SOUTHBOW LANDING NEIGHBOURHOOD PLAN

Vision for a Complete Community

February 2025

Qualico Communities Ltd.


Southbow Landing:
Connecting people, places,
and the environment

SOUTHBOW LANDING NEIGHBOURHOOD PLAN

COCHRANE

ORIGINALLY PREPARED FOR:
PHILCO FARMS LTD. (2015)

UPDATE PREPARED FOR:
QUALICO COMMUNITITES LTD. (2024)

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The Southbow Landing Vision for a Complete Community

1.0

SOUTHBOW LANDING
NEIGHBOURHOOD PLAN

Southbow Landing is a master-planned, complete community in River Heights, and is home to between 8,000 and 10,200 residents.

Anchored by a mixed use village centre and employment centre area at its west end and the Bow River and Glenbow Ranch Provincial Park in the east, these unique attributes are linked by a centralized green corridor that also serves to connect the community to its schools, natural features and a central community park. A Cochrane community with a unique identity that takes advantage of distant views to the Calgary skyline, mountains and local vernacular landscape, Southbow Landing also provides opportunity for its residents to work here and meet every day needs within the community.

The community is organized by a well-defined street network of walkable blocks emphasizing pedestrian and cycling mobility, safe routes to school and connectivity to the river, planned open spaces, trails and parks, arranged as distinct but connected neighbourhoods. A wide range of open spaces – potentially including a direct connection to Glenbow Ranch Provincial Park – provide many recreational opportunities, including pathways and trails, athletic fields, neighbourhood parks, commons and a central green corridor.

The grid-based block pattern establishes a structure whereby the arrangement of uses creates a strongly defined and connected public realm and creates flexibility in project phasing. A wide variety of housing types and mixes in sub-neighbourhood areas provide housing options for a wide range of household types and generations so that multi-generational living and aging-in-place within a complete community can be accommodated.

Protecting and enhancing the environment is a central theme, with emphasis on preservation of the significant plant and wildlife habitats that define the landscape here. Significant wetland areas have been retained, enhanced and integrated thoughtfully into the area to manage stormwater, provide visual amenity and sustain ecological diversity. A village centre and employment area provide opportunity to work locally and are connected to the adjacent neighbourhoods, promoting walkability. It is envisioned that the employment centre will offer a variety of occupations and services allowing some of the residents to effectively live and work in the same neighbourhood.

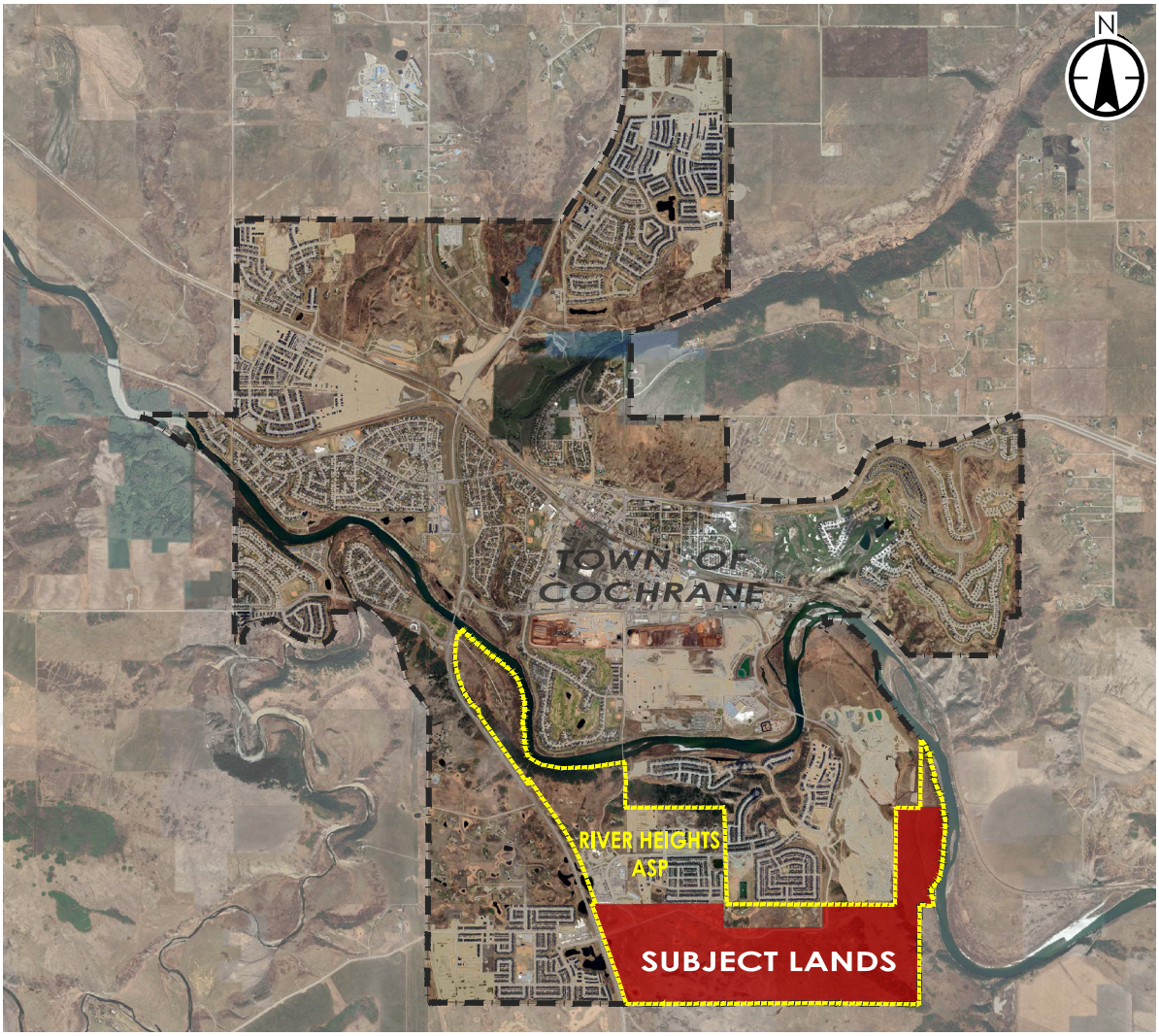
2.0

Location & Context

The Southbow Landing Neighbourhood Plan (SLNP) area is located in the south sector of the Town of Cochrane, comprising 220.75 hectares (545.5 acres). The area is bounded by Highway 22 (Cowboy Trail) on the west, The Willows of River Heights neighbourhood, Riversong neighbourhood and the Green Drop Aggregates gravel extraction operation and vacant lands to the north, the Bow River to the east, and an undeveloped Town Road Allowance to the south, beyond which are agricultural lands located in Rocky View County.

Figures 2.1 and **2.2** illustrate the location and the site within Cochrane.

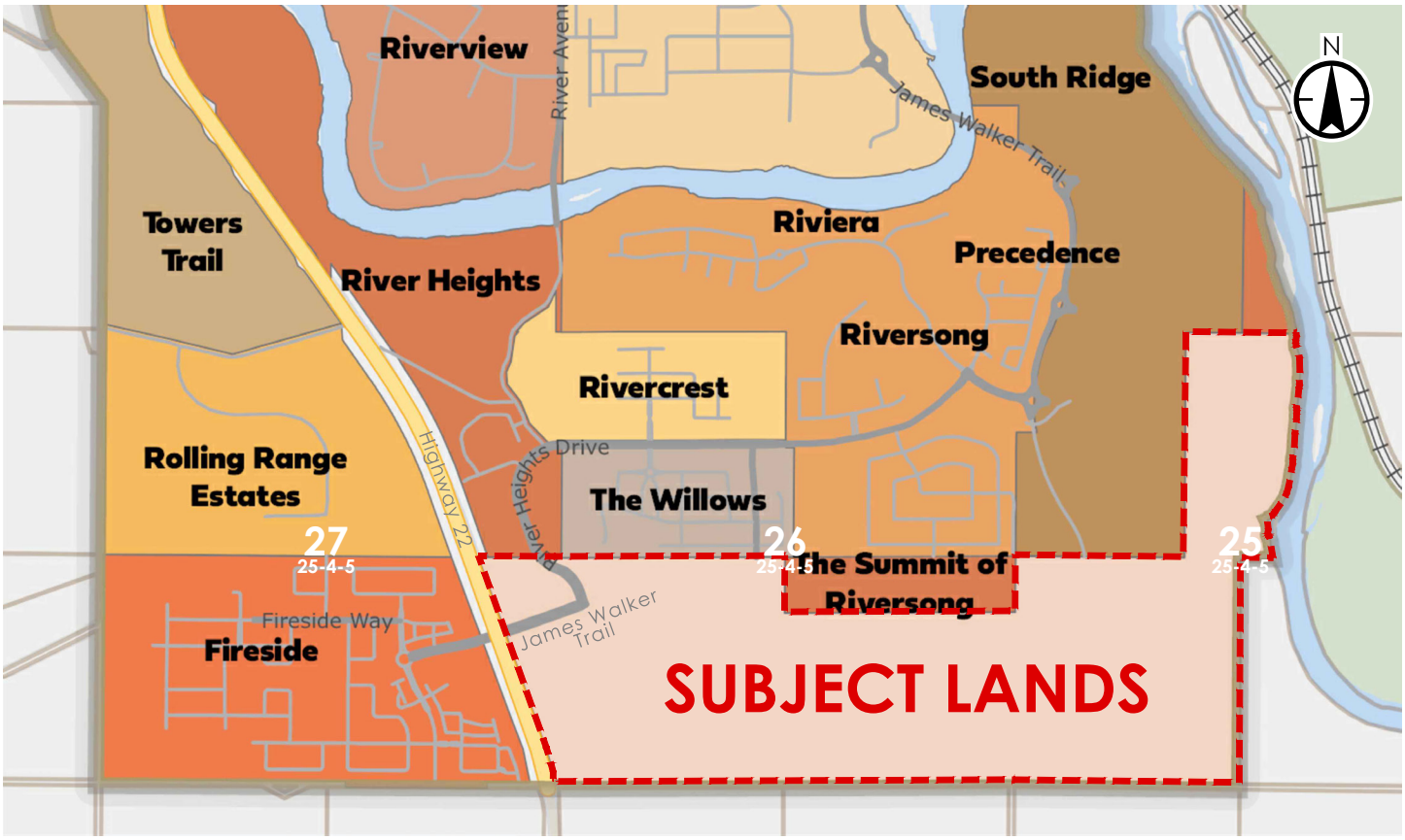
Figure 2.1 Context Plan

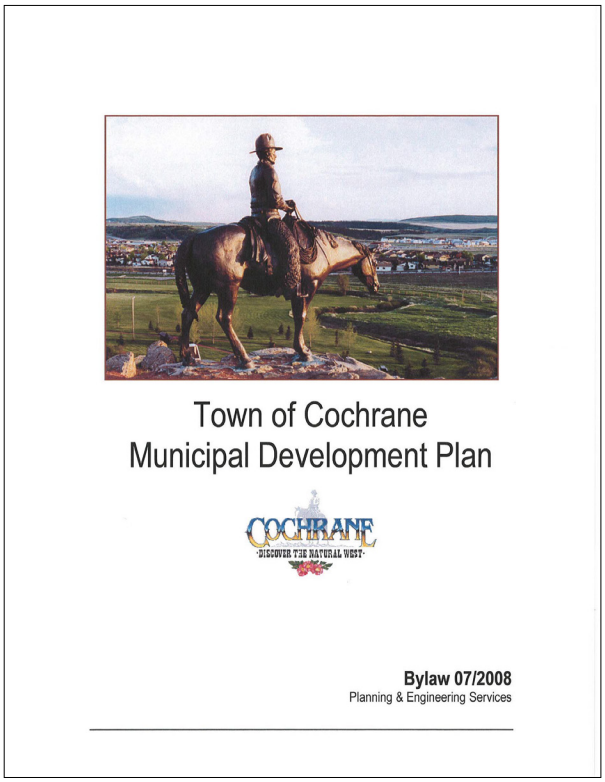


River Heights is a rapidly developing area in south Cochrane, annexed to the Town in 2004 to provide land for planned future growth. In October 2011 Cochrane Town Council adopted the River Heights Area Structure Plan (RHASP), an ASP area of approximately 414 hectares (1,022 acres), to provide a planning and development framework for growth in the area generally south of the Bow River and the existing South Ridge ASP area, and east of Highway 22. The RHASP provides a long term development vision for a complete community, adhering to the principles of the Cochrane Sustainability Plan and the Town of Cochrane Municipal Development Plan. The Southbow Landing Neighbourhood Plan comprises the southerly portion of the RHASP area, making up more than 50% of the total ASP area, under single land ownership and originally approved in 2015 by Philco Farms Ltd.

