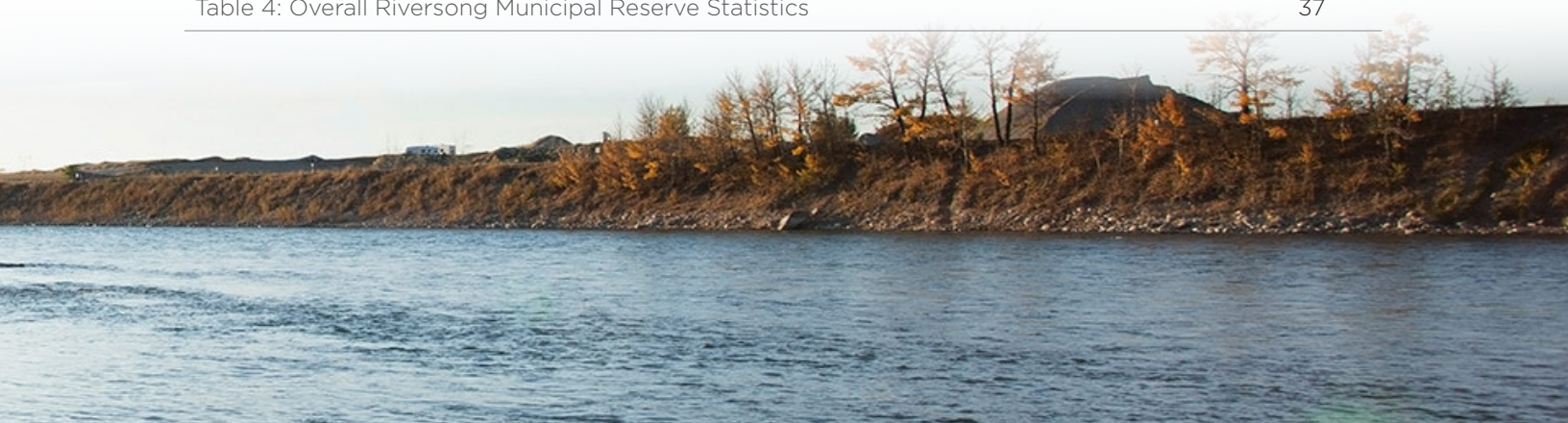
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# PRECEDENCE VISION

1

Precedence will be an **active, vibrant** neighbourhood where residents are encouraged to walk, cycle, and interact with both their neighbours and the surrounding natural environment.

2

The natural landscape surrounding it will make Precedence a **unique** neighbourhood within Riversong and the Town of Cochrane.

3

Precedence will offer a combination of **high-quality** architectural styles which include West Coast, Modern Prairie, and Urban Contemporary.

4

Precedence will complete the community of Riversong

5

Precedence will offer connectivity through the provision of the lands to permit Stage 1 of James Walker Trail South



# PRECEDENCE

## GUIDING PRINCIPLES



### ***Protect the Natural Environment***

Maintain and **protect** the Riversong escarpment by dedicating these lands as Environmental Reserve, and **conforming to** all Town of Cochrane **policies** for developments adjacent to slopes, ensuring that these areas are preserved and accessible to Cochrane residents.



### ***Capitalize on the Landscape***

Utilize the topography and views of the Rocky Mountains, the Bow River Valley, and Downtown Cochrane to develop an exciting and **uniquely situated** residential neighbourhood.



### ***Maximize the Public Realm***

Achieved through well-placed pedestrian pathways **connecting** throughout the **community to** parks and playgrounds, ridge top resting areas and walkways, views along the river valley towards the mountains, decorative street furniture, extensive landscaping, and retention of **natural areas**.



### ***Unique Sense of Place***

**Retain and integrate** the natural environment into the community plan and create vibrant, attractive, and **unique** architecture and community **theming**.

## 1.0 INTRODUCTION



### 1.1 *Policy Context and Purpose of the Plan*

The Town of Cochrane Council adopted its Municipal Development Plan (MDP) in October 2008. Under the policies of the MDP, an Area Structure Plan (ASP), 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 2009, the Town adopted the Cochrane Sustainability Plan (CSP). This Plan identifies Town goals for a sustainable future, and is also utilized to provide direction for planning applications.

When the planning for Riversong Stage 1 began in 2010, it became apparent that portions of the 1994 South Ridge Area Structure Plan no longer aligned with the 2008 MDP or the 2009 CSP. To bridge this gap, the Riversong Design Brief was prepared in 2010 to provide ASP level direction for the community of Riversong, which aligns with and carries forward the policies and goals of the MDP and CSP. After the Riversong Design Brief was accepted by Council, the 1994 South Ridge Area Structure Plan (SR-ASP) was amended to recognize this Design Brief. This amendment was adopted as an appendix to the SR-ASP as the guiding document for the Riversong community. The Riversong Stage 3 Neighbourhood Plan, to be known as Precedence, aligns with the Riversong Design Brief and therefore the SR-ASP, the MDP, and the CSP.

The Town of Cochrane created and adopted Integrated Neighbourhood Design Guidelines (INDG) to ensure high quality development within Cochrane communities in May 2013.

Precedence addresses the Design Principles of the INDG through appropriate and innovative neighbourhood design.

As the final stage of Riversong, the Precedence Neighbourhood Plan provides details on how the community of Riversong will be completed. As required through previous Riversong Neighbourhood Plans, special attention will be given to streetscapes and the pedestrian environment to ensure that Riversong continues to be a community where residents have ample opportunity to walk or bicycle within the community, and that connections are in place for accessing the local High School, community greenspaces, open spaces along the Bow River, and adjacent communities and services planned in the area. Precedence will also offer housing choice through a wide variety of housing types, styles and price ranges. Precedence will be a unique neighbourhood within Riversong and the Town of Cochrane.

### 1.2 *Location and Adjacent Uses*

The Precedence area is located within the south sector of the Town of Cochrane and comprises approximately 40.44 hectares (99.93 acres). As shown in Figure 1, the area is bounded by:

- the Bow River, and future gravel extraction lands to the north;
- an existing gravel extraction operation to the east;
- Riversong Stage 1 to the southwest; and
- Riversong Stage 2 and the Bow River to the northwest.



**Figure 1:** Location Plan

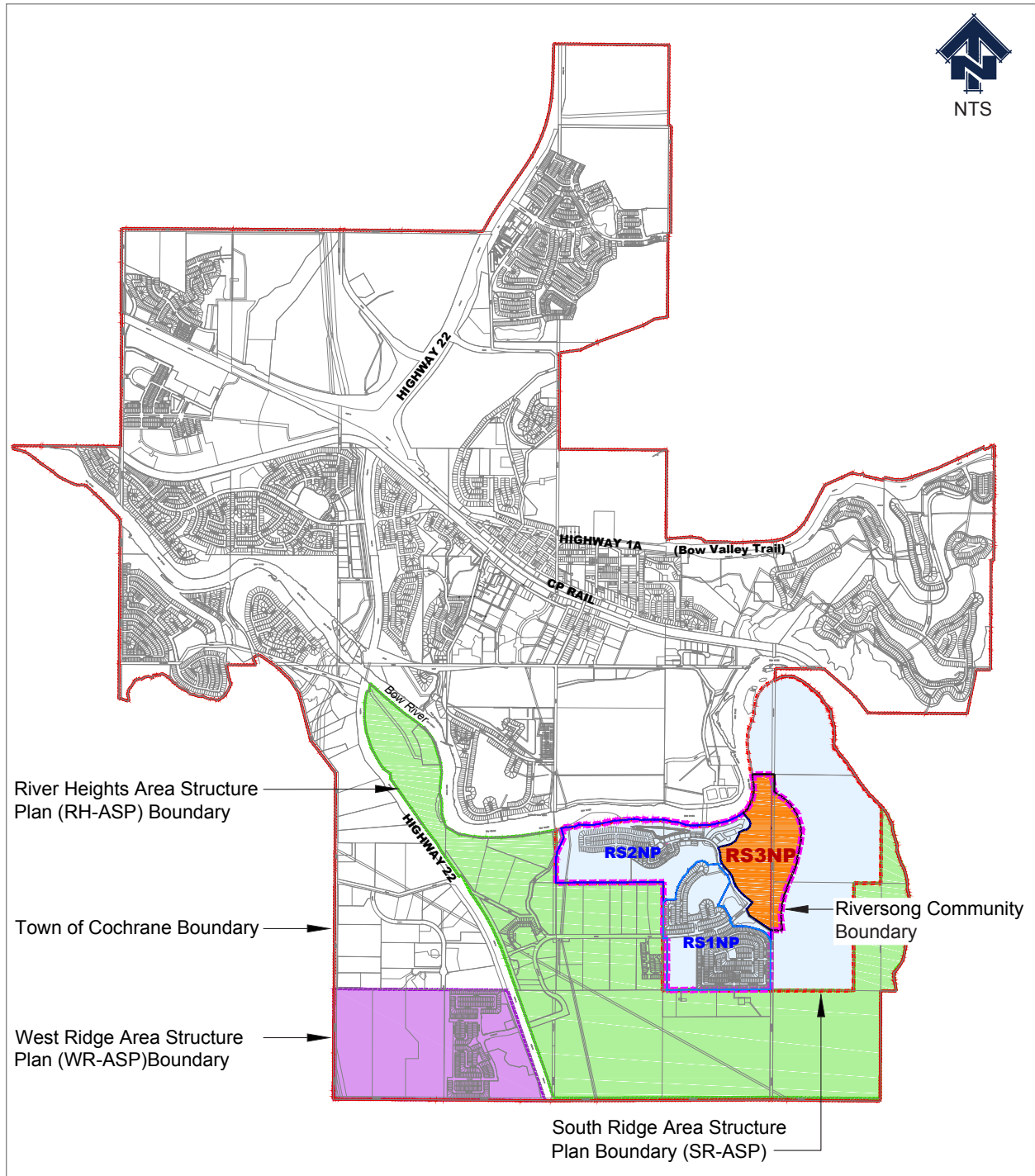
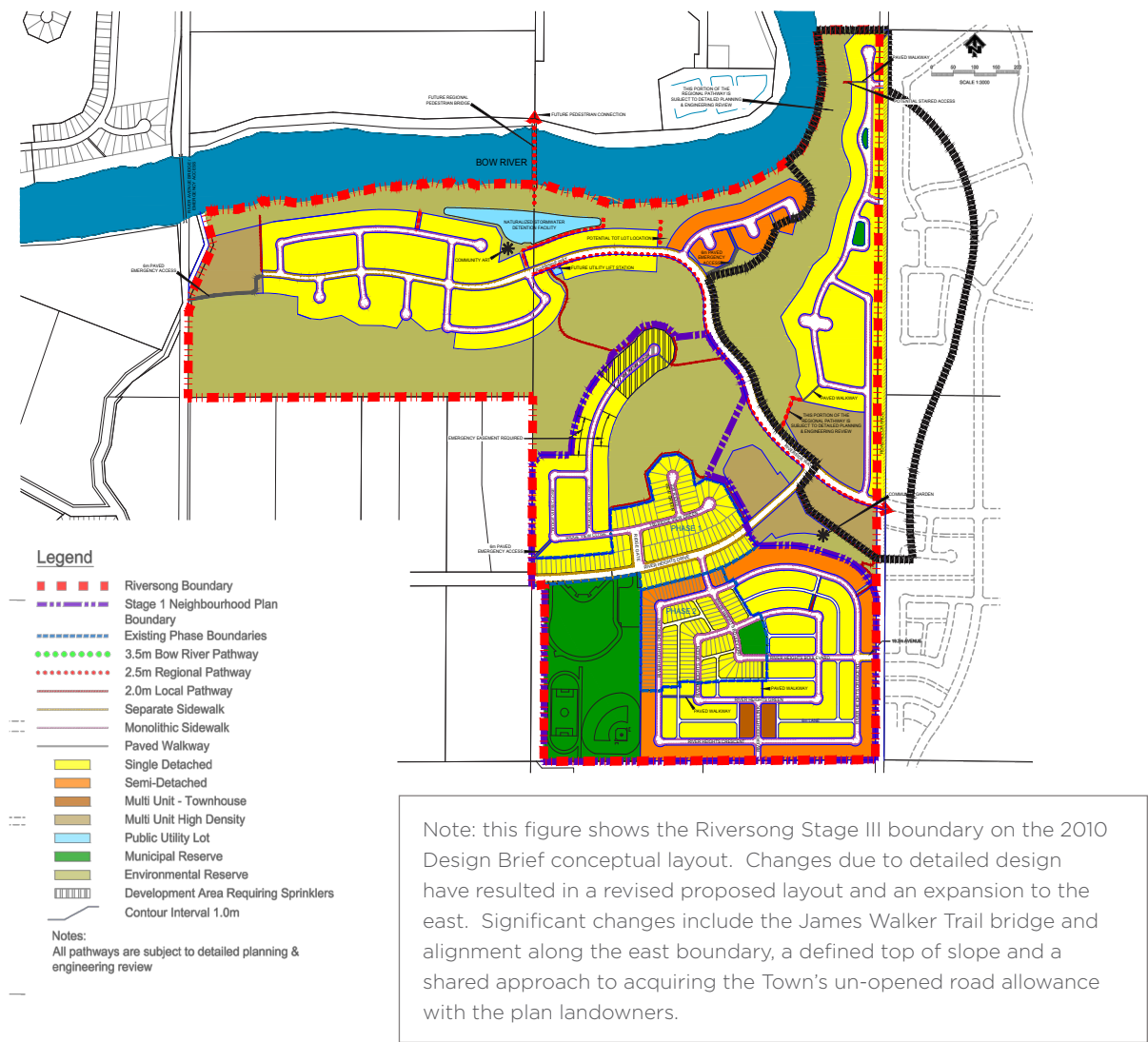


Figure 2: Location of Precedence within the 2010 Riversong Design Brief



1.3 Land Titles and Ownership

The lands within Precedence are owned by 1300534 Alberta Ltd. (managed by Tamani Communities) and John Robinson. The Tamani lands are legally defined as:

DESCRIPTIVE PLAN 0412318  
BLOCK 9  
LOT 1

EXCEPTING THEREOUT ALL MINES AND MINERALS AND EXCEPTING THEREOUT:

PLAN NUMBER	NUMBER	HECTARES	ACRES
SUBDIVISION	0910527	6.820	16.9
SUBDIVISION	0911859	2.02	5.00
SUBDIVISION	0912151	6.245	15.43
SUBDIVISION	1110685	6.383	15.77
SUBDIVISION	1110929	6.961	17.2
SUBDIVISION	1111124	0.987	2.44
SUBDIVISION	1310062	4.54	11.22
SUBDIVISION	1311268	25.65	63.38



The John Robinson lands are legally defined as:

MERIDIAN 5 RANGE 4 TOWNSHIP 25  
SECTION 25

LEGAL SUBDIVISIONS 12 AND 13 AND THE  
WEST HALVES OF LEGAL SUBDIVISIONS  
11 AND 13 IN THE NORTHWEST QUARTER  
CONTAINING 48.6 HECTARES (120 ACRES)  
MORE OR LESS EXCEPTING THEREOUT ALL  
MINES AND MATERIALS.

and;