In addition to the physical contextual attributes of Southbow Landing, the Plan area is somewhat unique from a larger community perspective, as it represents one of the most significant areas of contiguous undeveloped lands identified for future urban growth, and also contains a portion of land inventory strategically identified by the Town of Cochrane for accommodation of future employment opportunities.

Figure 2.2 Context Plan





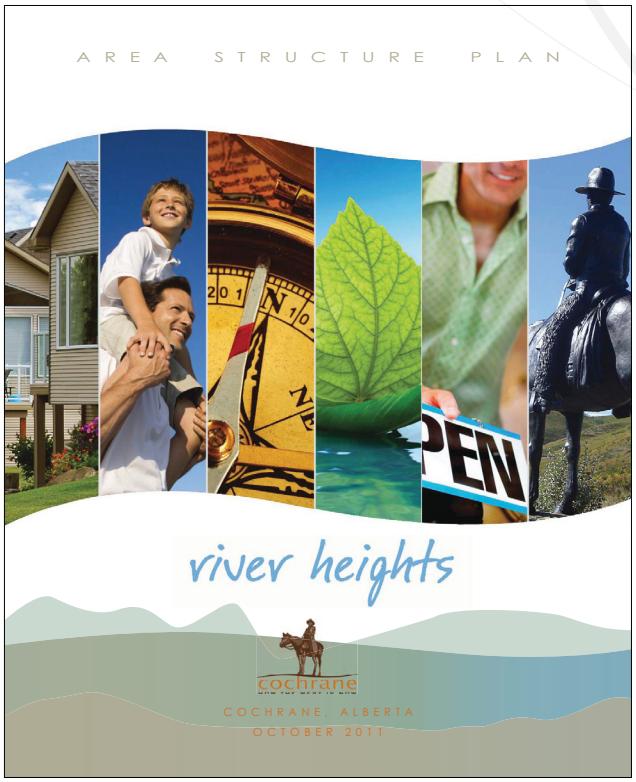
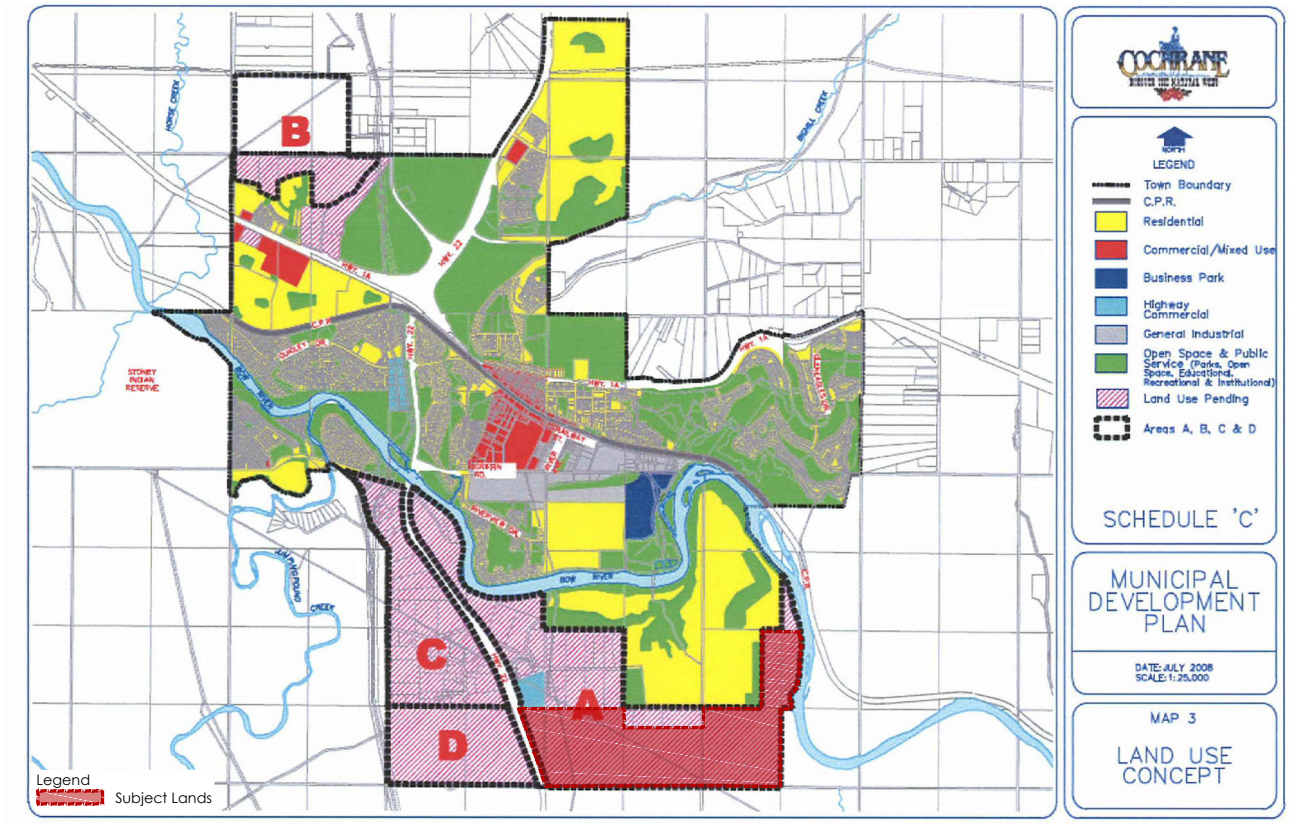


Figure 2.3 Town of Cochrane Municipal Development Plan



2.1 Purpose of the Neighbourhood Plan

The Southbow Landing Neighbourhood Plan (SLNP) is a non-statutory plan, approved in 2015, intended to provide a more detailed framework to facilitate the planned development of neighbourhood areas following approval of an Area Structure Plan. The Neighbourhood Plan establishes a master plan and arrangement of Land Use Districts, and provides the rationale and logic to support future subdivision and development proposals on a phased basis within the plan area. This Neighbourhood Plan provides an explanation of the layout, design rationale, transportation and servicing and major open space network elements to facilitate future decision-making at the subdivision and development stages. The Neighbourhood Plan is therefore a bridge between the higher level policies of the RHASP and the form and character that will be created in the SLNP as it develops and matures. The neighbourhood plan is also informed by and aligns higher-level policy and Town direction contained in the Cochrane Sustainability Plan, Cochrane Open Space Master Plan, Cochrane Integrated Neighbourhood Design Guidelines and the Cochrane Municipal Development Plan to the local planning and development scale.

Figures 2.3 and **2.4** illustrate the location of the Southbow Landing Neighbourhood Plan in relation to the land use concepts in the *Cochrane Municipal Development Plan and the River Heights Area Structure Plan.*

Figure 2.4 River Heights Area Structure Plan

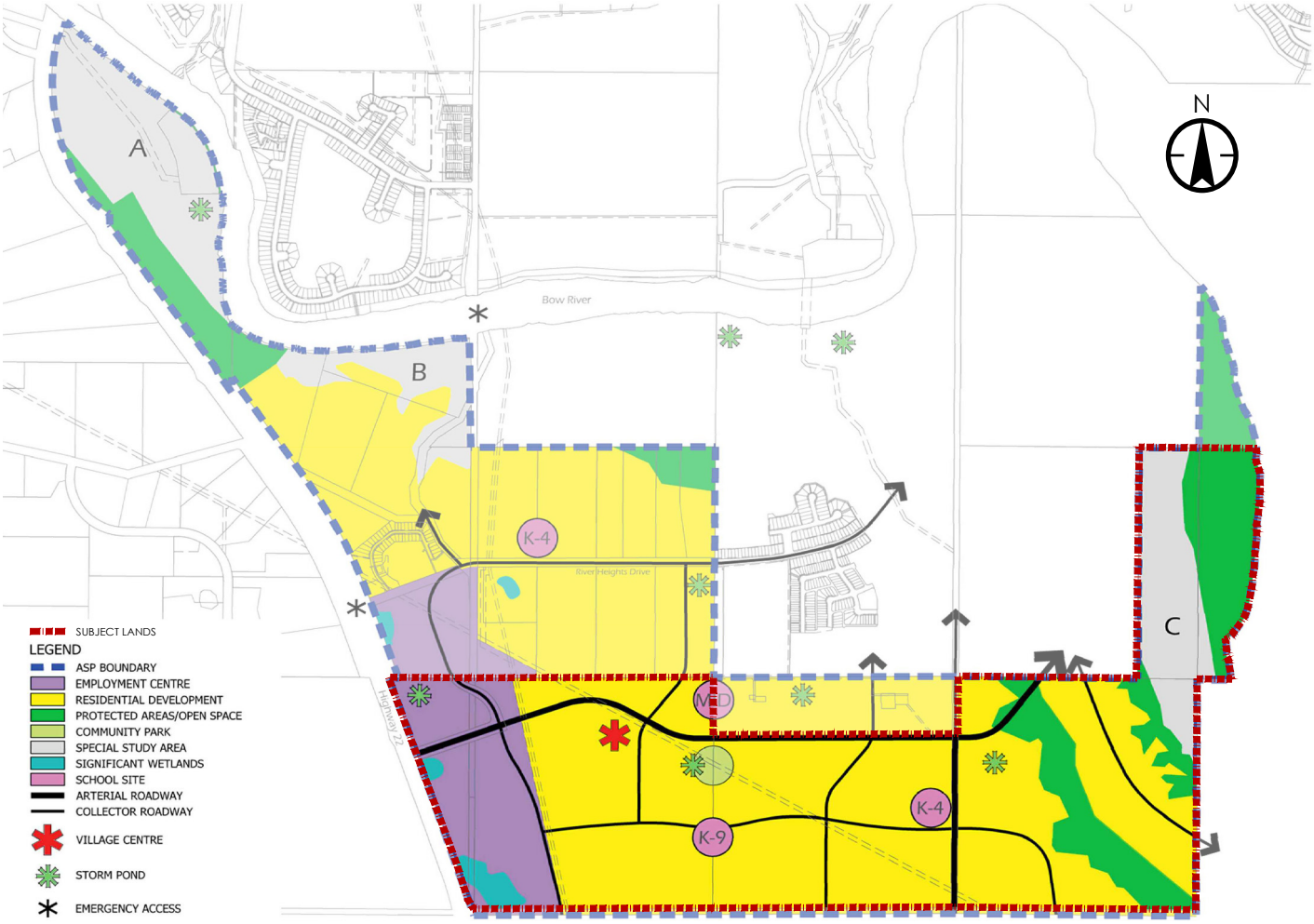


Table 2.1 Legal Description & Land Ownership

The lands comprising the SLNP are legally described as:

- SW 25-25-4 W5M
- Portion NW 25-25-4 W5M
- Portion NE 25-25-4 W5M
- SW 26-25-4 W5M
- Portion SE 26-25-4 W5M
- Portion SE 27-25-4 W5M
- Portions closed road allowance OT-25-4 W5M

All land holdings within the SLNP are under single ownership by Southbow Cochrane Development Corp.

In addition to private land holdings, an initial segment of the James Walker Trail arterial and River Heights Drive roadways were constructed by the Town as part of the recent relocation of the former River Heights Drive / Highway 22 intersection in 2011 on the westerly portion of the SLNP lands.