MERIDIAN 5 RANGE 4 TOWNSHIP 25  
SECTION 36

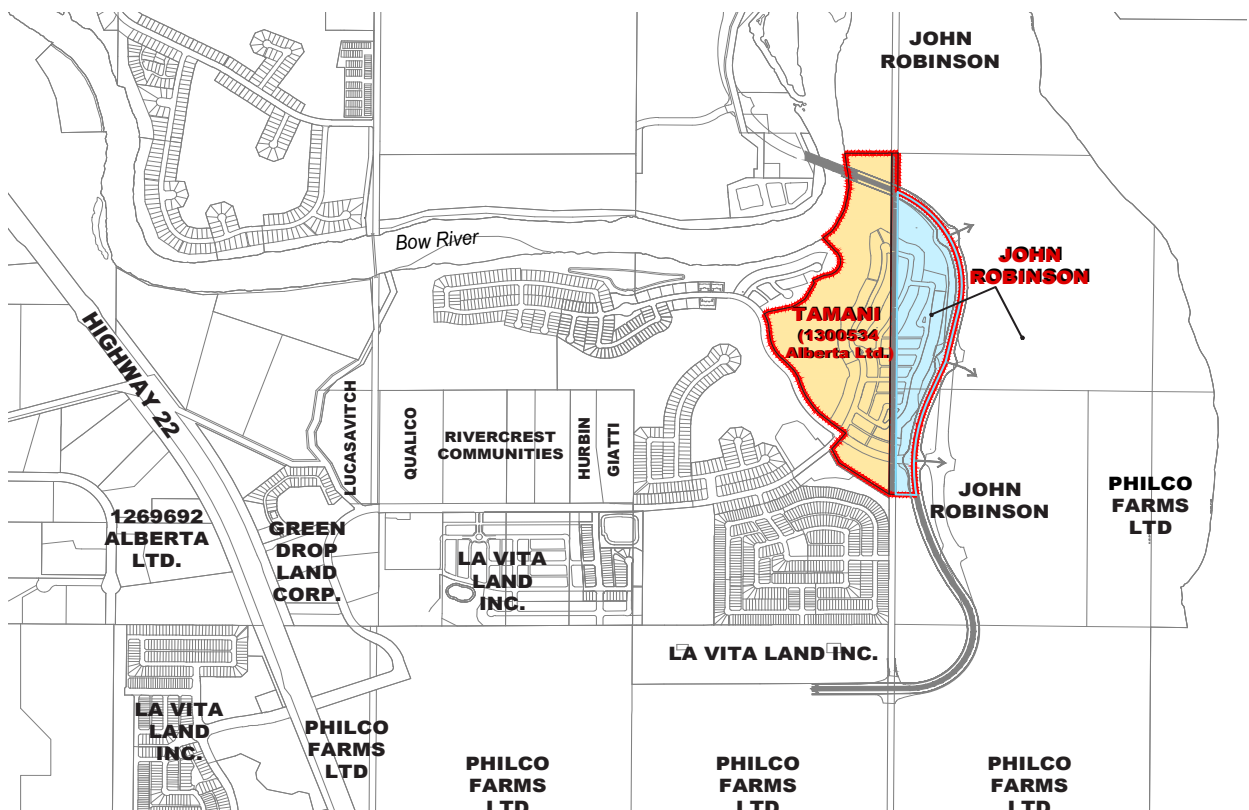
THAT PORTION OF THE SOUTH WEST  
QUARTER AS SHOWN ON THE TOWNSHIP  
DATED 13 NOVEMBER 1895 WHICH LIES TO  
THE SOUTH AND WEST OF THE BOW RIVER  
CONTAINING 154.5 ACRES MORE OR LESS

EXCEPTING THEREOUT ALL MINES AND  
MINERALS AND THE RIGHT TO WORK THE  
SAME

Land negotiations between the Town of  
Cochrane and the Precedence landowners are  
required to finalize both the James Walker Trail  
alignment, and the portion of the Riversong  
Stage 3 Neighbourhood Plan that falls within  
the Town right-of-way. The Town's road  
right-of-way will be divided 50/50 between  
Tamani and John Robinson as part of the land  
exchange for the James Walker Trail lands.

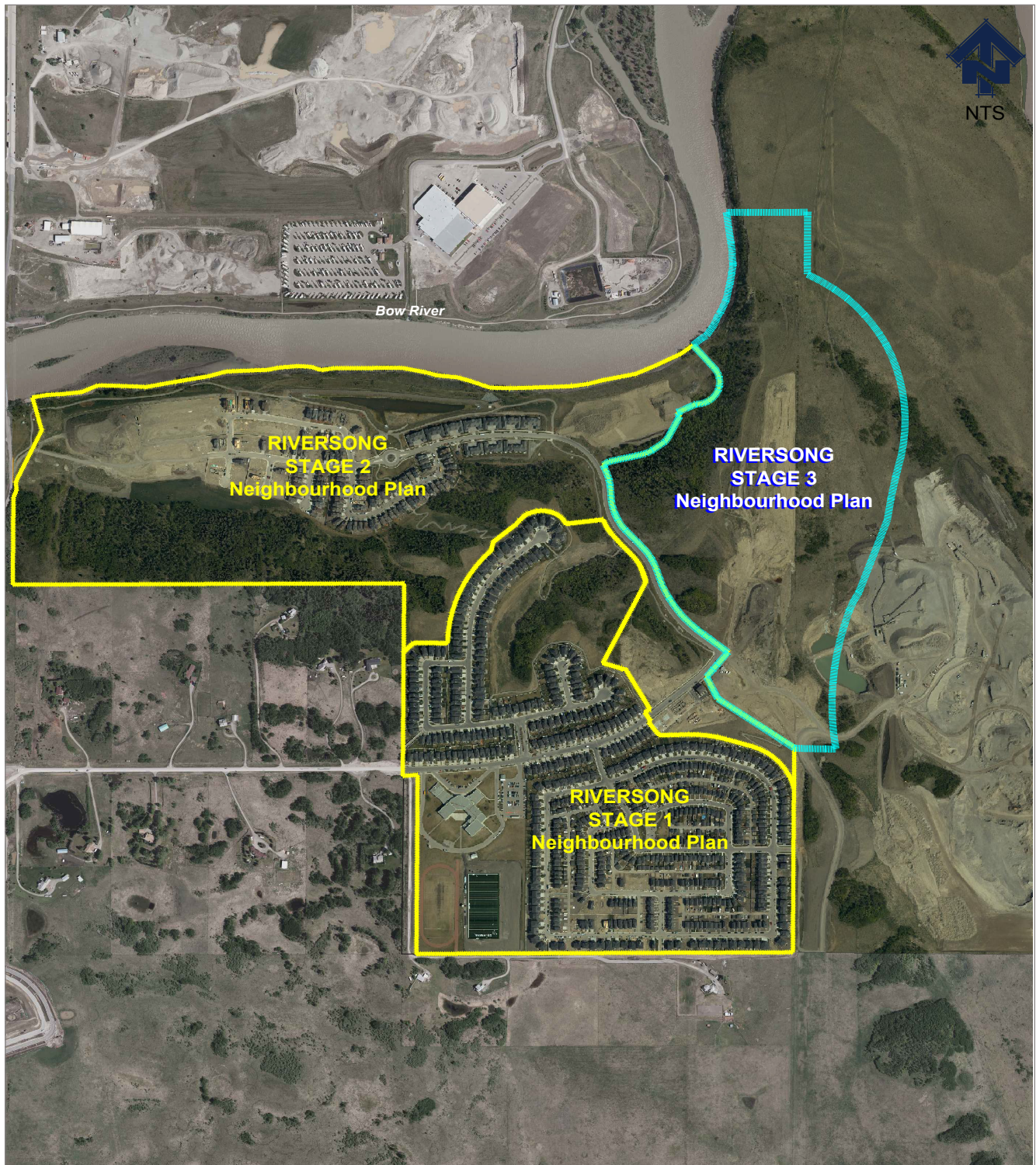
These land acquisition areas are illustrated on  
Figure 5. Finalization of the land acquisition  
details will be determined prior to Third  
Reading of the land use amendment bylaw. The  
transfer of land ownership will occur through  
the subdivision process.

**Figure 3: Location and Adjacent Ownership**





**Figure 4:** Aerial Photograph of Riversong Stages 1, 2 and 3





1.4    **Precedence Neighbourhood Plan Evolution**

During the preparation and review of Precedence, it was determined that there would be a benefit to the Town if the Stage 1 portion of the James Walker Trail South alignment was included within the Riversong Stage 3 Plan, as it is a key component to the overall Cochrane transportation network. Therefore, lands east of the original Precedence easterly boundary have been added to the plan area (Robinson lands), up to and including Stage 1 of the James Walker Trail South alignment. The background analysis for the lands east of the Town’s un-opened road allowance (Robinson) are underway, in support of the gravel operation.

***The required background studies for lands east of the Town’s un-opened road allowance. will be submitted to the Town prior to land use approval.***

1.5    **Background Studies**

Precedence will be studied in 2 parts, identified by landowner. Tamani Lands are the lands west of the Town’s un-opened road allowance and the Robinson Lands are the lands owned by John Robinson east of the Town’s road allowance, see Figure 3. The John Robinson portion of Precedence is currently being studied along with the greater Robinson lands in support of the gravel operations. However,

high level reviews indicate no wetlands or significant environmental features. Submission of the analysis to confirm this will be required prior to subdivision of any lands east of the Town road allowance. The studies completed and submitted in support of the Riversong Stage 3 Neighbourhood Plan are listed in Table 1: Background Studies.

**Table 1: Background Studies**

Study	Tamani	Robinson
Geotechnical Report	Y	N
Environmental Site Assessment	Y	N
Biophysical Impact Assessment	Y	N
Traffic Impact Assessment	Y	Y
Stormwater Management Plan	Y	Y

Tamani background studies are summarized below. Robinson background studies will be submitted and reviewed to the satisfaction of the Town of Cochrane prior to any subdivision approval.

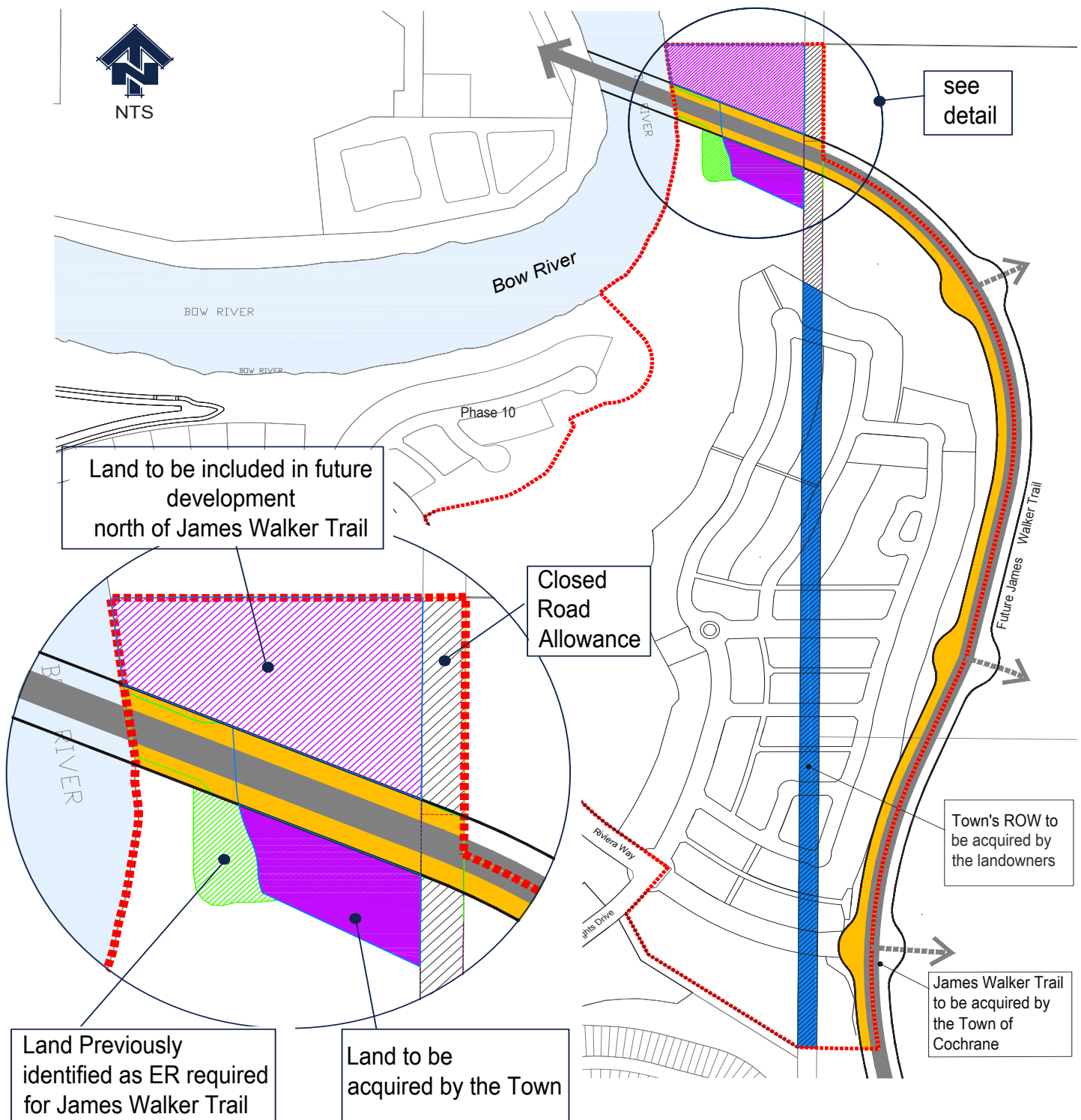
1.5.1 Topography

Precedence contains a large escarpment along the western portion of the Plan area. East of this escarpment, the lands contain undulating terrain and generally slope downward from southwest to northeast, with several relatively flat areas in the central and northern portions of the Plan area.





**Figure 5: Land Acquisition Areas**



### 1.5.2 Geotechnical Investigation (Tamani)

A Geotechnical Investigation was completed for the Tamani lands in December 2013 by McIntosh-Lalani Engineering Ltd. The objective of this report was to assess the general subsurface soil conditions of the site.

Six boreholes were drilled throughout the site in November 2013. These drills found that the general subsurface soil stratigraphy consisted of silts and sands, gravel deposits, and silty clay overlying sedimentary rock. Up to 3m of fill was found toward the south end of the site.

Recommendations of this report include having site grading monitored, reviews of compaction testing, and a Slope Stability Evaluation and Deep Fill report, which will be issued separately. Otherwise, the soils proposed for development are considered capable of supporting residential structures.

The Geotechnical Investigation report has been submitted under separate cover. A Preliminary Grading and Environmental Reserve Disturbance plan is shown as Figure 6.

### 1.5.3 Slope Stability Assessment

The Town of Cochrane requires identification of the Top of Slope, as well as a 15 metre development setback from the Top of Slope. An updated Slope Stability Assessment was completed in May 2014 by McIntosh-Lalani Engineering Ltd, prepared as a follow-up to their July 2011 report. The objectives of this report were to assess the stability of the slopes and confirm development setbacks and Factors of Safety from the top of slope.

In 2016, updated Slope stability analyses were conducted on the slopes affecting the developable areas of Precedence, on both the west and east sides, in order to determine Factors of Safety (FOS). The Town requires an FOS of 1.5. 10 cross-sections were analyzed by McIntosh-Lalani in order to confirm the slope stability and development setback. The results of the analysis provided guidance to ensure that

a minimum 1.5 FOS is provided in all locations. The analysis found that the required 15m setback from Top of Slope exceeded a FOS of 1.5 in almost all locations, however where the 15m setback did not achieve a 1.5 FOS, the setback line was moved (increased beyond 15m) to ensure a 1.5 FOS was achieved.

One small pocket of grading within the 15m setback zone is proposed. This area is 0.05 ha (0.12 ac), which equates to 82 linear metres along the escarpment, and still meets an FOS of 1.5. As per Policy 6.3.3(u) of the MDP, small pockets of land can be graded within an escarpment zone at the discretion of the development authority.

In summary, the Precedence development will meet or exceed a 1.5 FOS from the existing top of slope. As proposed, Precedence conforms to the Land Use Bylaw. Further details of how Precedence conforms to Town policies regarding development adjacent to slopes are provided in Section 9.1 and illustrated on Figure 19.

***The Precedence Neighbourhood Plan development setbacks conform to the Town of Cochrane's MDP and Land Use Bylaw.***

### 1.5.4 Biophysical Assessment (Tamani)

A Biophysical Assessment was prepared by Sweetgrass Consultants Ltd in May 2014. This report analyzed the natural environment of the site, including the geology, plant species, and wildlife.

The Biophysical Assessment found that the proposed neighbourhood development will not have any significant impacts on the natural environment. Much of the area that is to be developed has already been disturbed, and there are no significant or at risk plant or animal species in the area. The more significant natural areas will be protected as Environmental Reserve, which will maintain wildlife corridors and minimize habitat fragmentation. The Biophysical Assessment has been submitted under separate cover.

### 1.5.5 Design Basis Memorandum & As-Built Information for Riversong Stormwater Storage Facility

The Design Basis Memorandum & As-Built Information document was prepared by Westhoff Engineering Resources Inc. in July 2012 for the Riversong Stormwater Storage Facility. This Staged Master Drainage Plan, was completed by Westhoff in November 2005 for the greater Riversong area, at the time known as the Keylands Lands of the Cochrane Crossing. Westhoff prepared the 2012 report in order to include all of the boundaries in the surrounding areas and to review the pond design, which is not shown in any other report.

In the 2012 Westhoff report, the Tamani portion of Precedence is included within the storm pond boundaries, and therefore the Riversong pond was designed to accomodate these lands.

***With the inclusion of Robinson lands into Precedence, capacity for Robinson lands must be confirmed (prior to land use approval). Should there not be capacity in the Riversong pond, some portions of Precedence may drain to a temporary pond east of James Walker Trail potentially in conjunction with a drainage solution for James Walker Trail.***

### 1.5.6 Environmental Site Assessment (Tamani)

A Phase 1 Environmental Site Assessment (ESA) was completed by PHH ARC Environmental Ltd in September 2012 for Riversong Phases 6 to 13. The ESA did not identify any potential subsurface impacts in connection with this area, and recommended that no further work was required to be completed. The ESA has been submitted under separate cover.

### 1.5.7 Traffic Impact Analysis (Tamani & Robinson)

A Traffic Impact Analysis was completed by WSP in October 2015 based on scoping set by the Town and their consultants. This report has been submitted as part of this Neighbourhood Plan. Further discussion of this analysis is found in Section 3.2.

### 1.5.8 Existing State

The majority of the developable lands in Precedence are undulating, disturbed grassland. A portion of the Precedence area has been stripped and rough-graded. Figure 4 illustrates the existing state of the Precedence area through an aerial photograph.

The Precedence plan area has land use approved under Bylaws 19/2006, 17/2007, and 20/2011. Further discussion on the existing land uses can be found below, and in Section 4.0: Land Use.

## 1.6 Current Land Use Designations

Figure 7 shows the Riversong community within the Town's existing Land Use Map.

Lands are currently designated Residential High Density Multi-Unit Dwellings District (R-M) in the southern portion of Precedence and Residential Single Detached Dwelling District (R-1) in the rest of the Plan area up to the Town's ROW. East of the Town's ROW on the lands owned by John Robinson are designated as Gravel Extraction (GE), as shown on Figure 7. Lands identified as GE in the site up to the proposed James Walker Trail will not be utilized for gravel extraction purposes. With this proposed Neighbourhood Plan and Land Use Amendment, areas of environmental significance will be established as Environmental Reserve.

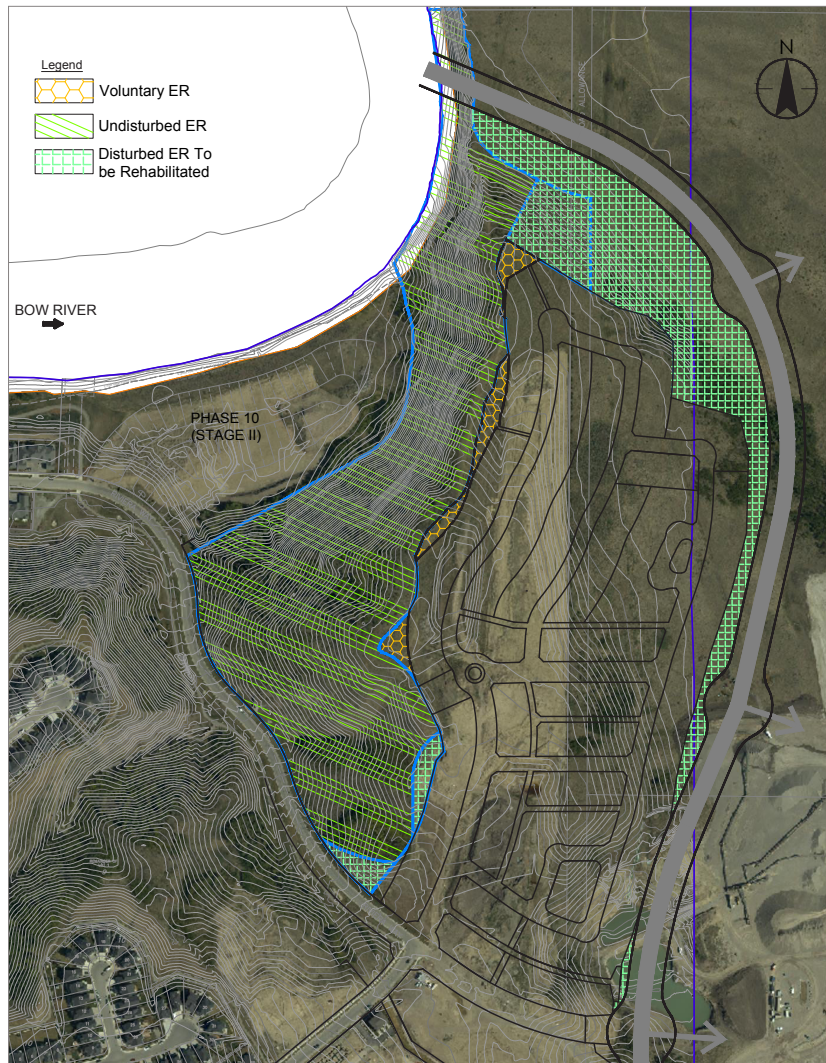
### 1.7 Preliminary Grading & ER Disturbance

The development within Precedence recognizes the significant natural amenity provided by the west escarpment, and for this reason proposes development to be set back in accordance with Town policies.

***The north and east portion of Precedence between the future James Walker Trail and the residential area, will be disturbed due to the construction of JWT. This area will be rehabilitated to become part of the Environmental Reserve.***

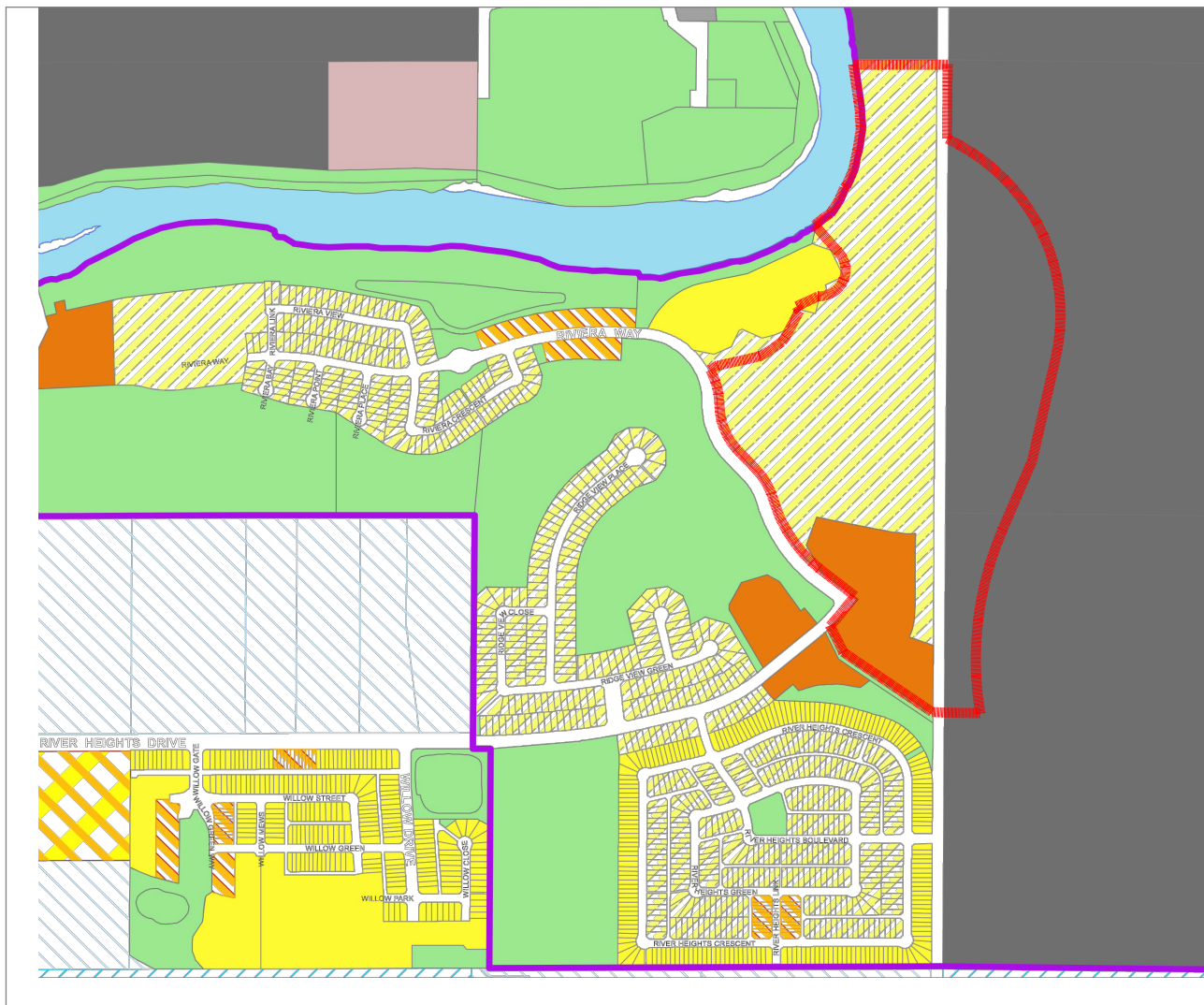
Figure 6 identifies the areas that will require ER rehabilitation area. A portion of lands identified for the JWT bridge construction may be used for Riversong fill, however will also be rehabilitated to form part of the ER.













**Figure 6:** Preliminary Grading and ER Disturbance Boundaries





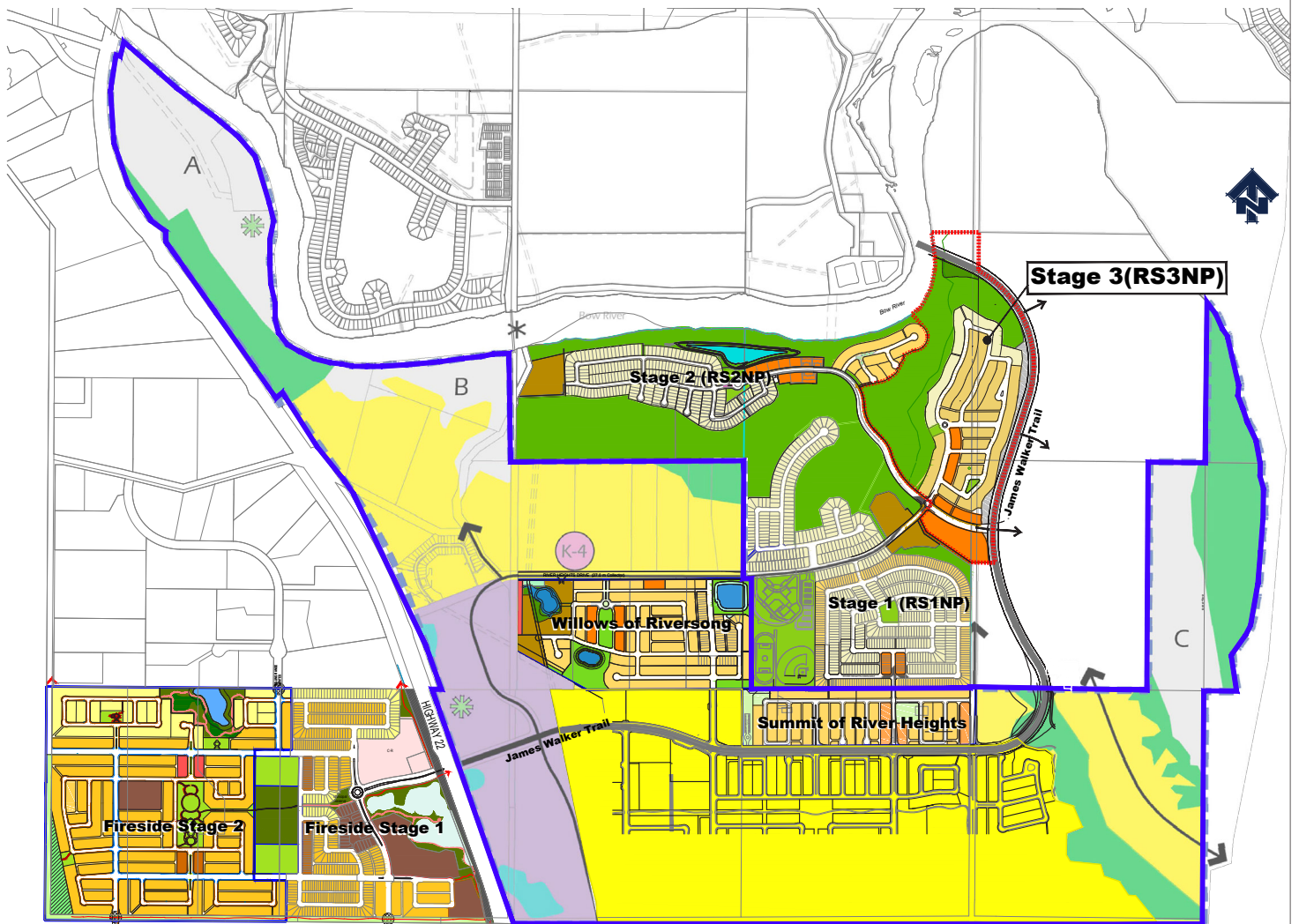
### Figure 7: Approved Land Use Bylaw



- |  |  |  |
|--|--|--|
|  M-1 - General Industrial       |  R-2X - Medium Density Multi-Unit Dwellings |  Neighborhood         |
|  M-BP - Business Park           |  R-3 - Multi-Unit Dwellings                 |  Town Boundary        |
|  PS - Public Service            |  R-M - High Density Multi-Unit Dwellings    |  Railway Line         |
|  R-1 - Single Detached Dwelling |  UR - Urban Reserve                         |  Special Parking Zone |
|  R-2 - Single and Two-Dwelling  |  UR-R - Residential-Urban Reserve           |  |

■■■■■■■■■■ Riversong Stage 3 Boundary

**Figure 8:** Context Plan



## 2.0 PRECEDENCE NEIGHBOURHOOD PLAN



The Riversong Stage 3 Neighbourhood Plan (Precedence) is the third stage of Riversong and includes 40.44 hectares (99.93 acres) of land in the northeast portion of the community. The plan aligns with the approved South Ridge Area Structure Plan and Riversong Design Brief. The additional lands included east of the Town's un-opened road allowance (Robinson) also conform with the vision and intent of the Riversong Design Brief.