3.0

Site Characteristics

3.1 Environmental Landscape

The pre-development landscape that comprises the SLNP is defined by the striking variety in landform that characterizes this part of Cochrane. Generally, the lands are comprised of a large upper plateau, an escarpment / bench system above the Bow River, and low-lying lands at the Bow River valley floor. The landscape of the SLNP area is characterized by:

- Significant topographic relief from a relatively flat upper plateau above the Bow River valley escarpment to the Bow River below, creating opportunities for mid-distance and long range vistas, and visual identity from other areas in Cochrane and the Bow River valley;
- Spatial and visual proximity to Highway 22, thereby positioning a portion of the lands in Cochrane's Gateway District;
- Adjacency to the Bow River, visual proximity and planned future pedestrian connectivity to the Glenbow Ranch Provincial Park east of the river;
- Position at the interface of the rural / urban fringe between Cochrane and Rocky View County;
- Adjacency to the Green Drop aggregates extraction operation, and accommodation of a portion of a temporary gravel haul road between the aggregates operation and Highway 22; and
- Knob and kettle terrain, predominantly in the westerly portion of the lands, with various modifications to the landscape as a result of several decades of agricultural use, primarily for livestock grazing, and construction of the first leg of James Walker Trail.

3.2 Natural Site Characteristics

The Neighbourhood Plan area contains 66 wetlands, ranging from Class 1 Ephemeral Ponds to Class IV Semi-permanent Ponds, concentrated in the western half of the Plan area lands, within grazed rangelands. Classification and wetland strategies are covered in **Section 6: Natural Areas Integration**. The largest wetlands are located at the westerly edge of the property adjacent to Highway 22. One of these wetlands was previously disturbed due to the construction of the James Walker Trail / River Heights Drive relocation in 2011. This portion of the Plan area is also defined by significant localized terrain relief in the area immediately east of Highway 22 in the vicinity of, and south of, the James Walker Trail intersection, where the main land plateau steps up from the grades at Highway 22.

Toward the eastern edge of the site, an escarpment runs in northwest/southeast direction and transitions into the floodplain along the Bow River. The Bow River Valley is identified as an Environmentally Significant Area on a national level for the presence of unique habitats and function as a wildlife movement corridor for the region. The retention of native riparian and forest habitat within the Bow River Valley and on the escarpment is expected to retain important wildlife corridors through the region.

Two main forested areas providing largely continuous cover and sporadic tree stands surrounding wetlands are present in the Neighbourhood Plan area. Riparian areas adjacent to the Bow River within the Southbow Landing lands consist of largely unvegetated riverbank, comprised largely of river cobble with intermittent stands of riverine forest. Riparian areas act as a floodway and provide habitat for both flora and fauna. Riparian Areas associated with the Southbow Landing Plan area are suitable for retention as Environmental Reserve within the proposed Southbow Landing development.


Successful communities
are created where design
and life intersect.

4.0

Southbow Landing: The Neighbourhood Plan

4.1 Master Plan Organizing Principles

The Southbow Landing master plan has been designed comprehensively as an integrated, complete community so that planning, mobility, landscape / open space, servicing and stormwater management could be addressed comprehensively. The size of the SLNP area allows the delineation of multiple sub-neighbourhoods, represented as design sectors, which facilitates better understanding of the site and creates responsive design solutions. Each of these sectors has a unique set of design criteria that will require a different bundle of solutions tailored to the site inventory, analysis and desired programme. Key organizing principles of the master plan are outlined below. The Town of Cochrane Integrated Neighbourbood (May 2013) Design Guidelines were also referenced in the creation of the key defining the principles. In May 2013 the Southbow Landing project team engaged the Town of Cochrane and other key stakeholders in the larger Cochrane community in a one-day working session to assist in the definition of key organizational elements and desired amenities in the Southbow Landing plan. Key principles articulated during the March 2013 session were captured and used as the basis of the Southbow Landing master plan, and are summarized graphically in **Figure 4.1**. Following the initial submission, the Plan has been further refined during many collaborative working sessions with Town administration.

4.1.1 The Plateau

The area at the top of the Bow River escarpment system is a highlight of the Southbow Landing master plan. Neighbourhoods in the upper plateau connect to local pathway loops along the escarpment, connecting residents to both local parks and large natural areas while creating opportunities for lookouts to view the Bow River valley in the eastern portion of the Plan area. The plateau area contains the large majority of residential and non-residential development in the SLNP and is organized on a traditional grid road system to provide maximum connectivity, mobility and the ability to provide mixed residential types which can adapt over time if required.

4.1.2 The Middle Bench

A prominent bench located between two escarpments above the Bow River in the easterly part of the Plan area is designed as separate but connected neighbourhood enclave. This portion of the residential concept is based on a more curvilinear model at lower density (urban estate lots) to allow future building sites to respond to the unique physical conditions. Housing lots have been sited on a gently sloping bench between the two wooded escarpments. The lots and the road alignment parallel the contours and will be afforded long views down the river valley while responding appropriately to the sloped portions of terrain in this area. Lots with greater elevation gradient front the west side of a central access, with the slope decreasing moving down to the river eastward.

4.1.3 The Bow River

The Bow River is a unique natural amenity that provides tremendous value to the Southbow Landing community. The community's interface with the Bow River is primarily preserved as a naturalized landscape and riverine habitat. Controlled access is provided with low impact pathways to provide active modes access, including future potential non-motorized access to the Glenbow Ranch Provincial Park on the east side of the Bow River. The top of the escarpment system provides opportunities for lookouts and views of the river valley. Habitat enhancements may be considered with the integration of the reconstructed wetland / stormwater management facility and pathway development in this area.

4.1.4 The Green Corridor

The primary organizing feature of the SLNP is a "green spine" of open space that transects the neighbourhood from Highway 22 to the river. This greenway connects blocks of the neighbourhood, the Employment Centre, Village Center and residential neighbourhoods to the river.

Figure 4.1 May 2013 Visioning Session Summary Diagram

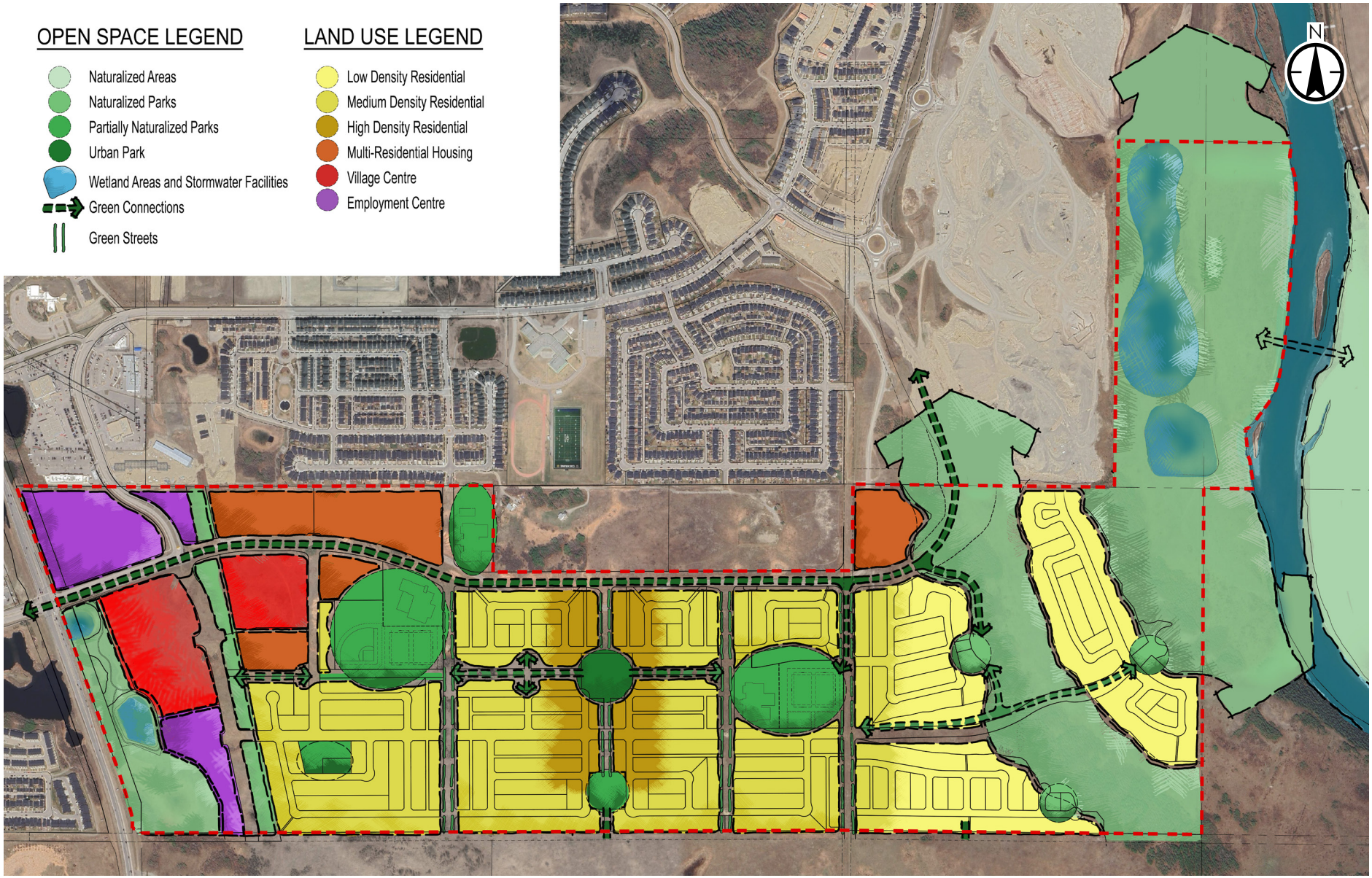
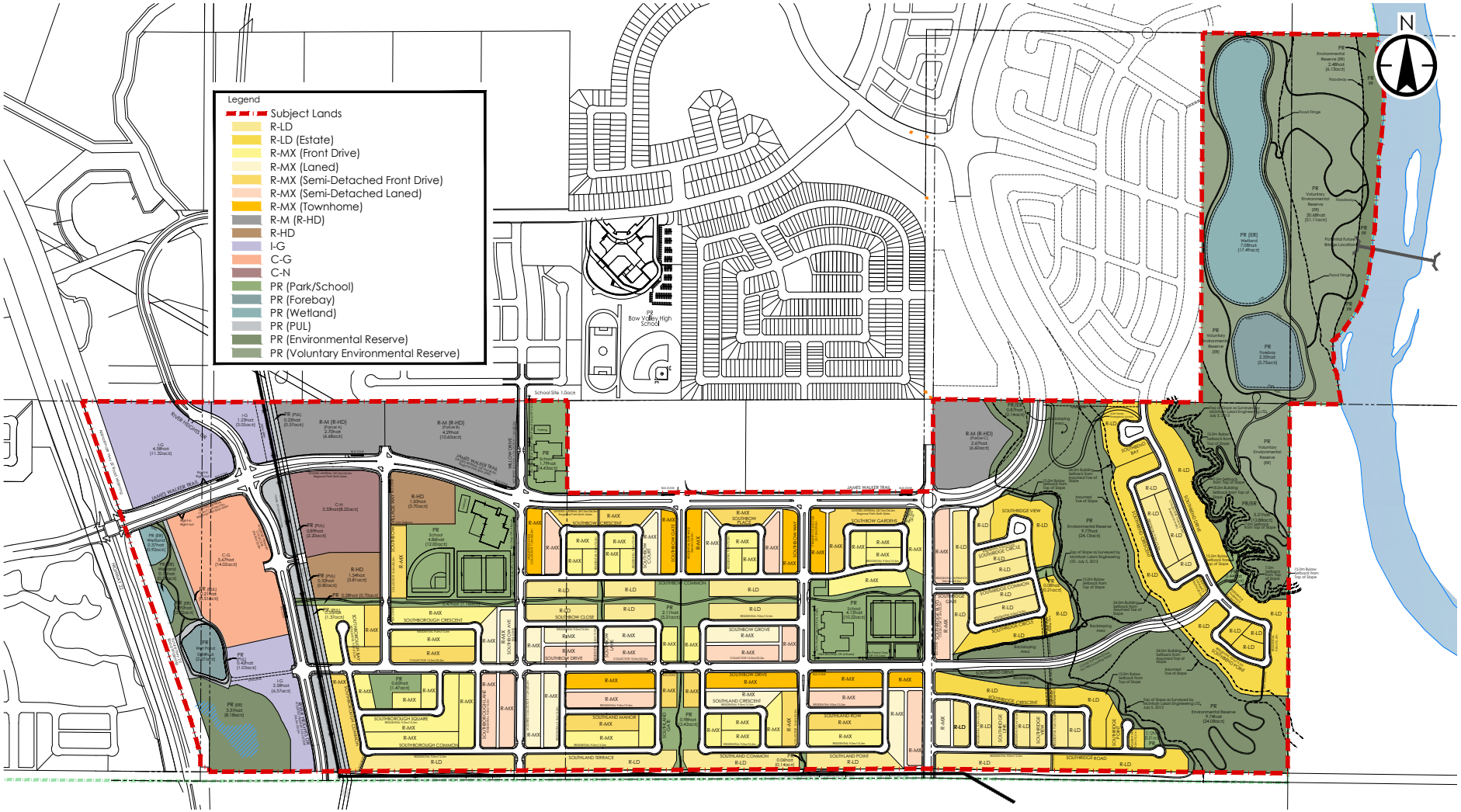


Figure 4.2 Land Use Plan



4.2 Southbow Landing Master Plan Elements

Arranged around and within the core organizational elements described above, the SLNP establishes the basis for development of an integrated, master planned community over the next 10 to 15 years. The key development areas within the SLNP are the Cochrane Gateway, residential neighbourhoods, the Village Centre and Employment Centre. The core green spine, open space areas / schools, roadways and interconnected pathways (described in other sections of the SLNP) unify and link these development areas together, so that over time Southbow Landing will develop and mature as a complete community. The Southbow Landing Neighbourhood Plan is shown in **Figure 4.2**.

4.2.1 The Cochrane Gateway

This area of the site has two functions: first, as a gateway to Cochrane and second, as an entrance to the Southbow Landing neighbourhood. Highway 22 bisects several wetlands and ponds with the land gently sloping away from the roadway to higher ground. The plan has taken great care to preserve and enhance the wetlands and vistas that create the entrance to the Town. To take advantage of this naturalized area the plan has carefully located a pedestrian path around the ponds. Looking from Highway 22 to the east is a ridgeline. To manage the interface between the employment zone from Highway 22 (Cochrane Gateway) and maintain a scenic corridor a combination of vegetative massing (trees, shrubs and grasses) and earth mounding will be utilized. The southeast corner of Highway 22 and James Walker Trail presents the opportunity for a landmark feature to mark the identity of Southbow Landing and enhance the gateway to Cochrane. This may be achieved architecturally or with landscape features to compliment the wetlands. Refer to **Figure 5.11** for an illustration of the open space concept for this area.

4.2.2 The Neighbourhoods

The neighbourhoods have been laid out in blocks to allow for incremental change and more adaptability in housing mix and phasing. The housing types provide for lane, front garage and on-street parking. The block structure is designed to help orient pedestrians and motorists primarily on the west to east axis. The blocks are connected to the central green which in-turn is connected to the two schools and central park. The blocks are designed to be walkable with an average length of 150m x 100m. As per the Neighbourhood Design Guidelines, the mobility network has considered all modes of transportation in the street design, and the overall connectivity and access to amenities in the plan. All of the neighbourhood housing units, with the exception of those on the middle bench are within 400m walking distance of schools.

4.2.3 Employment and Village Centre

The Employment Centre and the Village Centre are an important part of the local economy and should be well designed and integrated as a gateway feature to the community. The two centres have been intentionally located adjacent to one another to foster the seamless integration of working and shopping activities within a walkable and connected 'place' where employees, residents and shoppers interact. This follows the intent outlined in the River Heights Area Structure Plan (RHASP), which identified the location of the Employment Centre and demonstrated a conceptual location for the Village Centre (identified by an asterisk) immediately to the east. Further, the May 2013 session with the Town staff and the larger Cochrane community supported the notion of an integrated Employment and Village Centre. The vision for how these two areas will function and interact is reinforced though the overall design and principles outlined in the Neighbourhood Plan.

By integrating the Employment and Village Centres, surface parking, streets, pedestrian and bicycle infrastructure, and open spaces can all be designed and utilized more effectively and efficiently. Constraints on the site such as the ATCO gas line and relocated overhead power line, will be addressed through the use of visual cues, such as landscape screening, to reduce undesired views, and help ensure that strong pedestrian and vehicle connections remain throughout the plan.

4.2.3.1 Employment Centre

The RHASP identifies an Employment Area located adjacent to Highway 22 in the westerly portion of the Southbow Landing Neighbourhood Plan (SLNP), which extends to lands north of the SLNP. As a component of a larger town-wide inventory of commercial lands identified for employment uses, this area represents the objectives of creating opportunities for Cochrane residents to work locally and establishing commercial/light industrial tax assessment. The RHASP acknowledges that flexibility in the size and composition of the Employment Area is an important consideration in achieving these and other objectives associated with the Employment Area.

The SLNP incorporates the RHASP Employment Area as an Employment Centre with a suitably flexible land use district to facilitate future development of this area. The Town of Cochrane Growth Management Strategy was approved in May 2013 and identifies some town-wide ratios for employment-to-population in business parks, light industrial and other employment uses to the year 2062 based on jobs and floor area. However, at the time of writing this Neighbourhood Plan the Town of Cochrane is in the process of articulating an economic development policy that could potentially target end users for this and other employment zones. Therefore, a flexible approach is proposed that emphasizes the creation of a suitably sized, contiguous area that can be well-integrated with the remainder of the Southbow Landing community. Generally, light industrial uses are anticipated for the south portion of the plan area with a transition to more traditional office uses as the market demands. A grocery centre is intended for the intersection of James Walker Trail and Highway 22. This anchor for the Village Centre, along with supporting neighbourhood retail uses, would support the development of the Employment Centre. A Municipal Services site has also been conceptually shown within the Neighbourhood Plan, and is intended to provide a potential Emergency Services station within the town of Cochrane. Depending on the ultimate transportation network and required siting, the ultimate location of the Municipal Services parcel will remain flexible.

4.2.3.2 Village Centre

The Village Centre is intended to be a robust shopping and mixed use district, supporting the vision for a neighbourhood with places to live, work, shop and recreate. Anticipated uses include a variety of services, restaurants, and retail shops. Opportunity also exists for health and professional building type uses. Public spaces will be incorporated within the Village Centre, offering a place for gathering, patio cafes, and potentially allowing for a community market on a seasonal basis.

4.2.3.3 Employment Centre & Village Centre Design Principles

The following principles are intended to be used in conjunction with the Town of Cochrane Neighbourhood Design Guidelines, and will outline the key elements required to achieve the vision of both the Employment Centre and Village Centre as an economic hub and vibrant heart for the community. Specific details of site development will be determined at development permit stages of the development process, but will generally follow the principles below. In addition, signage will be in compliance with Cochrane's General Rules for Signs, Section 34.3.0.

GATEWAY TO COCHRANE

- The western edge of the Employment Centre is visually prominent in the Gateway. Substantial landscaping and sensitively placed signage should be provided to ensure an aesthetically appealing visual entrance to the Town.
- Building elevations along the western and northern boundaries of the Employment Centre should have strong architectural features to further enhance the gateway.
- Street trees, shrubs and groundcover plantings are encouraged to add visual interest.

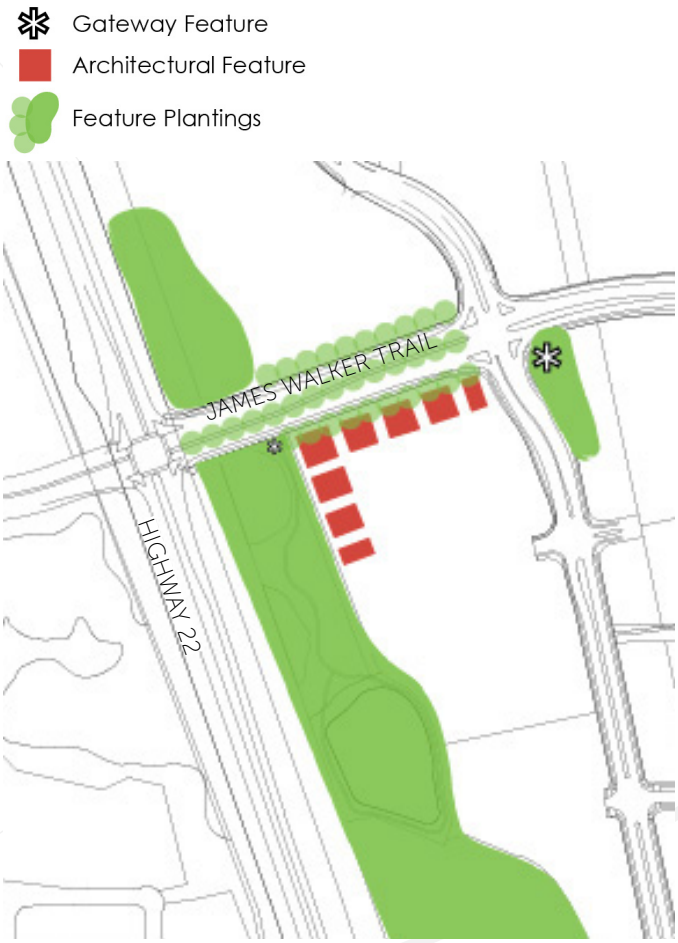


DIAGRAM 1: Gateway

PARKS, PLAZAS & OPEN SPACE

- Provide for a variety of passive and active uses for residents and workers which support, retail, commercial and residential functions of the area.
- Both the employment Centre and Village Centre should offer a distinct gathering place:
- The Employment Centre should provide a gathering space for employees, offering spaces for lunch-time breaks, and areas of passive recreation;
- The Urban Square within the Village Centre should have a civic focus to encourage public gathering at events that will activate the shopping district.
- Gathering spaces should be designed to create high quality public spaces that are visually engaging, safe, and accessible.
- Features such as paving, landscaping, public art and seating should be considered to add visual interest and function to public gathering places and pedestrian routes.

DIAGRAM 2: Open Space

- Plazas and Gathering Spaces
- Employment Centre
- Village Centre
- Park or Naturalized Area

Sculptures or public art installations can add visual interest to public spaces

Landscape features, decorative paving, and public space encourage people to enjoy shops and restaurants

DIAGRAM 3: Buildings & Active Frontages

BUILDINGS & ACTIVE FRONTAGES

- Strong urban form – Diverse retail shop fronts in the Village Center are encouraged to be developed at a human-scale, with a strong street edge and parking secondary to the pedestrian realm.
- Pedestrian-oriented – The Village Centre should have decorative light fixtures, benches, banners, bollards, waste receptacles, decorative paving and street trees to encourage pedestrian activity and promote walkability in the village centre.
- Distinctive sense of place – The Village Centre will provide a unique character while also respecting the natural and community character of Cochrane. Development should adhere to the Western Heritage Design Guidelines.

- Interface – **Special** attention should be placed on the interface between James Walker Trail and the Village Centre to create an aesthetic environment for pedestrians.
- Loading facilities and buildings services accesses should be minimized and located away from the pedestrian realm.
- Buildings should be sited to maintain a human scale through appropriate articulation of form and proportion.
- Within the Employment Centre, site access (driveways) should be used to lead traffic from the central spine street to internal parking areas that are predominantly behind buildings, so as to ensure that the central spine street is predominantly fronted by buildings and building entries, and that the street is pedestrian oriented. Outdoor storage and equipment areas should be discourage on key pedestrian linkages.
- All buildings that are visible onto Highway 22 should provide an attractive and animated façade to the highway, as well as an active frontage to open spaces and streets within the employment area.
- Where possible, parking, maneuvering space, and loading docks should be discouraged along key pedestrian linkages and if possible, combined with other tenants.
- Landscaping around buildings should be complementary to building scale, mass and fenestration.

Architectural detail contributes to the sense of place for employment uses

LAND USE

- Variety of uses – A wide variety of uses should be encouraged within the Employment Centre which will encourage the development and market success of the site. Uses could include, light industrial uses, offices, and limited retail. All uses should be placed to ensure that suitable proximity to each other and adjacent uses, especially to residential. Where residential uses front onto the employment centre and its associated surface parking, adequate screening will be provided in the form of landscaping.
- Flexibility – the list of Permitted and Discretionary Uses within the Employment Centre should be flexible so that future planning and subdivision can occur based on changing market conditions while maintaining a platform to meet Town development objective.
- Variety of uses – A variety of uses within the Village Centre (retail, personal service, restaurants) are encourage and may contain residential units above main floor retail.