The Riversong Stage 2 lands are located to the west and the Riversong Stage 1 lands are to the southwest of Precedence. The Bow River lies to the northwest of the Plan area, and the future James Walker Trail arterial road and bridge will be located to the north and east. To the east of Precedence is an existing gravel extraction operation.

Figure 9 illustrates the Neighbourhood Plan, including the proposed sites and land uses.

All of the lands in Precedence have existing land use. The Tamani portion of Precedence has residential land use, and the Robinson portion has gravel extraction land use. Therefore, upon adoption of the Riversong Stage 3 Neighbourhood Plan (Precedence) all of the lands within Precedence will have designated land use, granted through either previous or proposed land use re-designations. A land use amendment proposed under this Plan is discussed further in Section 4.0.

### 2.1 *Neighbourhood Vision*

Precedence is envisioned as a distinct neighbourhood in Cochrane offering a unique sense of place through its housing options, amenities and natural setting. Precedence capitalizes on the natural topography and views offered by its location, while respecting the environment, and promoting active living through an integrated park and pathway system.

The neighbourhood of Precedence will offer a unique theme through the provision of a mix of housing types and styles placed within a striking natural setting. The housing composition is conceptually illustrated in Figure 10 and in the neighbourhood renderings on page 16.

Precedence will continue the high standard of architectural details found in the community of Riversong, which provide a sense of place and distinguishes itself from other communities in Cochrane. Riversong Stage 3 will include architectural design elements that offer a distinct sense of place. These architectural styles are described in more detail in Section 2.2



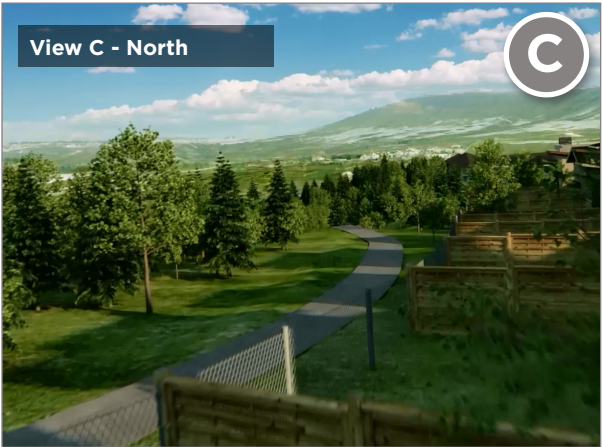
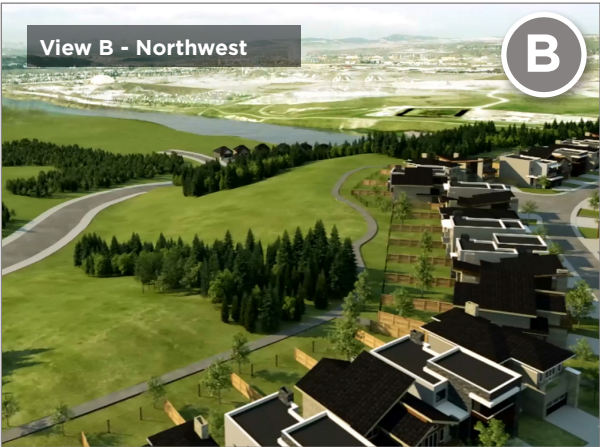
### Figure 9: Neighbourhood Plan



**Figure 10: Conceptual Plan**









## 2.2 Precedence Architecture

Precedence is envisioned to contain a healthy, varied mix of housing styles enhanced through three distinct architectural styles. These architectural styles are integral to creating the vibrant, attractive and unique community that is envisioned in Precedence. The architectural styles include West Coast, Prairie and Urban. Each style is detailed in the following pages.



Conceptual Single Family Unit Architecture



Conceptual Townhouse Architecture



Conceptual Semi-Detached Unit Architecture

West Coast

The main characteristics include:

- Exposed and expressed timber structure, post and beam
- Extensive glazed elements, revealing the importance of the inside and outside
- Low sloped roofs, composed of shed roofs, large supported and expressed overhangs
- Clustered building forms
- Sculptured into the landscape and natural topography
- Public and private spaces are organized as an entry sequence
- Cedar is predominately used
- Rock is used for exposed chimneys, partial walls, and base walls as well as outdoor spaces
- Exposed metal cladding is used as flashings, partial wall coverings, exposed brackets etc. typically zinc
- The inside and outside are in a perfect harmony and foster on a visual relationship between the setting and the resident

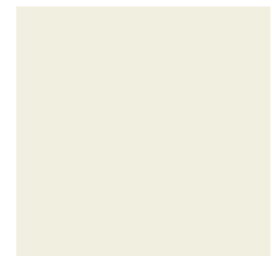
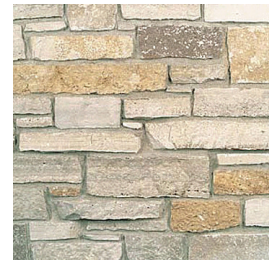




## ***Prairie***

The main characteristics include:

- Ornamental expression, expressed in harmony with the structure
- Strong expression horizontal lines
- Prairie double hung windows, the window or window row with ornaments
- Low pitched hipped roofs, wide overhanging eaves
- Organized “organic” building forms
- Placed on to the landscaped, horizontally, reaching out
- Public and private spaces are organized as an entry sequence
- Massive square porches and porch columns
- Brick, Rock is used for large exposed chimneys, partial walls, and base walls as well as outdoor spaces, we also find stucco elements
- Masonry elements, ornaments complimenting nature elements
- The inside and outside are organized organically, not as a secluded system of rooms but more as a floating system of rooms, open spaces in all directions that will all have a destination

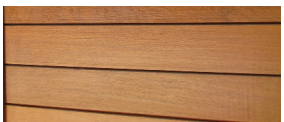
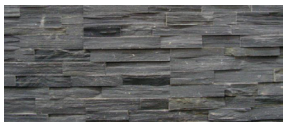
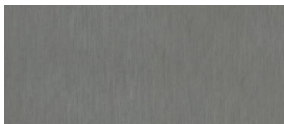
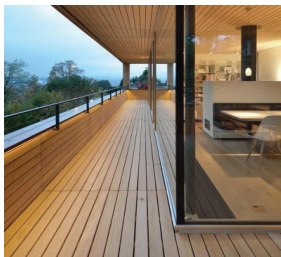
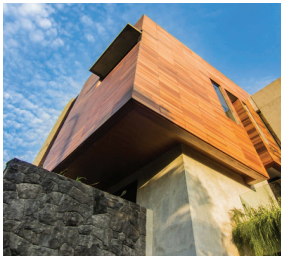




Urban

The main characteristics include:

- Simplicity and clarity of forms and elimination of “unnecessary detail”
- Large windows, no dividers
- Flat roofs, masses exposed in different heights and at 90 degree to each other
- Overhanging horizontal elements, reaching out
- Public and private spaces are organized as an entry sequence
- Mostly EIFS system mix with metal clad, cementitious board, wood applications
- Bold clean colours used to express and focus on specific architectural elements
- Feature walls, a visual emphasis on horizontal and vertical lines



## 2.3 Neighbourhood Design Elements

The Community of Riversong contains view corridors, varied topography and significant natural amenities due to the unique 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 these natural features are accessible to all the residents of Riversong and Cochrane. This also ensures that Precedence meets several key elements of the Context Sensitivity criteria of the Town's Integrated Neighbourhood Design Guidelines (INDG).

Figure 10 illustrates the Concept Plan and the key design elements of Precedence.

### 2.3.1 Pedestrian Connectivity

Upon completion of Precedence, Riversong will provide approximately 4 km of pathways. The Precedence pathway and sidewalk network is designed to facilitate the safe enjoyment of the community and connect residents to community amenities, including the Bow River Pathway, the Riverside Way Regional Pathway, the River Avenue pedestrian bridge, open spaces, environmental reserve, and the balance of the Riversong community (see Figure 11). This network will increase value to the community by creating a walkable, diverse, and vibrant neighbourhood, in accordance with the goals of the INDG.

***Pedestrian circulation in Precedence seeks to minimize impact on the natural environment while providing opportunity for all residents to enjoy the unique natural setting of the community.***

Two pedestrian access points were identified in the Riversong Design Brief to connect Precedence with the greater Riversong community: one in the north part of Precedence connecting west to the Bow River Pathway, and one in the south portion of the Plan area connecting to the separate sidewalk along Riverside Way. While both of these connections have been pursued, the northern connection has been deemed too impactful on the environmental reserve. Therefore the connection from Precedence to the Bow River Pathway will be via the sidewalk or 2.5m regional pathway along Riviera Way. Low impact trails are proposed to connect to James Walker Trail where feasible connecting to the future James Walker Trail bridge across the Bow River.

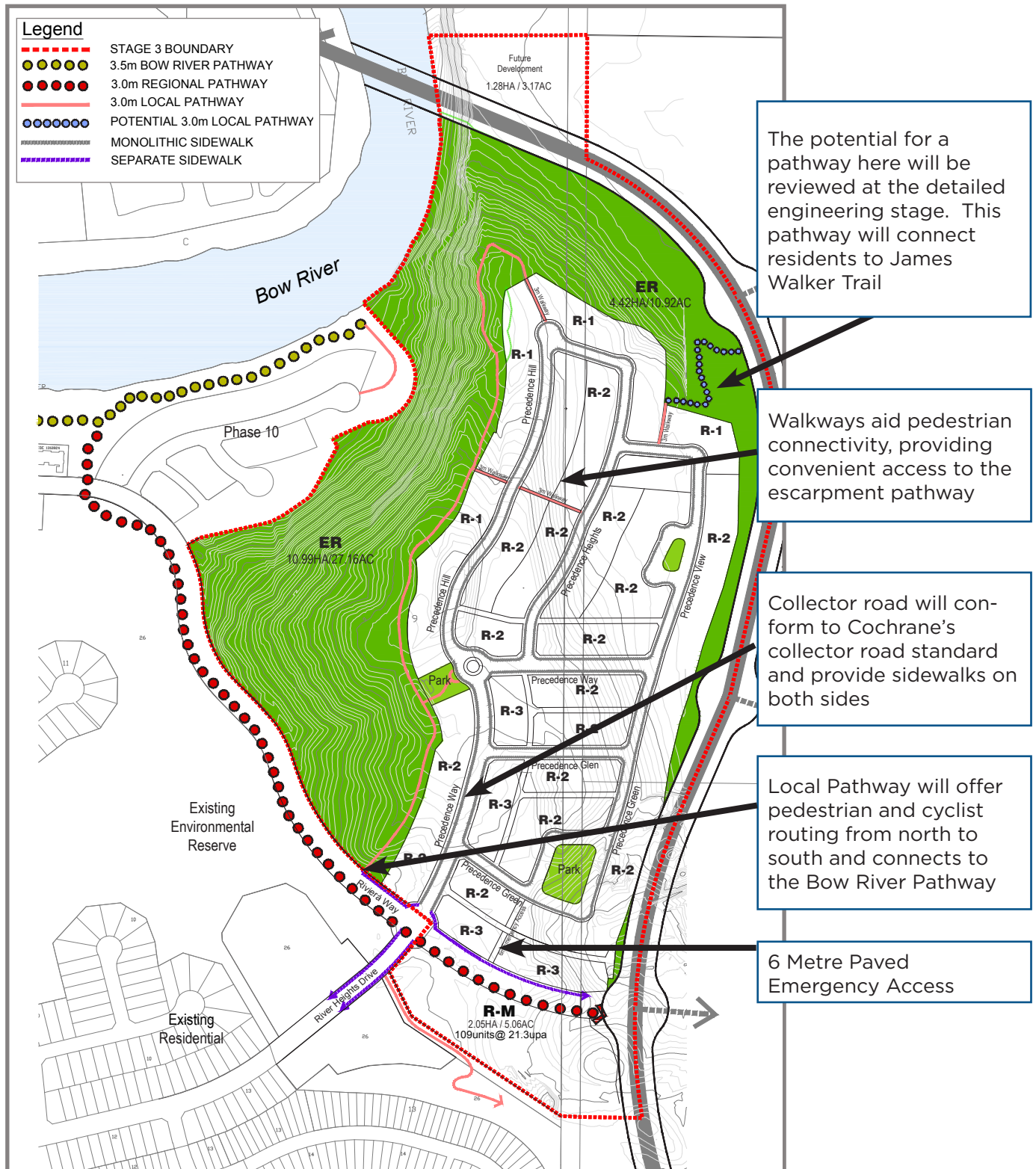
Whether a resident wants to play at one of the local parks, walk the pathways along the natural escarpment, or enjoy other areas of Riversong and Cochrane, the linkages will be in place to ensure there is a sidewalk, walkway, or pathway to implement this connectivity.

### 2.3.2 Housing Choice

A variety of housing forms, sizes, and price ranges will be available in Precedence. The range of housing styles offered in Precedence supports the Cochrane Sustainability Plan's 9th Pathway to the Future, which states "Everyone has a roof over their head".



**Figure 11: Pedestrian Connectivity Plan**





Taking advantage of the unique views offered in Precedence, larger single family homes will be provided along the majority of the west and north escarpments, overlooking the environmental reserve and the Bow River.

Inside the plan area, and along the east boundary, a mix of single detached and semi-detached housing will be provided.

Where feasible due to significant grade within the plan area, street oriented townhomes will offer another housing option. A comprehensively planned and developed townhome site will be constructed south of Riviera Way.

### 2.3.3 Neighbourhood Parks

Two neighbourhood parks will be included in Precedence. Tamani has previously satisfied the required 10% MR for all of Riversong through the park spaces in Stages 1 and 2 and the provision of the Bow Valley High School. However in an effort to create more liveable neighbourhoods within the community, Tamani has provided neighbourhood parks in each Stage. Riversong Stage 3 will also include a small neighbourhood park offering play structures for active play.

Additionally a neighbourhood park will be provided on the Robinson lands and will be included towards the 10% reserve required. A deferral of additional required reserve is requested to provide meaningful municipal reserve with the future re-development of the gravel extraction lands. Section 4.0 provides further details.

***A deferred reserves caveat will be applied to the Robinson lands east of James Walker Trail, which will require the provision of land for municipal reserves in the amount owed to make up 10% of the Robinson portion of Precedence.***

### 2.3.4 Gravel Extraction Interface

The gravel extraction operation to the east of James Walker Trail is anticipated to be in operation for a minimum of 15 years. Ultimately these lands are to be redeveloped for residential uses. James Walker Trail will provide a buffer between Precedence and the gravel operation until the future redevelopment occurs.