DIAGRAM 4: Connectivity

Major Roads
Local Vehicular Connectivity
Pedestrain Connectivity
Employment Centre
Village Centre
Park or Naturalized Area

ACCESS & MOVEMENT

- Vehicle and pedestrian access and circulation – The Employment Centre and Village Centre are integral parts of River Heights, and will be linked through a series of vehicular, pedestrian, bike and transit connections that are both safe and attractive.

- The Main Street will form the primary pedestrian connection through the site and will accommodate vehicular traffic in addition to pedestrians. Sidewalks may feature street trees, attractive lighting and seating opportunities to connect people from the grocery store to the heart of the Village Centre. Opportunities for cafes and patios along this route will also enliven the public or semi-public realm and make the streetscape vibrant and interesting for pedestrians.

Active frontages including cafes and shops encourage pedestrian activity through a retail street.

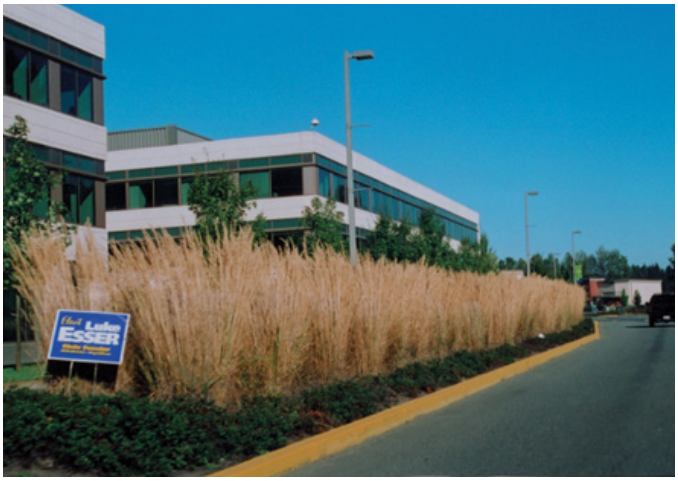
Pedestrians are connected to an anchor store through a pathway that is both inviting and separated from the adjacent parking lot.

- The Central Spine will run north-south through the Employment Centre. While offering an important vehicular connection to the southern boundary of the neighbourhood, it will also feature traffic calming and pedestrian friendly features such as bulb outs and street trees.
- The Central Link provides a significant east-west pedestrian connection. Using hard and/or soft landscaping and pedestrian oriented lighting, this link will offer an attractive and inviting pathway to connect neighbourhood residents to retail and employment opportunities, as well as the Natural Wetland Park.

Street trees, on-street parking, and architectural detail help create a pedestrian friendly environment through an employment area.

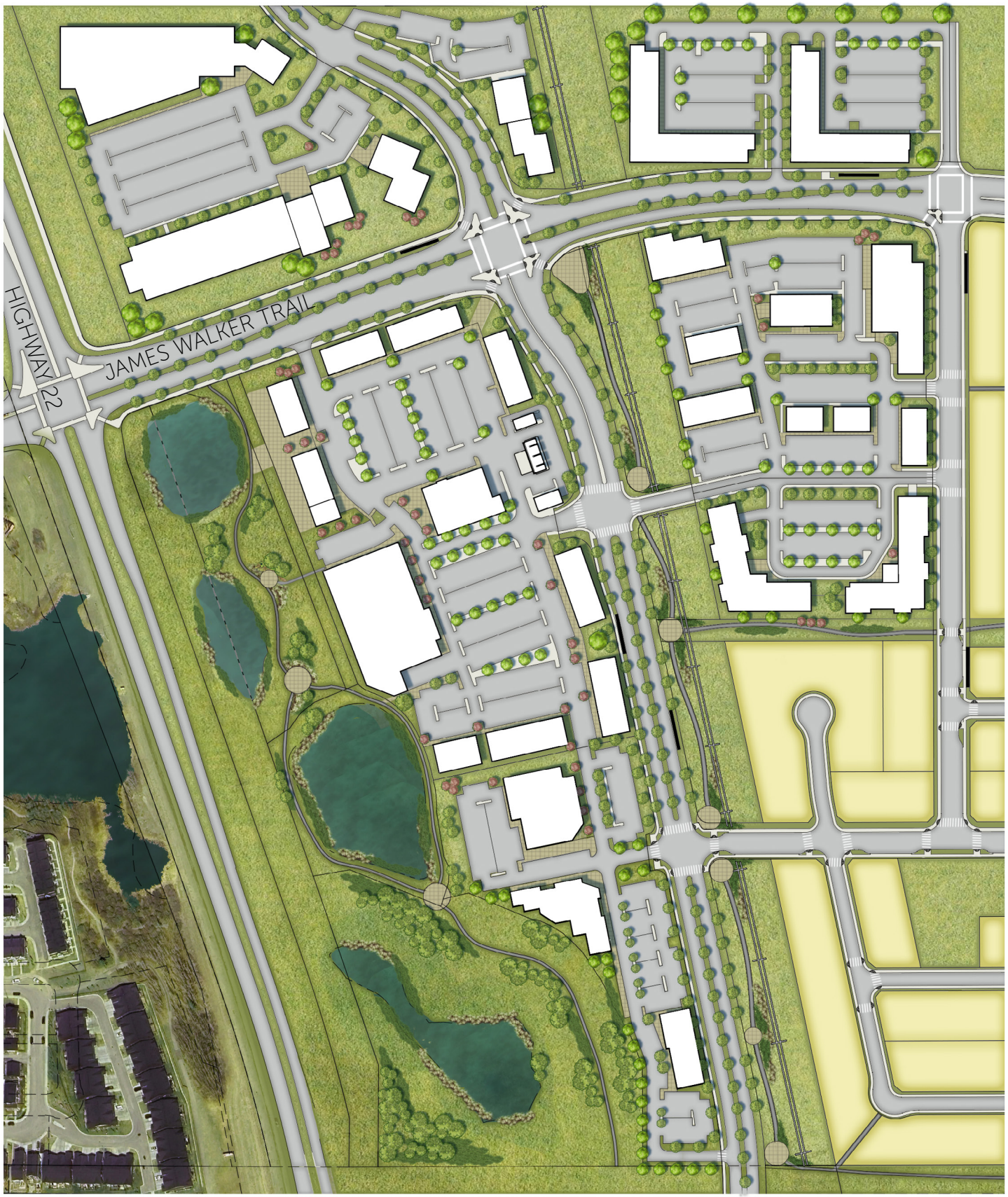
Bollards and landscaping create a safe pedestrian path

- Landscape buffers will be provided between pedestrian paths/ sidewalks and parking lot drive aisles to create a separation of uses between pedestrians and automobiles and promote safe circulation.
- Parking – non-traditional parking configurations (angle, lay-bys, behind commercial retail units, etc.) should be explored and encouraged to reduce speed and increase the pedestrian environment.



A landscape buffer provides separation and helps to screen pedestrians from the road

Figure 4.3 Employment & Village Concept



The above drawing is an artist rendering provided for illustration purposed only and is intended to illustrate one possible site layout based on the intent of the policies and does not constitute a development proposal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4.3 Housing Diversity

Southbow Landing will consist of predominantly residential land uses comprising a wide variety of housing types. Residential land uses comprise 76.61 hectares (189.33 acres), or approximately 49%, of the net developable SLNP area.

The Neighbourhood Plan organizes housing types around three interrelated principles, as outlined below.

4.3.1 Housing Principle 1: Locate density strategically

A key theme that emerged from the March 2013 workshop process was the general graduation of residential density from higher to lower moving west to east across the SLNP area. This approach has been incorporated into the Southbow Landing master plan by locating housing land uses strategically in the Plan to support:

- Creation of opportunities to integrate higher density residential typologies with the Village Centre to support a walkable, mixed-use district;
- Improved overall community walkability between residential and employment / commercial uses and neighbourhood amenities;
- Support and critical mass for commercial uses;
- Support for potential future transit in the SLNP by providing higher residential density in proximity to a potential future transit area in the Village Centre;
- Majority of density in walking proximity to two of three school sites, and to the existing Bow Valley High School;
- Lower density residential development moving towards the escarpments in the easterly portion of the Neighbourhood Plan area, with the exception of a high density multi-unit dwelling district above the Bow River escarpment adjacent to the Riversong community. This site could also potentially incorporate local commercial/ service uses in the future, depending on market conditions and the overall build-out of the SLNP.
- Lower density residential development in proximity to the south boundary of the Plan area at the urban / rural interface zone.

4.3.2 Housing Principle 2: Facilitate place-making and stronger communities through sub-neighbourhoods

Pursuant to Section 8.4.2(6) of the approved River Heights ASP, Southbow Landing constitutes a single Neighbourhood Plan providing a comprehensive master plan that adequately plans for and integrates the development, infrastructure and open space networks required to service the Plan area for all stages of development to full build-out. The SLNP master plan is designed to accommodate the development of sub-neighbourhood areas that respond to individual contexts and also function in an integrated way as part of the larger Neighbourhood Plan through common elements that unify the feel and character of the community, particularly through the open space network.

Several residential land uses are allocated throughout the Plan area to provide a range of dwelling options to suit a variety of income levels and household compositions, and to allow for mixing of residential typologies within sub-neighbourhoods and on larger blocks within the framework of the housing principles above. The SLNP will include the Town of Cochrane residential land use types described below.

Residential Mix District: comprises the majority of the Plan area to provide flexibility in the future development of blocks with semi-detached and duplex forms as well as single-detached residential units. Although the actual mixing of dwelling types within each block will be based on prevailing market conditions, semi-detached dwellings will be encouraged within single family areas at intersections. Given the larger size of corner lots, these are an appropriate opportunity for semi-detached housing as there are two frontages allowing for separate entries and positioning of garages.

In order to ensure that residential streets are attractive and welcoming to both residents and visitors, a number of measures will be considered to reduce the impact of front garages on the streetscape.

- Where possible, encourage dwellings with front drive garages to be designed with living space above the garage to achieve vertical massing at the street and to minimize the visual impact of garages.
- Front porches and/or entry features are encouraged.
- Recessed garages from the front façade are encouraged.
- Side yard driveways to recessed or rear yard garages are encouraged.
- Attached garages should be designed as an integral element of the façade, using the same materials and wall detailing as the main body of the unit.

To further ensure that all residential streets are vibrant and attractive, façade will be articulated and buildings will be sited to ensure an appropriate interface between residential and non-residential land uses in the west portion of the plan area.

In some cases, landscaping techniques and / or other physical screening interventions, orientation of uses within parcels, or other built form techniques may be required to appropriately address interfacing. Evaluation of site-specific requirements would be undertaken at the appropriate subdivision and / or development permit stages. Sections 3, 4, and 5 of the Town of Cochrane Integrated Neighbourhood Design Guidelines provide additional direction regarding principles and techniques for dealing with interface conditions.

Neighbourhood Commercial District: strategically located on a north-south block orientation at the central community entry point from James Walker Trail to define the entry with a strong urban block experience and also to break the visual continuity of James Walker Trail in this area. This use stretches toward the central green spine / central park area to continue the north-south urban entry experience into the southerly sub-neighbourhood cells.

Residential High Density District: located predominantly near the Village Centre / Employment Centre and westerly school sites and near James Walker Trail in the westerly portion of the Plan area, and a small cell in the east portion of the plan area. This use could be provided as apartment housing or Seniors Housing, particularly in proximity to the Village Centre where a higher concentration of commercial and service uses and amenities would be located and accessible by a short walk.

The following principles are intended to ensure that all multi-family developments within the neighbourhood are thoughtfully designed and provide a strong street edge that positively contributes to the pedestrian environment.

- Multi-family developments should be sited to create inviting streetscapes. Porches, balconies, stoops and other architectural details should be used to allow for passive viewing of the street, and to ensure patio and landscape areas between the street and building are useable yards.
- Parking layout should be interior to the project and placed to minimize visiblity from the street.
- Architectural detail and articulation should be used to break up large building masses to create an attractive streetscape.

Residential Low Density District: primarily in the eastern portion of the SLNP area to facilitate larger, single-detached forms on larger lots. These larger lots will provide opportunities for secondary suites and offer multi-generational living.