**Figure 12: Neighbourhood Park Concepts**



## 2.4 Pedestrian Oriented Development

Precedence recognizes that the escarpment and the Bow River are significant natural amenities in Riversong which provide opportunities for residents to enjoy their outdoor environment. Therefore, to facilitate residents' safe enjoyment of the community, Precedence offers several strategically located pathways and walkways that provide connectivity throughout the community (Figure 11). This system will provide easy access to the Bow River and Riviera Way Pathways and Riversong's amenities, as well as regional connectivity to other services and amenities within the Town of Cochrane. This also helps Precedence meet key elements of the Street Design criteria (Section 4.1) of the INDG.

In the western portion of Precedence, a north-south local pathway will be provided along the top of the escarpment, behind the residential lots. Two connection points will be provided to this pathway: as shown in Figure 11.

In the south portion of Precedence, the 3.0m Regional Pathway will connect to the existing regional pathway along Riviera Way, constructed as part of Riversong Stage 2. This regional path provides the connection to the Bow River Pathway and James Walker Trail.

The developer of the Robinson lands will endeavor to provide a 3.0m local pathway connection from northeast Precedence to James Walker Trail. However the feasibility will be reviewed at the detailed engineering stage, and once the James Walker Trail design is complete to ensure the pathway can be constructed to Town of Cochrane standards.

Precedence residents will have multiple route options for walking and cycling in their neighbourhood. Residents will be able to walk along the roads with sidewalks on both sides of the street throughout the entirety of the neighbourhood connecting to the aforementioned pathways. These options will be safe, convenient, and comfortable.



## **2.5 Crime Prevention through Environmental Design**

Precedence recognizes the importance of Crime Prevention through Environmental Design (CPTED). CPTED 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, and the INDG requires the implementation of CPTED principles by ensuring open spaces, amenity areas, and parks are accessible and safe. The criteria and how Precedence addresses CPTED 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”.

- Precedence is relatively long and linear due to the escarpment on the west and James Walker Trail on the east. This provides unobstructed sightlines along straight roads as well as intersections that provide good visibility in all directions.

- Portions of Precedence 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 within the Precedence area to ensure they are visible from roadways, open spaces, and/or residential areas.

### **FINDING HELP**

- Residents of a close-knit community are more likely to report a crime or intervene to help. The physical separation of the Precedence area from the rest of Riversong will create a sense of a small, close-knit neighbourhood. The open spaces and extensive pathway system in the area will help foster the social development of the community as a whole, in turn facilitating the sense of safety in the community as residents get to know their neighbours and develop a sense of ownership toward their community.





### 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.

### LIGHTING

- Attention will be made to provide street lighting at key locations and near walkways to allow continued visibility at night.
- To increase safety in some walkway locations, lighting options will be investigated at the Subdivision stage of development.
- Lighting within Precedence will be Dark Sky sensitive by not causing glare for drivers or light trespass to neighbours.
- no up-lighting will be permitted

### PREDICTABLE ROUTES

- The combination of sidewalks, pathways, and walkways in Precedence 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.

### 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.”

- The design of Precedence does not provide small areas that are shielded on three sides, resulting in potential entrapment situations.
- Numerous access points are provided to each open space and pathway.
- Attention will be given to future landscaping plans and the growth patterns of plantings to ensure future entrapment spots do not occur.

### 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.
- Highly visible pathways, parks, streets, 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.



## 3.0 TRANSPORTATION NETWORK



### 3.1 External Road Network

#### 3.1.1 Access

Riversong is situated immediately south of the Bow River, and approximately one kilometre east of Highway 22. The existing permanent access into Riversong is from Highway 22 via the built portion of James Walker Trail, then north and east along River Heights Drive.

The built portion of James Walker Trail and the north-south portion of River Heights Drive are four lane divided collector roadways that were completed in 2011, with traffic light signalization of the James Walker and Highway 22 intersection completed in 2013, see Section 3.1.3. Between the north-south portion of River Heights Drive and Riversong's west boundary, River Heights Drive was upgraded by the developer of Riversong to a four lane divided 27.5 metre wide collector roadway to the western boundary of Riversong.

River Heights Drive currently terminates at Riviera Way, which has been constructed to access the developing Riversong Stage 2 area (Riviera). With the development of Precedence, River Heights Drive will continue past Riviera Way, turning into Precedence Drive at a 4-way intersection. Riviera Way will extend to connect to James Walker Trail.

#### 3.1.2 External Network Improvements

The Highway 22 and James Walker Trail intersection was completed in 2013. James Walker Trail connects to River Heights Drive, which continues into Riversong.

In January 2015 the Highway 22 / James Walker Trail Intersection Review was prepared by1 WSP

Group to provide a design life assessment of an interim upgrade to the intersection to provide additional operating capacity.

This interim upgrade to the Highway 22/ James Walker Trail intersection would include additional left turn lanes in all directions except turning into Fireside, raised medians on Highway 22, and separate right turn bays.

This report assessed traffic demand profiles for the surrounding communities for the purpose of capacity assessment, and takes into account the anticipated 2018 Bow River bridge crossing provided by the Town of Cochrane. It concludes that the proposed intersection upgrade can provide capacity for projected traffic volumes up to 2024 (approximately 6 years after the completion of the Bow River bridge by the Town).





### 3.1.3 Emergency Access (External) via River Avenue Bridge

Secondary emergency-only access is currently provided to the community of Riversong via the River Avenue Bridge located just northwest of Riversong Stage 2. See Figure 15.

River Avenue Bridge has the capacity to carry up to 40 tonnes, as verified by Alberta Transportation to the Town of Cochrane Engineering Department, which will accommodate all Town of Cochrane emergency response vehicles except the aerial apparatus. Therefore, River Avenue Bridge will be utilized as an emergency access while remaining closed to public vehicular traffic.

This bridge is under the control and management of the Town of Cochrane. A letter from Alberta Transportation stating this agreement has been provided to the Town.

### 3.1.4 James Walker Trail & Bridge

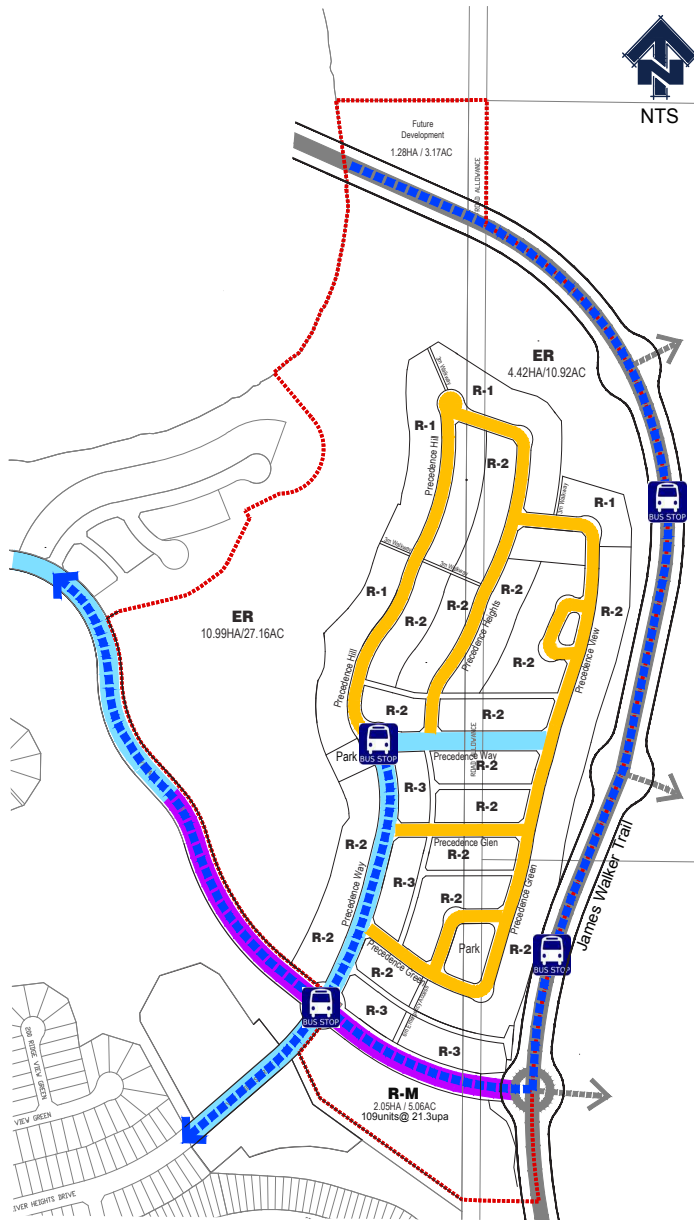
The James Walker Trail south alignment has been finalized, and Precedence includes lands required for the Stage 1 construction of James Walker Trail. Stage 1 is considered to be the portion of James Walker Trail from the new bridge to Riviera Way, which will connect via River Heights Drive to Highway 22.

Stage 1 of the James Walker Trail south alignment includes a second, permanent bridge crossing of the Bow River. The approximate location of this new bridge has been identified in the James Walker Trail Functional Analysis to be within lands owned by Tamani, north of Precedence. The lands in question have R-1 residential land use on them, and are considered as developable lands within the boundary of Precedence. However a detailed review of bridge crossing locations by the Town's consultant, Urban Systems, has concluded that the Tamani lands are the best location for the future bridge. The acquisition of these lands will be part of the greater land acquisition strategy between the Town, Tamani and John Robinson. The details of these land acquisitions will be determined prior to Third Reading of the Land Use Amendment Bylaw, and ownership transfer will occur through the subdivision process. The bridge is expected to be completed and operational by 2020.





**Figure 13: Road Network**



**Legend**

- - - - - STAGE 3 BOUNDARY
- 27m COLLECTOR STREET
- 21m COLLECTOR STREET
- 15.5m RESIDENTIAL STREET
- - - - - POTENTIAL FUTURE BUS STOPS/ROUTE

### 3.2 Internal Road Network for Riversong Stage 3

The internal road network of Precedence respects the natural topography of the land by minimizing impacts to it. Although the topography creates challenges to providing a grid street design, a modified version of this type of road network is provided where feasible. In accordance with Section 4.1 of the INDG, relating to Street Design, the mobility network considers all modes of transportation with sidewalks on both sides of the public streets and pathways for both pedestrians and cyclists.

To best respect the physical constraints of the land, the majority of Precedence's road network strives to maintain north/south alignments. This allows grade through the site to be absorbed within residential lots. Some east/west connections are required to provide connectivity and routing options.

Precedence Way, which connects to Riviera Way via a roundabout, will be a collector road standard while all other internal roads will be residential standard.

The neighbourhood is transit accessible via Precedence Way. The roundabout at the intersection of Precedence Way / Precedence Hill provides an easy turnaround opportunity. A potential bus stop location could be located near this roundabout providing a minimum distance of 400m to transit from all residences.

WSP has undertaken a Traffic Impact Assessment (TIA) specific to Precedence. This TIA noted additional required external network improvements:

*James Walker Trail/River Heights Drive intersection (west of plan area):*

- Pre Development: This new intersection will require signalization with auxiliary turning lanes on each approach;
- Post Development: No further improvements.

*James Walker Trail/Riviera Way intersection:*

- Pre Development: It is understood that the new intersection will be constructed as a dual circulating lane round about;
- Post Development: Amendment to the lane assignments on the western approach (via pavement marking and signage)

*River Heights Drive/Ridge Gate intersection:*

- Pre and Post Development: No improvements required. The intersection is expected to operate well within acceptable limits even with the addition of development related trips over the design horizon.

*River Heights Drive/River Heights Blvd intersection*

- Pre Development: No improvements required;



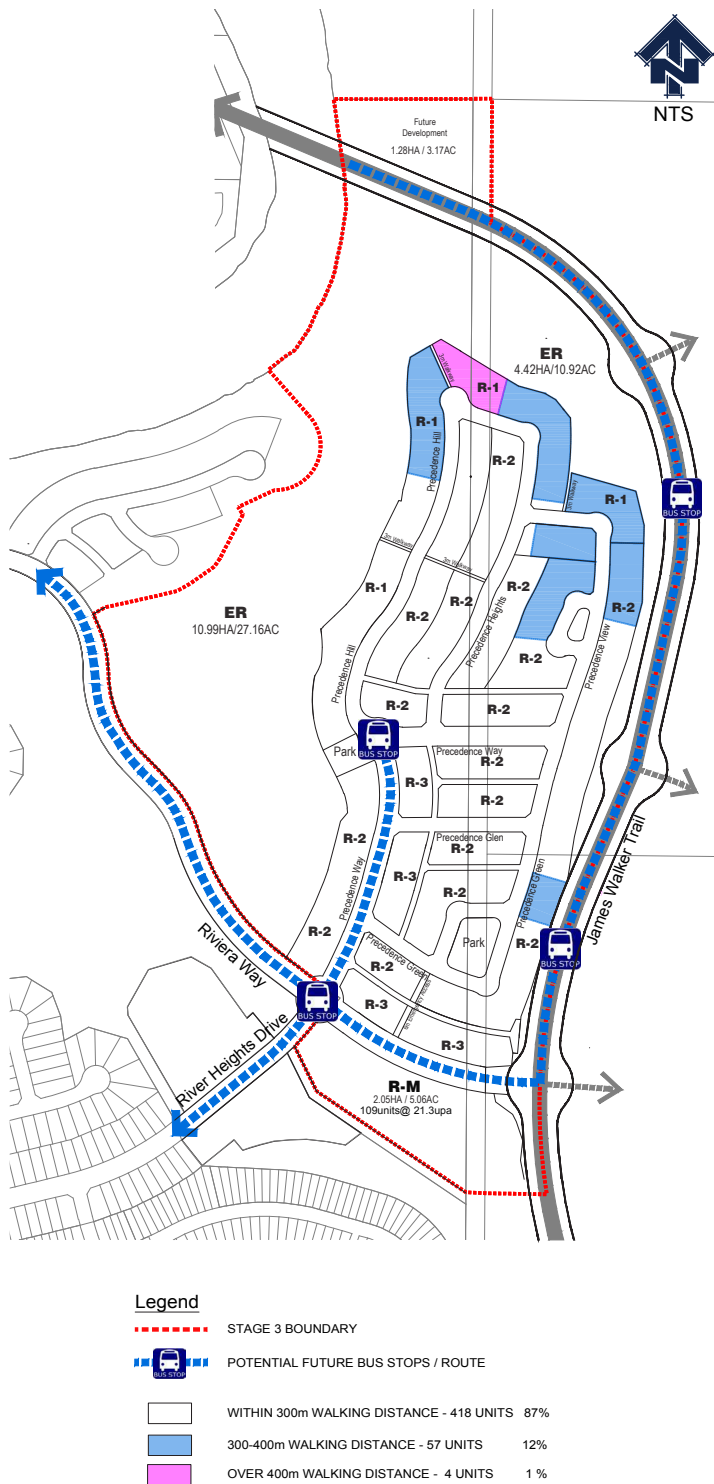
- Post Development: The addition of development trips triggers the need to incorporate a short 20 m auxiliary right turn lane on the River Heights Drive (western approach) at the development opening year. This can be achieved in the existing pavement width using pavement marking.