4.3.3 Housing Principle 3: Provide variety and choice in housing

As a comprehensively designed Neighbourhood Plan, the Southbow Landing master plan provides a range of dwelling options intended to supply a wide choice of dwelling styles that will accommodate a variety of income levels, household types and demographics throughout the Plan area. Careful attention has been paid to generally locate higher density residential uses in the westerly portion of the plan area, thereby providing greater affordability in unit choice and a concentration of population within walking distance of the greatest concentration of future employment opportunities and community amenities and services.

The majority of the residential master plan is based on a modified grid which allows the Neighbourhood Plan to develop as a logical series of sub-neighbourhood areas, providing sufficient flexibility to allocate initial mixes of housing type within each area in response to market and housing demand. As the neighbourhoods mature and evolve over time, this organizational principle allows for alternative housing arrangements and possible in-filling can occur throughout the lifecycle of the community.

The Southbow Landing Neighbourhood Plan design also provides opportunities for accessory and garden suites to be developed in the both the short and long term, as demand dictates. Based on the Cochrane Land Use Bylaw (01/2004), up to 10% of the total plan area is eligible for a secondary suite, which could further provide alternative and entry-level housing options, and opportunities to utilize developable land more efficiently.

A variety of options for affordable housing locations exists in the Plan area should a need be identified by the Cochrane Society for Housing Options, The Rocky View Foundation, or other groups / agencies.

Table 4.1 Southbow Landing Neighbourhood Plan Statistics

The Neighbourhood Plan statistics are summarized below and identify the areas and projected units for each proposed land use category.

TOTAL AREA OUTLINED	**220.76 ha**	**545.48 ac**			
***less* ENVIRONMENTAL RESERVE (PR)**	**36.58 ha**	**90.38 ac**			
***less* VOLUNTARY ENVIRONMENTAL RESERVE (PR)**	**20.68 ha**	**51.11 ac**			
***less* EXISTING PORTIONS OF JAMES WALKER TRAIL AND RIVER HEIGHTS DRIVE**	**2.08 ha**	**5.14 ac**			
***less* HIGHWAY 22 WIDENING**	**2.18 ha**	**5.38 ac**			
GROSS DEVELOPABLE AREA (GDA)	**159.24 ha**	**393.47 ac**			**100.0%**
			Frontage	Units	
RESIDENTIAL	**76.61 ha**	**189.33 ac**			**48.1%**
Low Density	**63.91 ha**	**157.94 ac**			**40.1%**
R-LD (Front Drive)	14.74 ha	36.42 ac			
Anticipated Number of Units (10.24m lot width)			4152m	405 units	
Maximum Number of Units (9.0m lot width)				461 units	
R-LD (Estate)	13.78 ha	34.05 ac			
Anticipated Number of Units (13.72m lot width)			3050m	222 units	
Maximum Number of Units (9.0m lot width)				338 units	
R-MX (Front Drive)	12.32 ha	30.43 ac			
Anticipated Number of Units (10.39m lot width)			3405m	327 units	
Maximum Number of Units (9.0m lot width)				378 units	
R-MX (Laned)	5.61 ha	13.87 ac			
Anticipated Number of Units (9.45m lot width)			1612m	170 units	
Maximum Number of Units (9.0m lot width)				179 units	
R-MX (Semi-Detached Front Drive)	6.63 ha	16.39 ac			
Anticipated Number of Units (8.14m lot width)			1841m	226 units	
Maximum Number of Units (6.7m lot width)				274 units	
R-MX (Semi-Detached Laned)	6.31 ha	15.60 ac			
Anticipated Number of Units (7.47m lot width)			1847m	247 units	
Maximum Number of Units (6.7m lot width)				275 units	
R-MX (Townhouse)	4.52 ha	11.18 ac			
Anticipated Number of Units (6.1m lot width)			1327m	217 units	
Maximum Number of Units (5.5m lot width)				241 units	
Total frontage			17,234m		
Multi-Residential/Mixed-Use	**12.70 ha**	**31.39 ac**			**8.0%**
R-M (R-HD)	9.66 ha	23.88 ac			
Anticipated number of units (100upha)				966 units	
Maximum number of units (150upha)				1450 units	
R-HD	3.04 ha	7.51 ac			
Anticipated number of units (110upha)				334 units	
Maximum number of units (150upha)				456 units	
TOTAL UNITS			Anticipated	3114 units	
			Maximum	4052 units	
DENSITY **Anticipated:**	**<u>3114 units</u>**		**Maximum:**	**<u>4052 units</u>**	
Residential Developable Area: 142.70 ha (352.59 ac) (GDA minus Employment Centre)	**142.70 ha (352.59 ac)**			**142.70 ha (352.59 ac)**	
	= 21.8 upha			**= 28.4 upha**	
	= 8.8 upac			**= 11.5 upac**	
EMPLOYMENT CENTRE	**16.54 ha**	**40.88 ac**			**10.4%**
I-G	10.87 ha	26.86 ac			
C-G	5.67 ha	14.02 ac			
VILLAGE CENTRE	**3.33 ha**	**8.22 ac**			**2.1%**
C-N	3.33 ha	8.22 ac			
OPEN SPACE	**15.92 ha**	**39.35 ac**			**10.0%**
PR (School Sites)	10.79 ha	26.65 ac			6.8%
PR (Park)	5.14 ha	12.70 ac			3.2%
PUBLIC DEDICATION	**46.83 ha**	**115.69 ac**			**29.4%**
PR (Wet Pond & Forebay)	3.44 ha	8.49 ac			
PR (PUL)	4.10 ha	10.14 ac			
Roads and Lanes	39.29 ha	97.06 ac			

4.4 Residential Density and Projected Population

The Southbow Landing Neighbourhood Plan will provide an anticipated 3,114 to 4,052 residential units in a variety of typologies. The projected residential unit density is between 22 and 28 units per gross developable hectare (8 and 11 units per gross developable acre). It is important to note that the SLNP area contains large percentages of Environmental Reserve, arterial roadway and the Employment Centre and Village Centre, which reduces the capacity for overall residential density, however the provision of several sites for the development of multi-dwelling housing land uses in the Plan area increases the potential density of the Plan area. Minor adjustments to the anticipated residential density do not require an amendment to this Plan.

Population projections for the Southbow Landing Neighbourhood Plan area are as follows:

Single and two-dwelling unit types:

3 people/household
average x 1,814-2,146 units = 5,442-6,438

Multi-dwelling unit types:

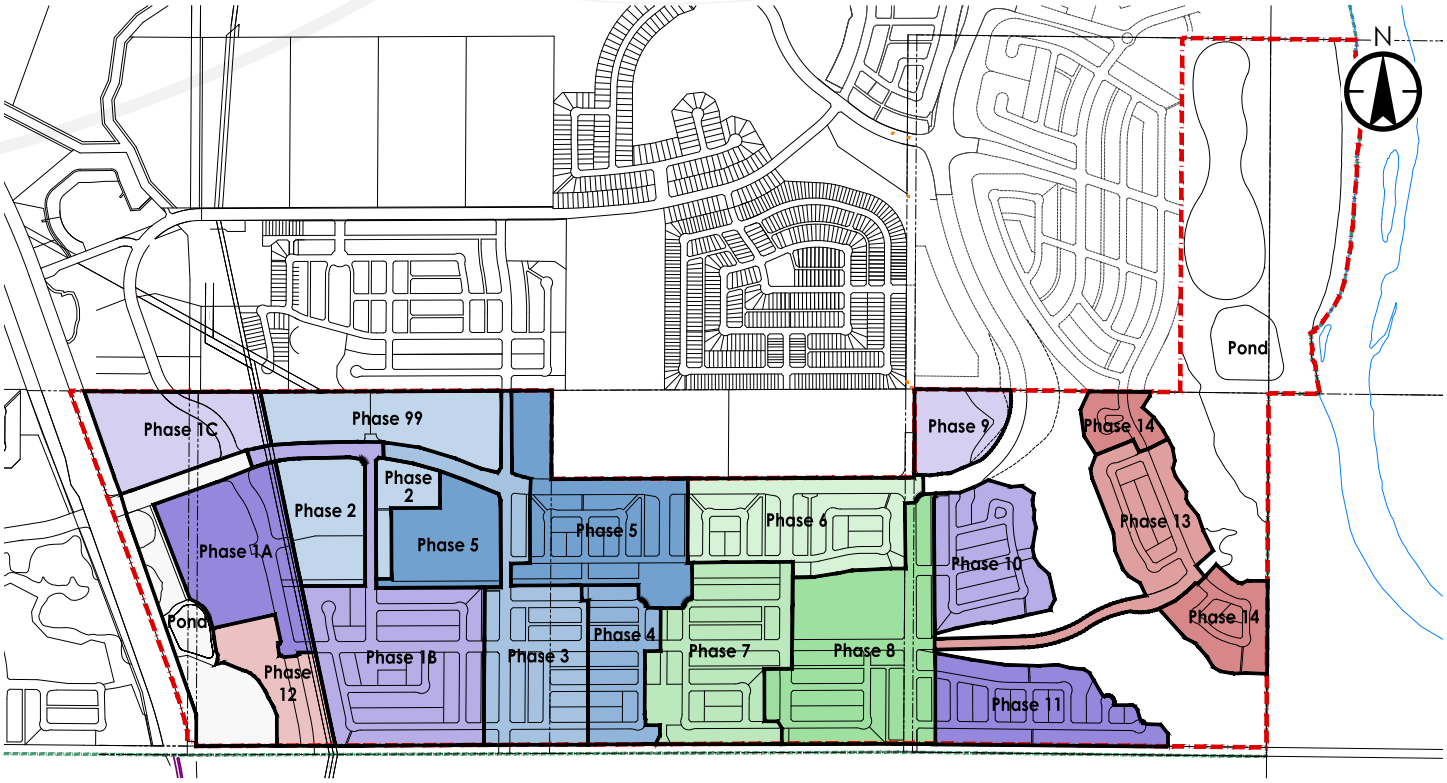
2 people/household
average x 1,300-1,906 units = 2,600-3,812

Based on the above anticipated / maximum unit counts and household size assumptions it is anticipated that the Southbow Landing Neighbourhood Plan area would have a projected population of between 8,000 and 10,200 people.

4.5 Phasing

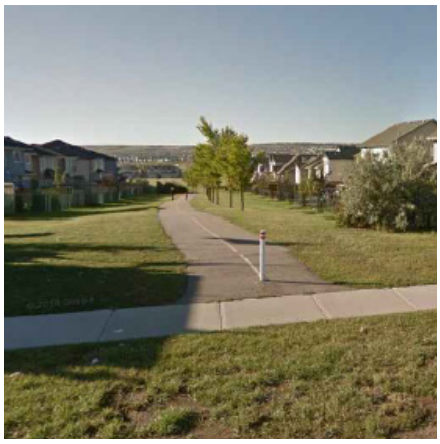
Anticipated phasing boundaries within the Southbow Landing Neighbourhood Plan are shown on **Figure 4.4**. These phasing boundaries are preliminary and may change over time as development proceeds depending on market conditions, servicing and other factors.