*Riviera Way/River Heights Drive intersection:*

- Pre Development: By 2034, the intersection will require upgrading to roundabout control due to increases in background traffic volumes; and
- Post Development: No further improvements



**Figure 14: Transit Coverage**



### 3.2.1 Transit Coverage

Future transit services, should it become available, will be accommodated through a collector road standard along Precedence Way to a roundabout at Precedence Way and Precedence Hill where the bus can turn around. This results in 99% of units in Precedence being within the City of Calgary standard of 400m walking distance to transit, which is higher than the required 95%.

### 3.2.2 Emergency Access (Internal)

Due to the significant elevation difference between Precedence and James Walker Trail to the east (future), direct road access is not feasible. Therefore, an secondary emergency access into Precedence will be provided.

Emergency access to Precedence will be provided via a 6m paved lane located in the southwest portion of the plan, accessed off Riviera Way. All internal emergency accesses shall be constructed as paved 6m wide, all-weather surfaces, capable of accommodating all emergency vehicles and maintained to provide year-round access.

### 3.3 Ten Minute Response Time

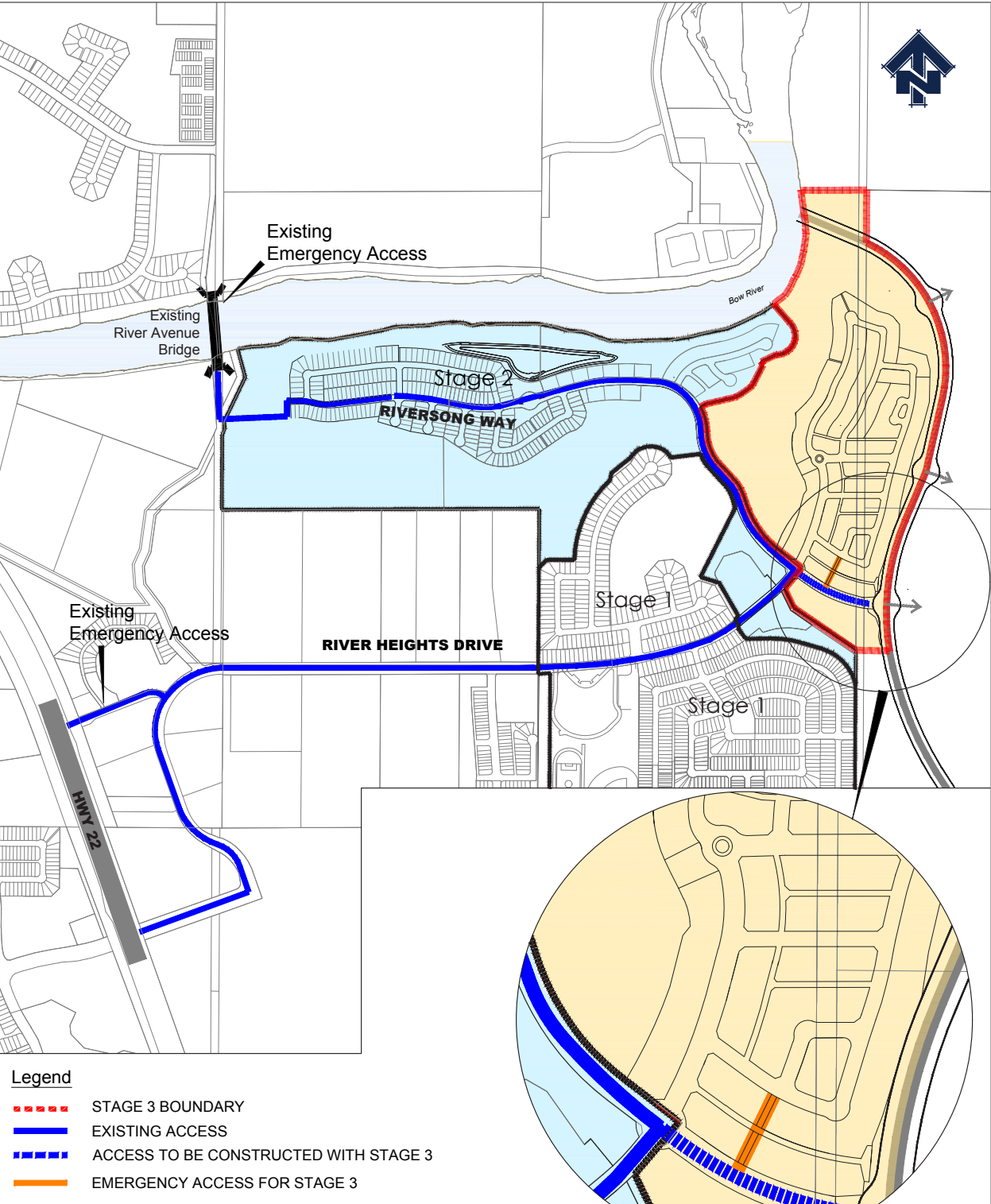
**Anticipated transportation improvements south of the Bow River, including James Walker Trail and the new bridge, will soon provide improved access to the neighbourhood, and reduce emergency response time.**

While portions of Precedence currently fall outside of the ten minute response time from the Town of Cochrane's permanent fire station, The Alberta Building Code provides options for decreasing the rapid fire spread amongst residential buildings outside of a ten minute response time. The future Residential development within Precedence that falls outside of this response time will adhere to the Alberta Building Code.

The community of South Bow Landing outlines the accommodation of a future fire station that will assist in the servicing of Precedence emergency response services.



Figure 15: Emergency Access Routes



## 4.0 LAND USE



Figure 7 shows the existing land uses for the plan area. A land use amendment is proposed to re-designate the necessary portions of Precedence to R-1, R-2, R-3, and RM in order to accommodate the residential land uses proposed, as well as PS to accommodate Environmental and Municipal Reserve areas, and TUC to accommodate the future James Walker Trail alignment and bridge. See Figure 16 for the proposed land use amendments.

In accordance with the SR-ASP and the Riversong Design Brief, land use within Riversong will be primarily residential. The proposed built form will include single family housing, semi-detached housing, and townhouse development.

Precedence is envisioned to feel unique through architecture, and will be developed as an upper-scale neighbourhood in Cochrane.

The proposed land use amendment supports Section 8.4.3(a) of the 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. Mixed blocks of housing will be pursued in accordance with Section 3.4 of the Integrated Neighbourhood Design Guidelines (INDG).

The land use designations provided in Precedence are discussed in greater detail below.

### **4.1 Residential**

Precedence provides for 15.21 hectares (37.58 acres) of residential land use, which is approximately 37% of the total Precedence area. A variety of residential dwelling units will be available within Precedence, including single detached, semi-detached, and townhouse units.

While the R-1 district will provide only single-detached, and the R-3 and R-M district only townhouse, the R-2 district permits single detached, semi-detached and street-oriented townhouses. Precedence envisions a mix of these uses within the R-2 district. Several lots will be developed for larger estate homes.

The overall housing vision in Precedence is to provide integration of built form through mixed blocks, in accordance with the INDG. Utilizing the R-2 and dispersed R-1, R-3, and R-M land uses will provide the opportunity for a variety of housing options and diversity in built form.

### **4.2 Public Service**

The Public Service land within Precedence includes Environmental and Municipal Reserve. The entire 10% of Municipal Reserve owing for the community of Riversong was dedicated with Riversong Stage 1. The Bow Valley High School site and Stage 1 park together over fulfill the MR dedication requirement by 0.30 ha (0.75 ac). Riversong Stage 2 voluntarily added a further 0.52 ha (1.28 ac) of MR to provide a local playground. In addition, Precedence (Stage 3) will provide another 0.38ha (0.94ac) of MR of over-dedicated open space for local playgrounds.



Public Service lands in the form of Environmental Reserve (ER) accounts for 15.41 ha (38.08 ac), 38% of the total Precedence area. The design of Precedence respects the significant natural features of the topography and protects them as amenities in accordance with the Context Sensitivity requirements of the INDG. The natural escarpment will be protected as ER. Additionally, areas of steep, undevelopable slopes will be retained as ER.

The open space system will be linked together through a pathway network that provides connectivity while minimizing the impact on the ER. The pathway within the ER lands will avoid significant slopes and vegetation where feasible and remediation and replanting will be undertaken where necessary.

### **4.3 Commercial**

The feasibility of a local commercial site was reviewed during the preparation of the Riversong Design Brief. The result of this review supported 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:

- The proximity to the future James Walker Trail, an arterial road that will be constructed along Precedence'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. Commercial development is more appropriately located adjacent to this arterial road, while still within walking distance to much of Riversong.
- Commercial needs of Riversong residents may be further met through lands proposed for development for highway commercial along Highway 22 and south of River Heights Drive, and just across the Bow River towards downtown Cochrane. Both of these future commercial sites are located less than 1 kilometre from Riversong. Residents will pass these area as they enter and exit Riversong, making them convenient commercial locations.

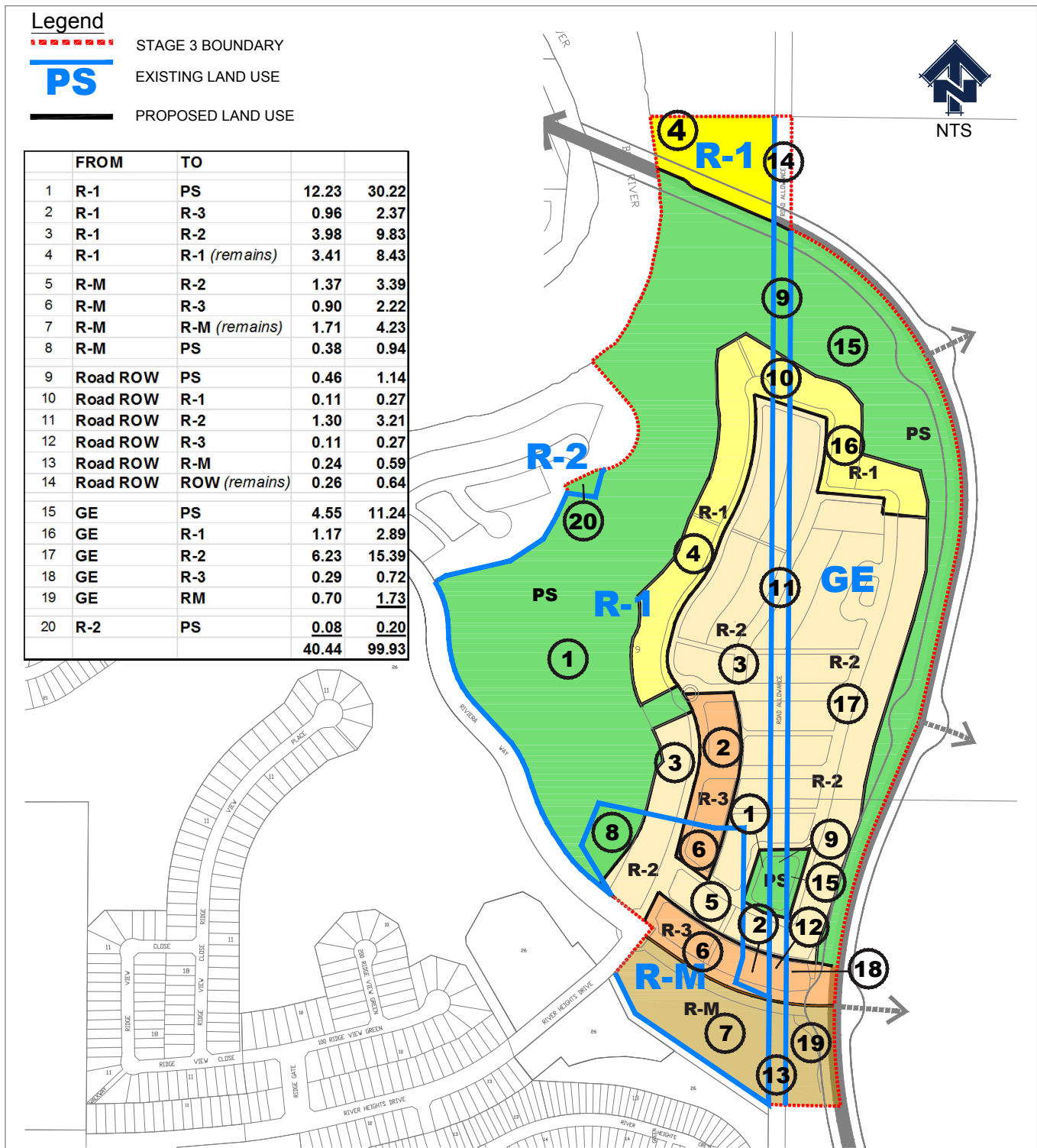
Home-based businesses are encouraged throughout the single family residential areas within the Plan area. Home-based business is not discouraged within other residential land uses areas, but particular attention must be given to ensure the parking requirements of the Cochrane Land Use Bylaw 01/2004, or current, are met.

### **4.4 Transportation Utility Corridor (TUC)**

The Town of Cochrane has identified an alignment and bridge location for James Walker Trail. Land negotiations between the Town of Cochrane and the Precedence landowners are required prior to subdivision. Refer to Section 1.3 for further details.



**Figure 16: Proposed Land Use Districts**



## 5.0 STATISTICS AND MUNICIPAL RESERVE



5.0

The Neighbourhood Plan statistics (Table 2) provide the areas and projected number of units for each land use category. Neighbourhood Plan statistics are typically general in their category description, but in this case actual land use districts are identified. It is important to note that Riversong's entire Municipal Reserve (MR) dedication was provided with Riversong Stage 1 which provided 9.38 ha (23.18 ac) of MR for the Bow Valley High School, resulting in a Stage 1 dedication of 20.0%. Riversong Stage 2 then dedicated an additional 0.52ha (1.28 ac) to allow for a neighbourhood playground and park within the lower bench lands. To date, Riversong has over 13.4% MR dedication. With the inclusion of the Stage 3 land, Riversong was still over-dedicated by 0.49 ha (1.2ac), however Precedence will provide yet another 0.38 ha (0.94 ac) of municipal reserve to ensure that park/playground amenities will be close and accessible to the residents of Precedence. This dedication will put the overall Riversong MR dedication to 11.2%

## 6.0 DENSITY AND POPULATION



6.0

Approximately 479 units are anticipated in Precedence. The anticipated density for Precedence is therefore 22.95 units per hectare (uph) (9.29 units per acre (upa)), as noted in Table 2. This density exceeds the Town's MDP density target of 19.8 units per gross developable hectare. This higher density is required for Stage 3, under the policies of the Riversong Design Brief to help the entire Riversong community reach an overall density of 8.0 upa.

The population prediction for Precedence, based on Calgary's MDP occupancy rates for developing areas, assumes the following:

Single / Semi detached	3.3 people/household x 318 anticipated units = 1049 people
Townhouses / Apartments	2.2 people/household x 161 anticipated units = 354 people

The above assumptions, calculated with the anticipated unit counts for each land use category, result in a population prediction of 1,403 people.

As noted above, the Riversong Design Brief identified a target of 8.0upa for all of Riversong. The Design Brief recognized that Riversong Stage 1 was approved prior to the 2008 MDP target density of 8.0upa, however to align Riversong with the 2008 policy Stage 2 and Stage 3 were to have higher density to bring the community to an overall 8.0upa. At the time of the Design Brief, details of the James Walker Trail alignment were unknown, and it was anticipated that a connection to James Walker Trail, through Stage 3 would be provided. Detailed review of the James Walker Trail alignment has now been undertaken, and it is understood that due to significant grade change, a connection through Stage 3 is not achievable. For this reason, it is felt that a density higher than the provided 9.3upa is undesirable for the plan area. Additionally, overtime it can be reasonably estimated that the unit count within Riversong could increase by approximately 10% due to future secondary suites, therefore over time Riversong will meet and exceed 8.0upa.

**Table 2:** Neighbourhood Plan Statistics

<b>Stage 3</b>	<b>upa</b>	<b>Hectares (+/-)</b>	<b>Acres (+/-)</b>	<b>Number of units</b>	<b>% of GDA</b>
<b>TOTAL LAND AREA</b>		<b>40.44</b>	<b>99.93</b>		
Environmental Reserve		15.41	38.08		
Future Development		1.28	3.16		
James Walker Trail - Acquisition Area		2.88	7.12		
<b>GROSS DEVELOPABLE AREA (GDA)</b>		<b>20.9</b>	<b>51.57</b>		<b>100%</b>
<b>General Land Uses</b>					
<b>RESIDENTIAL</b>		<b>15.21</b>	<b>37.58</b>		<b>72.9%</b>
R-1, RESIDENTIAL SINGLE FAMILY		2.75	6.80	55	13.2%
R-2, RESIDENTIAL SINGLE AND TWO DWELLING		9.13	22.56	263	43.7%
<i>Anticipated Single Family Units</i>				187	
<i>Anticipated Semi-Detached Units</i>				76	
R-3, TOWNHOUSE		1.28	3.16	53	6.1%
R-M, TOWNHOUSE (SOUTH OF RIVIERA WAY)		2.05	5.07	108	9.8%
<b>PUBLIC ROADWAYS</b>		<b>5.28</b>	<b>13.05</b>		<b>25.3%</b>
<b>TOTAL ANTICIPATED NUMBER OF UNITS</b>				<b>479</b>	
<b>Anticipated Density</b>				<b>22.92uph (9.29 upa)</b>	

**Table 3:** Overall Riversong Density Statistics

	<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Total</b>
<i>Gross Developable Area (ac)</i>	115.91	66.89	51.57	234.37
<i>Anticipated Units</i>	751	545	479	1775
<i>Density (upa)</i>	6.5	8.2	9.3	7.6

**Table 4:** Overall Riversong Municipal Reserve Statistics

	<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>	<b>Total</b>
<i>Gross Developable Area (ac)</i>	115.91	66.89	51.57	234.37
<i>Municipal Reserve Owed</i>	11.60	0	0	22.68
<i>Municipal Reserve Provided</i>	23.18	1.28	0.94	25.40
<i>Percentage Provided (%)</i>	20.0%	1.9%	0.9%	11.2%



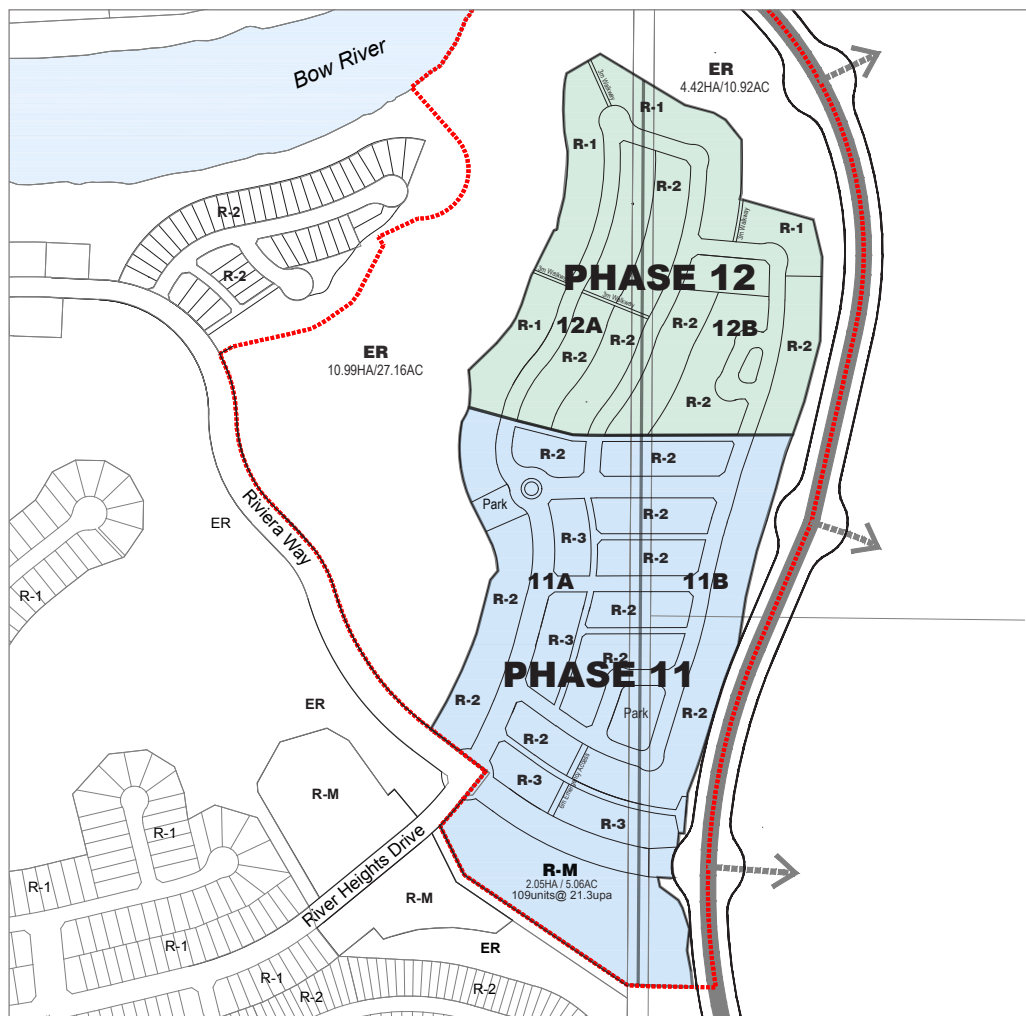


As shown on Figure 17, Precedence is divided into two phases: Phase 11 and Phase 12. In addition, an 11A and 11B, as well as a 12A and 12B are identified. The 'A' and 'B' do not denote sequence, it simply identifies that there are different ownerships and the submission timing may differ. The overall phase numbering continues from the previous phases within Riversong Stages 1 and 2. Development of Phase 11 is anticipated over the next few years, with Phase 12 to follow.

***All proposed subdivision boundaries will ensure logical block configurations and will not orphan small development parcels.***

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

**Figure 17: Phasing Plan**



## 8.0 UTILITY SERVICING



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 sanitary system for all of Precedence will convey sewage via gravity to the existing sanitary lift station in Stage 2, where an existing forcemain will direct the sewage to the existing sanitary sewer siphon system in Riviera Way, continuing under the Bow River. This sanitary truck and siphon system was constructed by Tamani Communities as part of Riversong Phase 1 and Phase 7, and has the capacity to service all of Precedence, including the John Robinson's portion.

Due to the existing grades through Precedence, the sanitary system will convey a portion of the sewage south to the existing mains on Riviera Way. The remaining lands sanitary system will convey sewage to the north end and then will be directed west below the environmental reserve into Riversong Phase 10. The pipes to be installed below the environmental reserve will be installed through directional drilling, or an alternate trenchless technology, eliminating the environmental impact.

### 8.2 Water Main Distribution

The proposed water system distribution concept is an extension of the existing water main distribution network from the Riversong Stages 1 and 2 development areas.

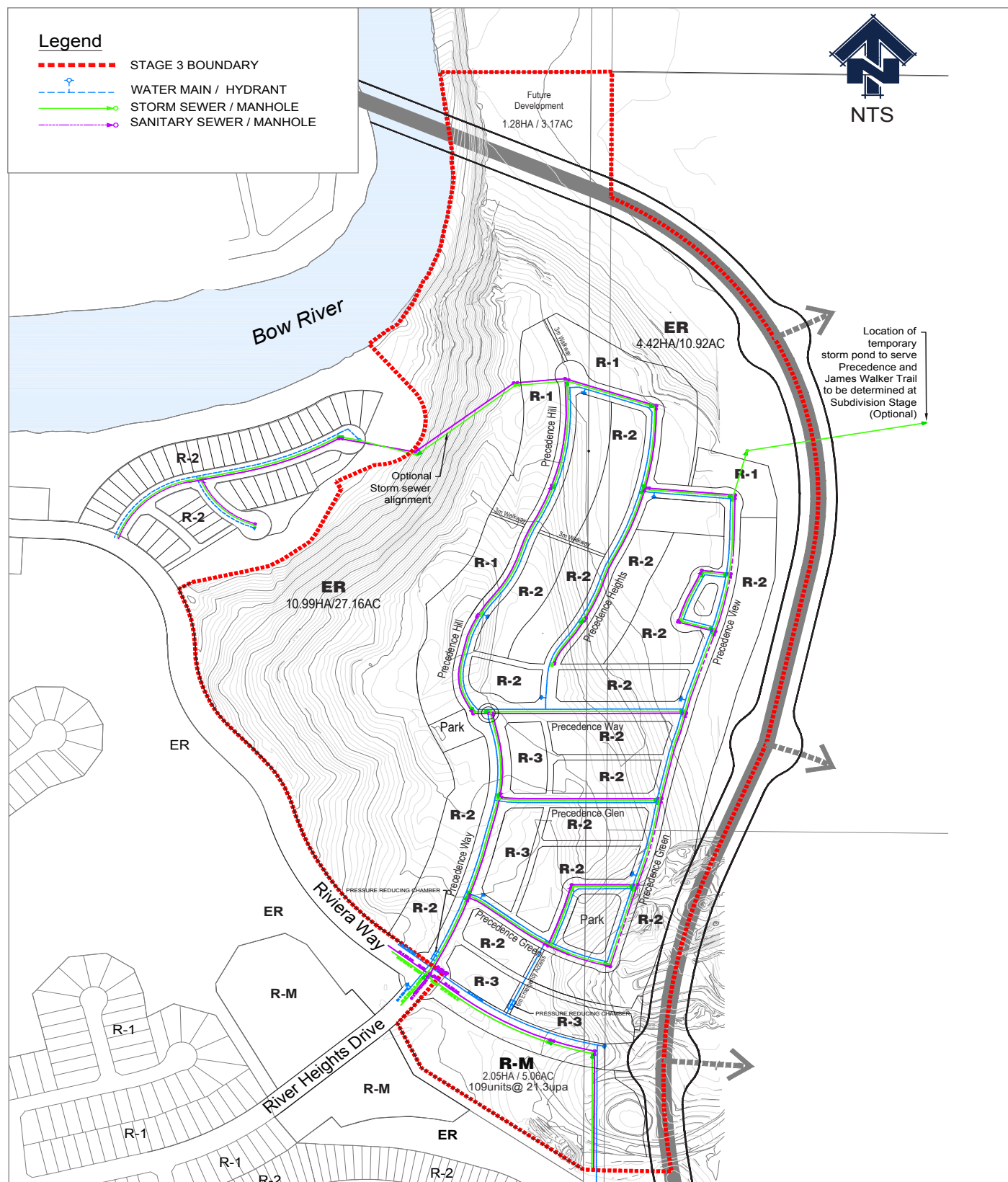
Distribution mains will extend through Precedence on a grid system as shown in Figure 18, and will be in accordance with the Town of Cochrane Water System Master Plan. All internal valve and hydrant coverage will be provided in accordance with Town of Cochrane requirements.

Precedence includes two pressure zones and requires a pressure reducing valve chamber installed to achieve the separate pressure zones. Precedence is serviced by the existing River Heights Water Reservoir and Pump Station and is within the River Heights water pressure zone Elevations 1170 to 1210. The second pressure zone is created by the pressure reducing valve chamber and includes Elevations from 1170m-1130m. Two watermain connections will be utilized from the 1170m - 1130m pressure zone to provide looping.

Ultimately, a watermain will be installed under the Bow River and connect to Precedence as per the town of Cochrane W3 master plan by Urban Systems.



**Figure 18:** Conceptual Utility Alignment





### **8.3 Stormwater Management**

The original stormwater management strategy for Precedence is addressed in the report entitled “Staged Master Drainage Plan for Cochrane Crossing” by Westhoff Engineering Resources, Inc. (November 2005). This report was superseded by “Design Basis Memorandum & As-built information for Riversong Stormwater Storage Facility,” Westhoff Engineering Resources Inc, August 2012, approved by Town administration. The Riversong Stormwater Storage Facility report details that there is capacity included in the existing pond for Precedence.

With the inclusion of the Robinson lands, the intent is to either conform with the existing staged master drainage plan, direct stormwater into a temporary zero discharge facility, or a combination of both strategies.

Should the parameters within the stormwater management strategy still conform with the existing staged master drainage plan (flows, existing pipe capacities, pond capacities, etc.), the intent will be to direct all stormwater from Precedence to the Riversong stormwater management facility. This would require servicing to be installed through the ER from Precedence to Riversong Phase 10. Similarly to the proposed sanitary servicing outlined in section 8.1, directional drilling or an alternate trenchless technology will be used to install piping through the ER.

Alternatively, the stormwater management strategy for the area outside of Precedence east of the future James Walker Trail alignment will eventually require a Staged Master Drainage Plan at the time of its development. With the inclusion the Robinson lands in Precedence, the stormwater management strategy may require stormwater to be directed to a facility considered in that future design due to grade constraints. Should this occur, it is proposed

that the stormwater from Precedence will be directed northeast towards a temporary storm water facility that will be constructed within John Robinson’s lands east of the proposed James Walker Trail. This storm pond is proposed to be a zero discharge facility and the stormwater collected in the pond will be utilized by the Green Drop gravel mining operation in the wash pits. A pond report will be prepared for this interim solution. When the storm water facility for the lands east of James Walker Trail is constructed, the stormwater from Precedence will be re-directed to that facility.

As well, there is also a possibility a combination of both strategies mentioned above will be utilized with the majority of Tamani’s lands draining into the existing facility and the majority of John Robinson’s lands draining into the zero discharge facility.

The stormwater management design will be confirmed during detailed design and engineering, adhering to the above strategies.

### **8.4 Shallow Utilities**

Shallow utility servicing to Precedence will be provided as an extension of the existing facilities from the Riversong Stages 1 and 2 development areas. All power, telephone, natural gas, and cable television distribution systems are proposed to be constructed underground within Precedence, subject to detailed design prior to construction.

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

The residential components of Precedence are well above the Flood Fringe area, meaning there is an insignificant flood potential.

## 9.0 ALIGNMENT WITH COCHRANE POLICIES AND GUIDELINES



9.0

### 9.1 *Cochrane's Development Adjacent to Escarpment Policies*

The Town of Cochrane's unique landscape includes the Bow River, rolling hills and significant escarpments. These landscape features help to make Cochrane a desirable and distinctive community. The unique topography has resulted in the need for the Town to develop strategies and policies for development adjacent to these amenities. The Town's Municipal Development Plan and Land Use Bylaw include specific policies for developments adjacent to escarpments. Riversong Stage 3, as proposed, is supported by a variety of detailed geotechnical analysis and conforms to the Town's slope policies.