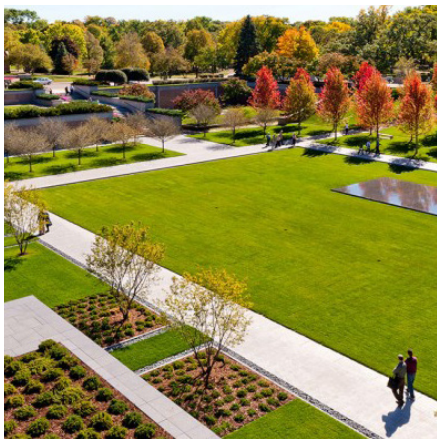
Figure 4.4 Preliminary Phasing Plan



5.0

Open Space Systems





5.1 Pathway Network

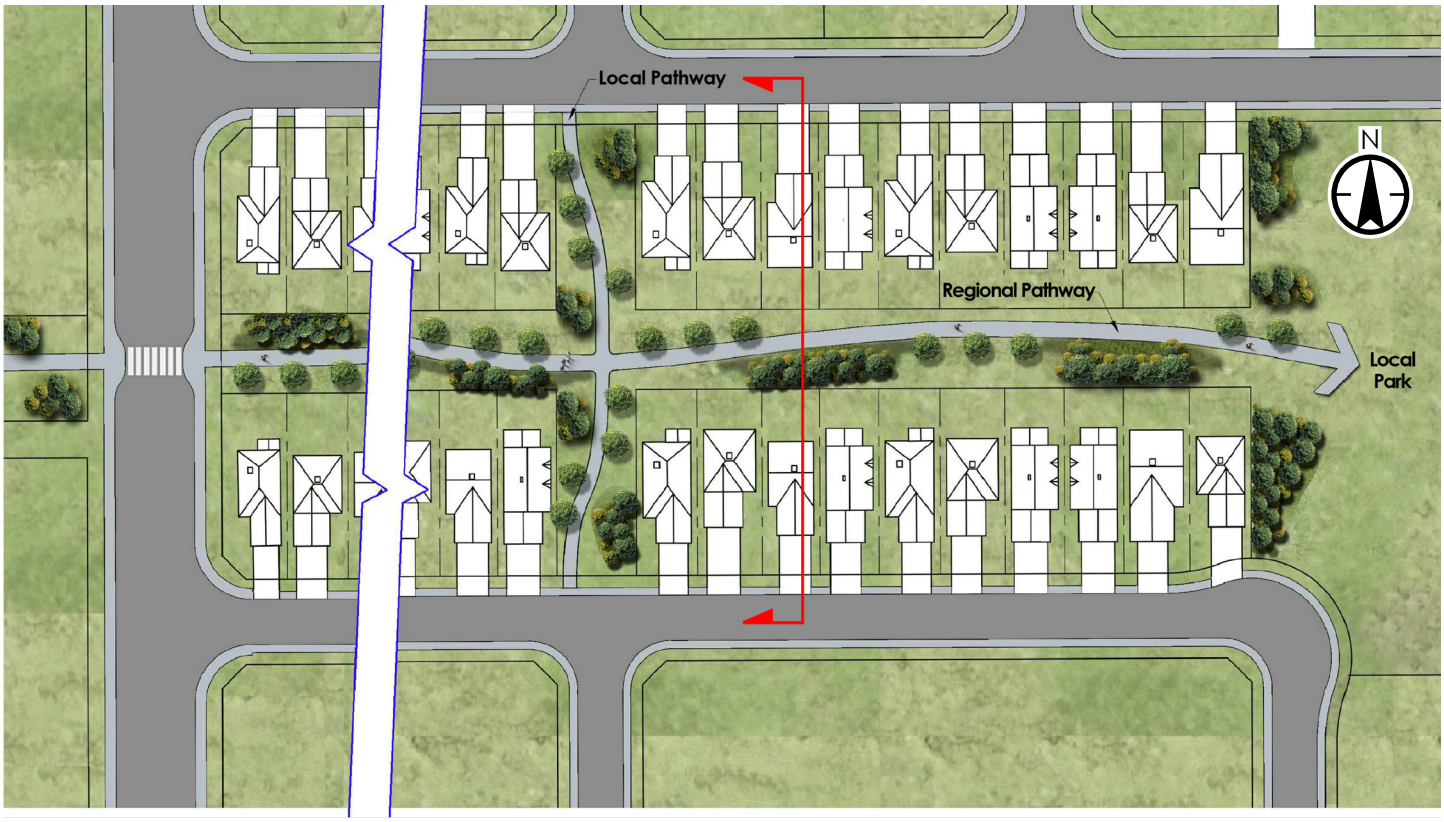
The Southbow Landing open space network is a comprehensive hierarchy of parks, pathways and streetscapes. Cochrane's residents are very active and outdoor oriented people thus it is important to provide a variety of open space amenities to foster the health and vitality of this growing community. The Cochrane Open Space master plan assisted in the programming of amenities, identifying recreation trends, and creating key linkages to Cochrane's pathway network..

The regional multi-use pathway functions as a central spine connecting pedestrians and cyclists to amenities and destinations throughout the community and to the Trans Canada Trail indicated in the Open Space Master Plan (See **Figure 5.1**). Local pathways, nature trails, and on street linkages connect the central corridor to satellite parks and natural areas. Hierarchies of pathway types that support different functions will help reduce user conflicts, promote different uses, and create interest in the community.

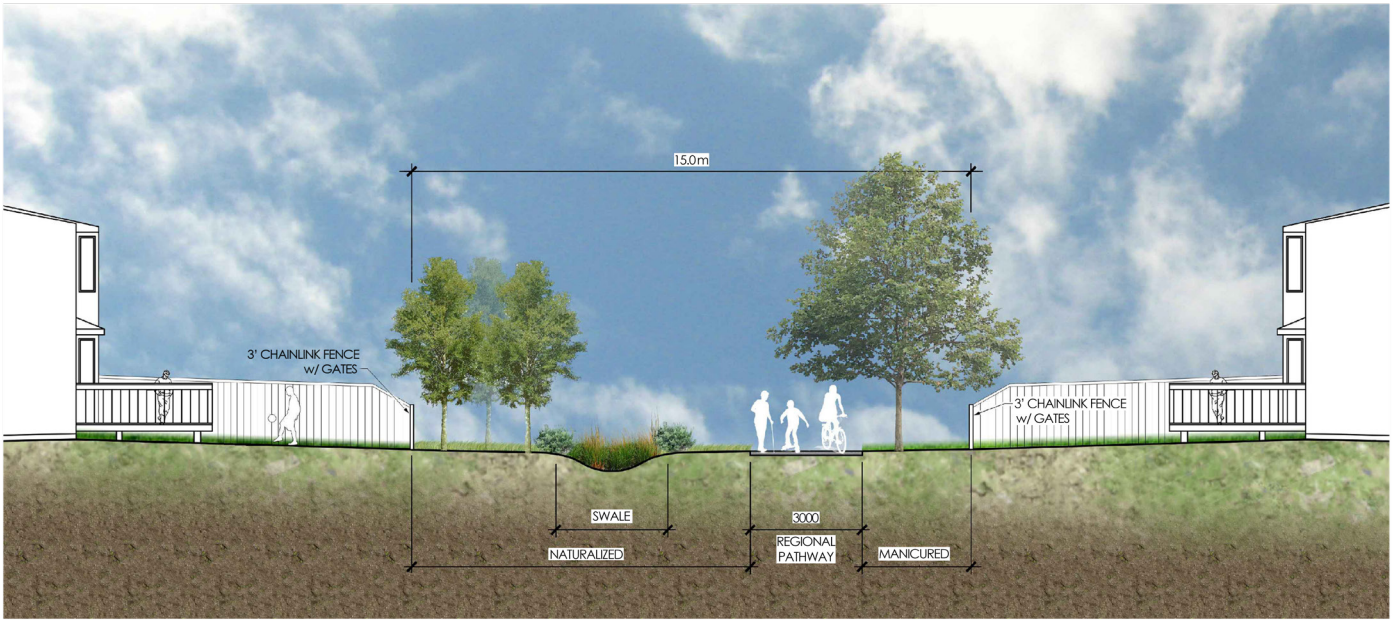
The proposed pathway hierarchy creates opportunities for additional wayfinding and interpretive elements throughout the community. Not only will this engage the local residents but also ties in with the larger vision of the Cochrane Open Space master plan and pathway network. The intent is to create an identity for the pathways so they become a destination for all Cochrane residents in addition to providing functionality and connectivity for local residents.

Many communities lack the diversity of trails to serve more restricted user groups such as mountain bikers, hikers, cross country skiers etc. The variety of slopes and natural features in Southbow Landing offer unique opportunities to create trails that cater to specific uses that may be dictated by the characteristics of the locations such as access to natural areas, steep slopes, or river edges. If these types of informal trails are planned for and accommodated within the landscape, it diminishes the desire for the restricted users to create their own trails that may be unsafe or have adverse environmental impacts.

Figure 5.1 Green Corridor Illustrative Plan



Plan View
NTS



Section View
1:150

5.1.1 Parking and Access

In order to provide access to the Town of Cochrane pathway network, as well as future access to the Glenbow Ranch Provincial Park, a parking area / trailhead may be required in the vicinity of the riverside park area and reconstructed wetland on the lower bench within the Southbow Landing plan area. This parking area/trailhead could also be located in the future development areas north and west of Southbow Landing, depending on timing and other requirements. Final location of the parking area will be based on achieving easy, regional access to the facility from the future James Walker Trail via the lower bench, elimination or minimization of grading that would impact the existing escarpment, with no regional traffic impacts on local residential roads or development cells. Should a permanent parking area and/or public regional road access not be available when required, a temporary parking lot providing public access to the voluntary ER will be established to the mutual satisfaction of the developer and Town administration until such time as formal access to the park is established.

Refer to **Figure 5.2** for a comprehensive plan of the proposed pedestrian network in Southbow Landing. Refer to **Figures 5.3** to **5.9** for cross sections and illustrations of pathway and trail functionality, location, size and surfacing materials.

5.2 Parks and Natural Areas

The intensity of use and concentration of amenities radiate from the highly accessible central park. The central park is the largest in Southbow Landing and is intended to be formal in character with active uses and manicured to a higher level than all other parks. As you move away from the community core, the parks become less formal and more natural in character in response to the surrounding context. The open spaces on the perimeter of the community are primarily preserved and enhanced natural areas consisting of unmaintained native vegetation, pristine grasslands and reconstructed wetlands. The concentration of use, formality in design character and level of maintenance all dissipate as you move away from the central park. In response to the Cochrane Open Space Master Plan, a large river side natural park is provided in the lower bench of the community that includes a variety of pathways, trails, river outlooks, rest areas, interpretive / educational opportunities, and habitat enhancements.

A wide range of amenities are disbursed throughout the parks in Southbow Landing to encourage all demographics to use the park spaces and ultimately promote health and vitality in the community. Some of these amenities may include sheltered gathering areas, active recreation facilities such as sports fields or courts, traditional playgrounds and natural play features for range of youth, river outlooks, open lawns for passive recreation and picnicking, community gardens and a variety of pathways to accommodate different user groups. Off leashed dog areas are located along the east side of River Heights drive within the AltaLink Right of Way and the south perimeter of the community within the naturalized rural - urban interface so that valuable park land is not diminished within the core of the community.

One of the greatest features of a community like Southbow Landing is the immediate access to nature. Rolling prairie hills, native tree stands, preserved wetlands and a river ecosystem provide tremendous recreational, interpretive, and educational opportunities. Creating appropriate access and planning for pathway development is essential. Enhancing wildlife habitat and viewing opportunities may be achieved by providing low impact informal trails and viewing areas. Natural areas are not intended for high concentrations of use and high volumes of users, thus the access and trail development should be responsive. The Cochrane Open Space Master Plan identifies a Bow River pathway that connects adjacent communities along the Bow River. This pathway has been accommodated in the Southbow Landing neighbourhood plan and is intended to be the primary multi-use, hard surface pathway within the riverside park area.

Refer to **Figure 5.11** for a comprehensive plan illustrating the proposed open space program.

Refer to **Figures 5.11** to **5.17** for preliminary concepts for the individual open space areas.

5.3 Addressing the Rural / Urban Interface

The south interface of Southbow Landing requires careful treatment to create a transition between the community and the adjacent ranch lands in Rocky View County. An undeveloped 20m road allowance, which has been closed, is located within the Town immediately south of the Neighbourhood Plan area and will act as a naturalized buffer between urban development in the Town and agricultural uses in Rocky View County (see **Figure 5.9**). This will be achieved by utilizing the road allowance to relocate a portion of the existing AltaLink power transmission line, further delineating the space as a clear boundary zone between urban and rural areas. A local pathway will offer residents a naturalized experience of the prairie landscape without encroaching on the adjacent ranch lands, and will be linked to the pedestrian pathway system and off-leash dog park in the SLNP. The natural landscape buffer would also connect to a number of local neighbourhood parks within the community. Some landscaping could be introduced in this area to enhance the buffer characteristics. The natural landscape buffer would also connect a number of local neighbourhood parks on the perimeter of the community. It is anticipated that the relocation of a portion of the existing AltaLink power transmission line through the Plan area could also be accommodated within this road allowance, further delineating the space as a clear boundary zone between urban and rural areas.