The natural top of slope along the west boundary of Precedence will remain untouched. A 15m setback/escarpment zone will be provided where it provides a minimum 1.5 Factor of Safety (FOS). Where the 15m setback does not provide a 1.5 FOS, the setback was pushed further from the top of slope until that 1.5 FOS is obtained. Therefore, Precedence as proposed meets and/or exceeds a 1.5 FOS along the west escarpment.

Figure 19 illustrates the natural top of slope and the 15m setback zone. As illustrated, the 15m setback does not reach a 1.5 FOS along the north part of the west escarpment. For this reason, the 1.5 FOS has been indicated on Fig 19, and the development cells have been pushed back to ensure all development is beyond a 1.5 FOS. A small pocket of grading, as indicated by the blue hatch on Fig 19 still meets a 1.5 FOS but encroaches into the 15m setback. This proposed grading is permitted in accordance with policies in the MDP, and is discussed in greater detail in Section 10.1.1.

### 9.1.1 *Cochrane Municipal Development Plan*

The Cochrane Municipal Development Plan (MDP) Section 6.3.3 Ecologically Significant Areas provides guidance and policies for development adjacent to slopes. Specifically, section 6.3.3:

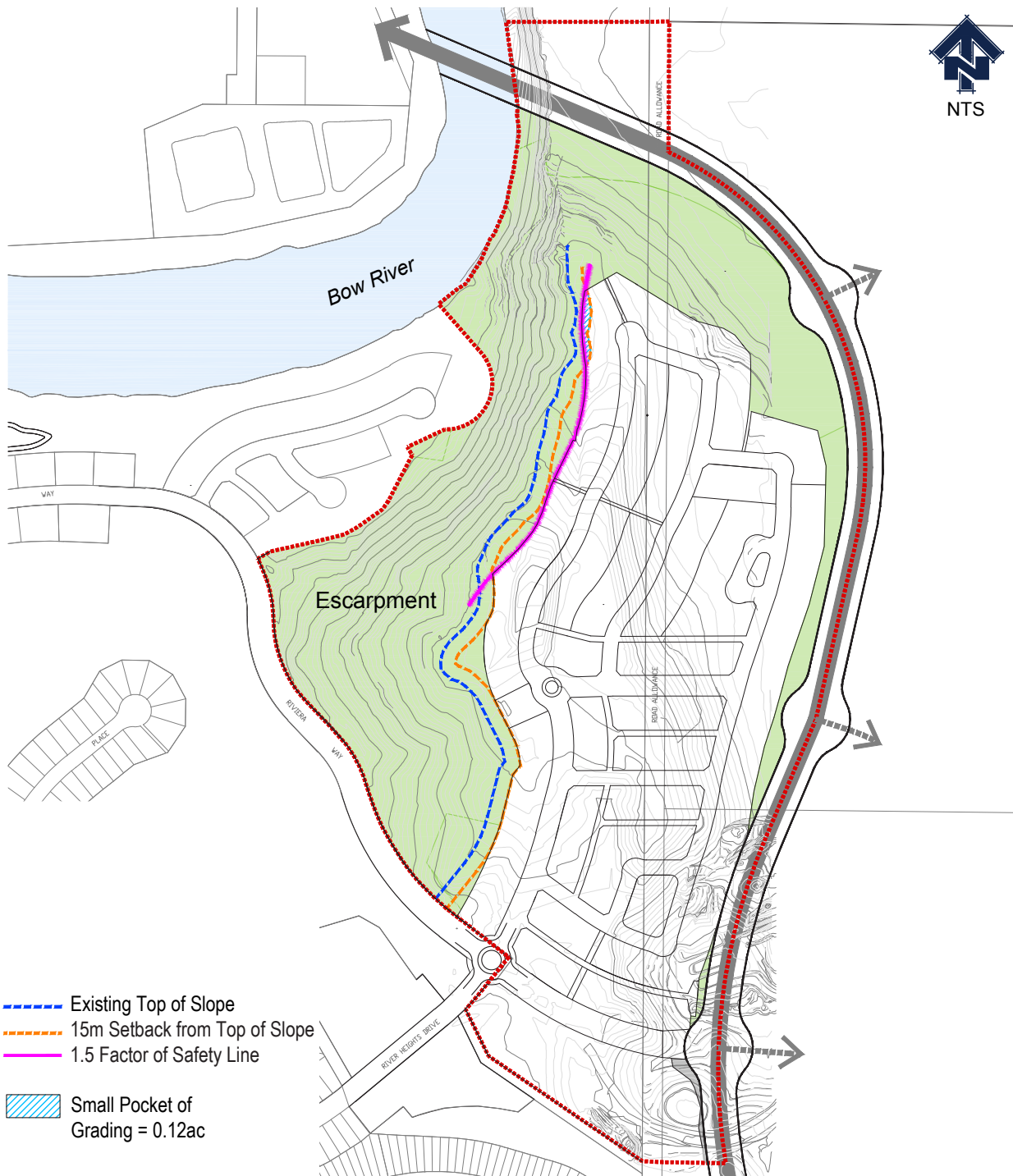
- (t). Developers are prohibited from grading lands containing slopes greater than 15 percent in order to expand the area available for development. Significant natural topographic features (e.g. knolls, ridgelines, bedrock, outcrops, cliffs, and ravines) should be considered by the approving authority to remain in their natural state.

Precedence is designed to conform to the natural top of slope with a 15m setback to property lines. This will ensure that the escarpment remains in its natural state. One small exception, as permitted under MDP Section 6.3.3(u), is identified below.

- (u) Notwithstanding Section 6.3.3(t), at the discretion of the Town, small isolated pockets of lands containing slopes greater than 15 percent may be re-graded and incorporated into the developable lands.

There is a small pocket of land in the north part of Precedence, as indicated by the blue hatching on Figure 19, where the 1.5 FOS line falls within the area between the Top of Slope and the 15m Setback line. To allow for continuous development, Precedence proposes to re-grade this pocket of land. It is felt that this falls within the intention of 6.3.3(u) of the MDP to allow for development continuity. Therefore, although a small pocket of grading is proposed, Precedence aligns with Cochrane's Development Adjacent to Escarpment policies, because this grading is permitted at the discretion of the Town under this policy.

**Figure 19: Development Setbacks**



Note: The 1.5 FOS line is shown only in the location where it impacts development. The area to the south of the 1.5 FOS line has been determined through geotechnical analysis to exceed a 1.5 FOS



### **9.1.2 Cochrane Land Use Bylaw 01/2004**

Section 11.13.0 Development Adjacent to Escarpments within the Town of Cochrane Land Use Bylaw provides policy direction for Precedence. These policies generally state that development is prohibited on unstable slopes, a top of bank must be established by a qualified professional, a 15 metre escarpment zone is required, a 1.5 Factor of Safety must be identified and all geotechnical work shall be performed by a qualified geotechnical professional.

Precedence has had geotechnical consultants prepare very detailed geotechnical analysis with multiple boreholes and cross sections studied to determine suitable development setbacks and Factor of Safety lines. Figure 19 identifies the Top of Slope, 15 metre setback and the 1.5 FOS line to illustrate how Precedence conforms to these policies.

## **9.2 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 most of the Riversong area. In some situations, further investigation is not possible.

### **9.2.1 Fish and Wildlife**

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. Precedence includes 15.41 ha (38.1 ac), 38% of Environmental Reserve. By preserving this land, the wildlife habitats within will be protected.

The residential lands are not located in proximity to the river, so they will have negligible impact on this waterway.

### **9.2.2 Vegetation**

Site vegetation includes some poplar, shrubs and grassland in the developable area, and Aspen and Poplar woodland in the environmental reserve area. Precedence was designed to preserve and enhance the large escarpment and environmental reserve area. Most existing vegetation will be protected within much of this large expanse of land. The remainder of Precedence is stripped and graded in accordance with an approved stripping and grading plan.

### **9.2.3 Ecologically Significant Lands**

Approximately 38% of Precedence consists of Environmental Reserve. This land will be maintained and preserved in its natural state.

### **9.2.4 Surface and Bedrock Geology**

As stated in McIntosh-Lalani's Geotechnical Investigation, the general subsurface soil stratigraphy consists of silts and sands, deposits of gravel, and glacial and/or lacustrine silty clay overlying sedimentary bedrock. The depths below grade of the gravel and bedrock vary across the site.

### **9.2.5 Soils and Terrain**

The dominant materials are silts and sands, deposits of gravel, and glacial or lacustrine silty clay overlying sedimentary bedrock. In the north and south ends of the site, silts and sands were found below the topsoil overlying sandy gravel. In the central portion of the site, up to 3m of fill was found at the surface.

### **9.2.6 Slopes**

There are significant slopes within Precedence, and the development proposed within the Plan conforms to Town policies for development adjacent to slopes. The natural top of slope will not be altered, and lands beyond a 1.5 FOS will be protected as Environmental Reserve. The Slope Sensitive Design criteria (Section 2.2) of the INDG will be adhered to with the development of Precedence. See Sections 1.4.1.1 and 9.1 for further information on the slopes and Geotechnical Investigations.

### **9.2.7 Geotechnical Investigation**

Geotechnical Investigations were prepared by McIntosh-Lalani Engineering Ltd in December 2013 and an updated geotechnical investigations report has been prepared in late 2016. These investigations ensure that Precedence meets and/or exceeds a 1.5 FOS. Refer to section 1.4.1.1 for more information on the Geotechnical Investigation.

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

The residential components of Precedence are well above the Floodway and Flood Fringe area on the top of the escarpment, meaning there is an insignificant flood potential. The June 2013 floods did not affect this area.

### **9.2.9 Stormwater Study**

A Staged Master Drainage Plan was prepared by Westhoff Engineering and was approved by the Town of Cochrane Engineering and Planning Departments in 2005. It was prepared in conformance with the stormwater policies of the Town and Alberta Environment. See Section 8.3 for further information regarding Stormwater Management.

### **9.2.10 Water Quality and Quantity**

The stormwater management facilities 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.

### **9.2.11 Air Quality**

The proposed development within Precedence is predominantly residential and contains over 38% open space. The development is not expected to result in any appreciable reduction in the current air quality in this portion of the Town.

### **9.2.12 Visual Resources**

The steep escarpments and rolling terrain of the land are beautiful features of the community. The design of Precedence retains the existing features and preserves them as a natural amenity within the community in accordance with the Natural Character (Section 2.1) criteria of the INDG. 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 top of the escarpments where possible so they can enjoy this unique amenity.

### **9.2.13 Land and Resource Use**

The SR-ASP establishes that Precedence include residential land uses and open spaces, as shown on Figure 2. 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. The land will not be used for natural resources.

### 9.2.14 Cultural and Heritage Resources

A Historical Resource Impact Assessment (HRIA) was prepared by Lifeways of Canada Ltd. in 1981. The assessment indicated some archaeological sites in the general area, but no sites of significance were located within the Precedence boundary. Therefore, no further historical resource investigations are required.

### 9.2.15 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.

## 9.3 Planning Principles of the Municipal Development Plan

### 9.3.1 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.”

Precedence 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.

There are 15.41 ha (38.1 ac) of Environmental Reserve lands within Precedence. The natural ecology of the environmental reserve area will remain intact.

A substantial sidewalk and pathway system will link current and future residents with the abundance of natural open spaces. The Bow River Pathway system will follow the natural alignment of the Bow River, and cross the River to access the north side via River Avenue Bridge from Riversong Stage 2. This bridge crossing will connect pedestrians and cyclists to Cochrane’s downtown industrial area and the downtown core. This provides an opportunity for residents to walk or cycle to work and is consistent with the Connections requirements (Section 4) of the INDG.

The proposed land use re-designation identified in this plan will allow for a greater range of housing choice and affordability, as well as help increase the density of the community. Higher densities support responsible growth management.

### 9.3.2 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.”

Precedence is a community that provides an abundance of open space, 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, which in turn increases their quality of life.



The variety of housing types proposed within Precedence, including multi-unit dwellings, townhouses, and single family homes, provide a diverse housing and population base. Precedence will continue to meet the broad and ever changing needs of existing and future Cochrane residents, as per the Neighbourhood (Section 3) criteria of the INDG. A family could first move into an achievable housing style in Riversong, transition to a single family home, and retire into a multi-unit dwelling. Residents could live out their entire life-cycle within Precedence.

### **9.3.3 Principle 3: Environmental Stewardship**

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

Precedence provides 15.41 ha (38.1 ac) of Environmental Reserve, preserving the existing vegetation and wildlife habitats within the Precedence boundary. The topography of Riversong is a natural feature of the community that has been preserved and respected with the community design. The Context Sensitivity (Section 2) criteria of the INDG are adhered to.

### **9.3.4 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 Precedence is 479, and the approximate projected population is 1,403, based on 3.3 people per household for single family and semi-detached lots and 2.2 people per

household for townhouse and multi-unit dwellings. This additional population will support local business which will encourage industries and new employers to base themselves in Cochrane. Home-based businesses are encouraged throughout the single family areas within the Plan. Home-based business is not discouraged within other residential areas, but particular attention must be given to ensure the parking requirements of the Cochrane Land Use Bylaw 01/2004, or current, are met.

While Precedence and the community of Riversong as a whole does not include commercial development, commercial developments are proposed in proximity to Riversong in the River Heights ASP. The residential base of Precedence will aid in the sustainability of these commercial developments.

### **9.3.5 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.”

Precedence does not significantly deviate from the approved Riversong Design Brief. 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 the community.

## 9.4 *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.

### 9.4.1 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 greenspaces, 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 Precedence will feel connected to Riversong, and Cochrane, through their enjoyment of their surroundings, and therefore empowered to become a voice in Cochrane's future.

### 9.4.2 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.

Precedence provides density levels above the 19.8 units per hectare (8.0 units per

acre) 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 Precedence that employ innovative technology to reduce energy consumption, such as low flush toilets, energy efficient lighting, and energy star rated appliances.

Precedence 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.

### 9.4.3 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.

Precedence will provide homes for approximately 1,403 new residents to Cochrane. These residents will utilize the nearby local commercial centres as well as the downtown core for their shopping, entertainment, and service needs. The continued development of the community will provide jobs to local tradespeople.

The Bow Valley High School provides

educational needs, jobs, and volunteering opportunities for Precedence 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.

#### **9.4.4 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.

Precedence provides residents with a diverse range of housing options. A resident of Precedence 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 as they progress through life and start a family. Larger estate homes are also offered in Precedence adjacent to the escarpment which may become attractive as buyers reaches middle age. Once the retirement years approach, lifestyle changes may result in buyers looking to one of the maintenance free, townhouse options that are being considered in Precedence. A resident 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 Precedence offer residents with multiple choices for getting around their community. The Bow River Pathway system and River Avenue Bridge provide opportunities for pedestrians and cyclists to directly access Cochrane's downtown industrial and commercial centres. The natural escarpment is a significant feature of the community and will be left in its natural state.

Bow Valley High School provides opportunities for education, jobs, community activities, and volunteering within Riversong.

With all the amenities Precedence has to offer, highway commercial uses approximately one kilometre to the west, viable local commercial opportunities located in proximity to the east, and the Cochrane downtown core under a ten minute drive, the neighbourhood provides residents with a complete community.





TAMANI COMMUNITIES | JOHN ROBINSON

# PRECEDENCE

RIVERSONG STAGE III

NEIGHBOURHOOD PLAN