Figure 5.2 Neighbourhood Pedestrian Network

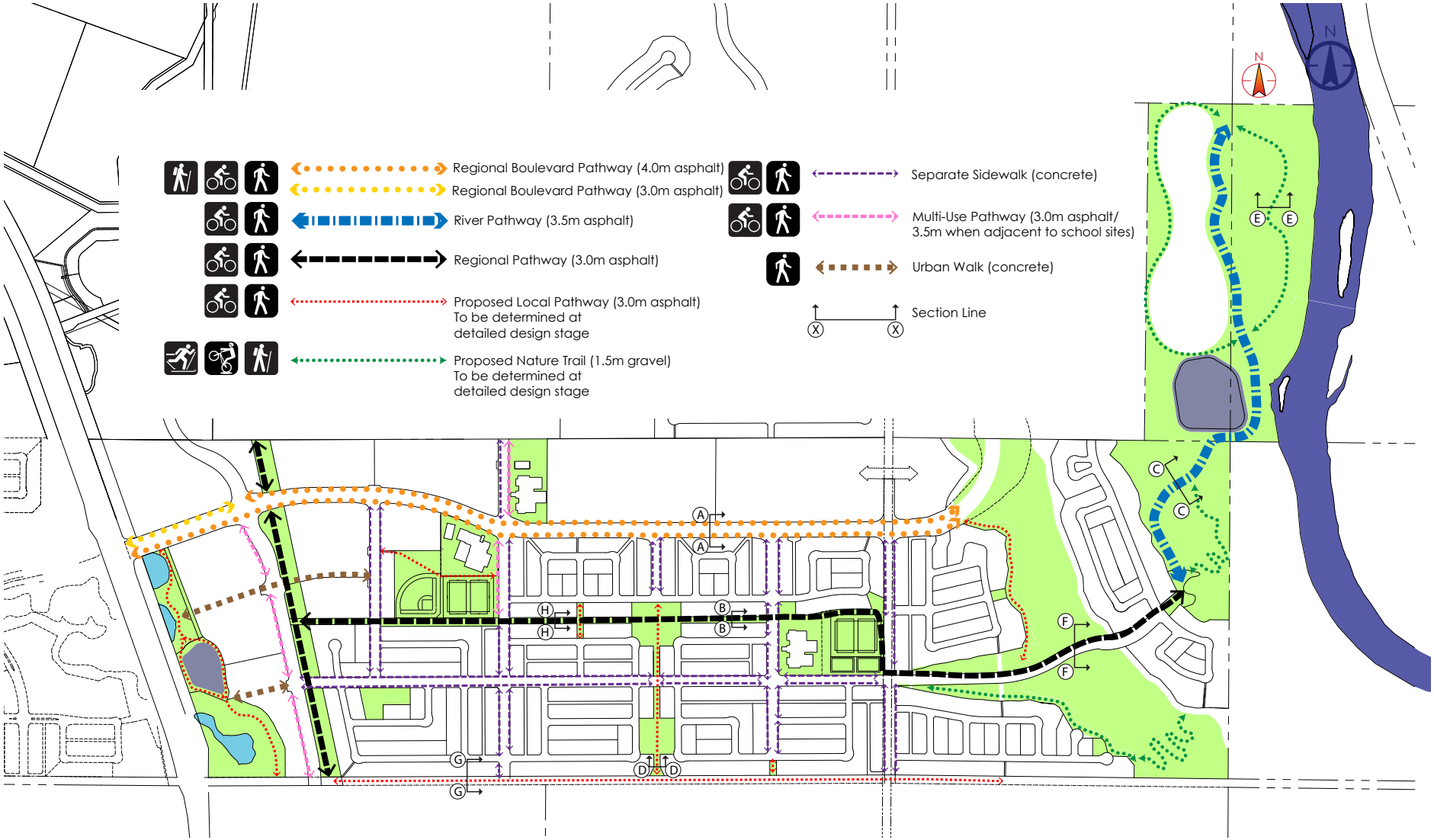


Figure 5.3 4.0m Asphalt – Regional Blvd. Pathway – James Walker Trail (A-A)

Function

- To accommodate potential low volumes of recreational use and higher volume commuting
- To accommodate a wide range of commuter abilities
- To link major community facilities
- Designed to be multi-use such as cycling, walking, wheelchairs, strollers, skateboarding, in-line skating and scooters
- Designed to minimize user conflict
- Designed to minimize conflict with vehicles

Location

- Boulevard paths along major road corridors connection residential areas with open spaces, schools, commercial and business areas

Size

- Typical standard is 4.0m wide pathway plus a 1.0m safety clearance on each side

Surfacing Material

- Hard, smooth surface such as aphalt or concrete

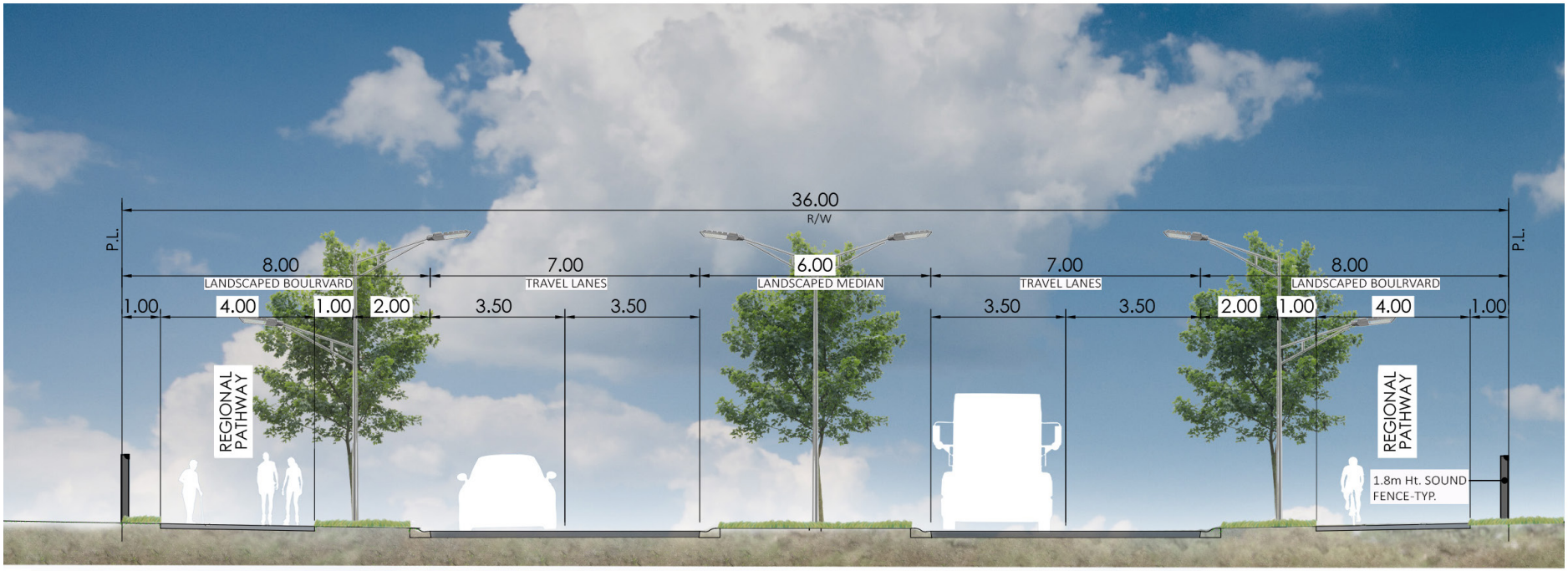


Figure 5.4 3.0m Asphalt – Regional Pathway (B-B)

Function

- To accommodate potential high volumes of recreational use and lower volume commuting
- To accommodate a wide range of commuter abilities
- To link major community facilities
- Designed to be multi-use such as cycling, walking, wheelchairs, strollers, skateboarding, in-line skating and scooters
- Designed to minimize user conflict
- Designed to minimize conflict with vehicles

Location

- Connects major community facilities through open space corridors

Size

- Typical standard is 3.0m wide pathway plus a 1.0m safety clearance on each side

Surfacing Material

- Hard, smooth surface such as asphalt or concrete

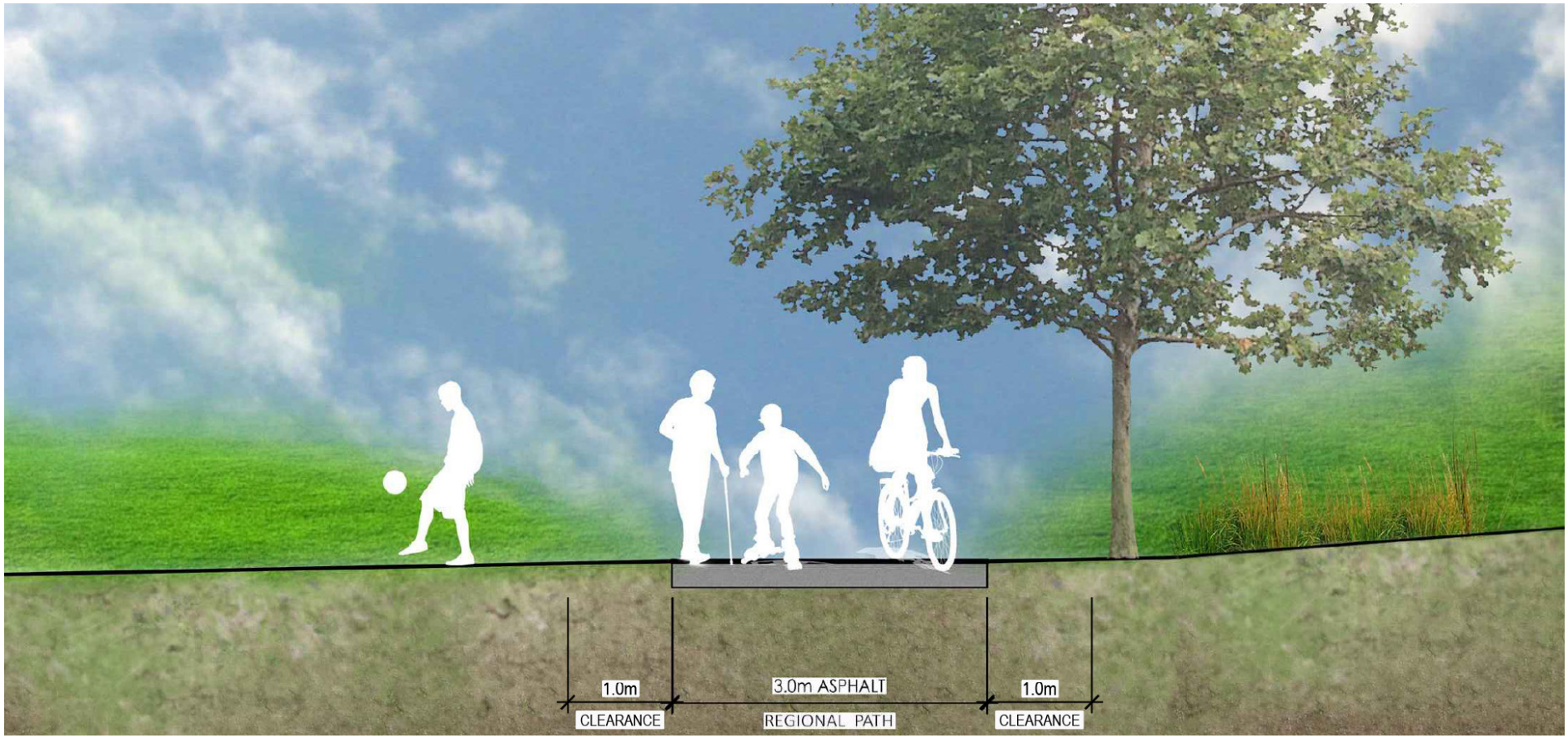


Figure 5.5 3.5m Asphalt – Regional River Pathway (C-C)

Function

- To accommodate potential high volumes of recreational use and lower volume commuting
- Provides connections to multi-use regional pathway
- To accommodate a wide range of commuter abilities
- To link major community facilities and adjacent communities
- Designed to be multi-use such as cycling, walking, wheelchairs, strollers, skateboarding, in-line skating and scooters
- Designed to minimize user conflict
- Designed to minimize conflict with vehicles

Location

- Connects major community facilities through river corridors

Size

- Typical standard is 3.5m wide pathway plus a 1.0m safety clearance on each side

Surfacing Material

- Hard, smooth surface such as asphalt

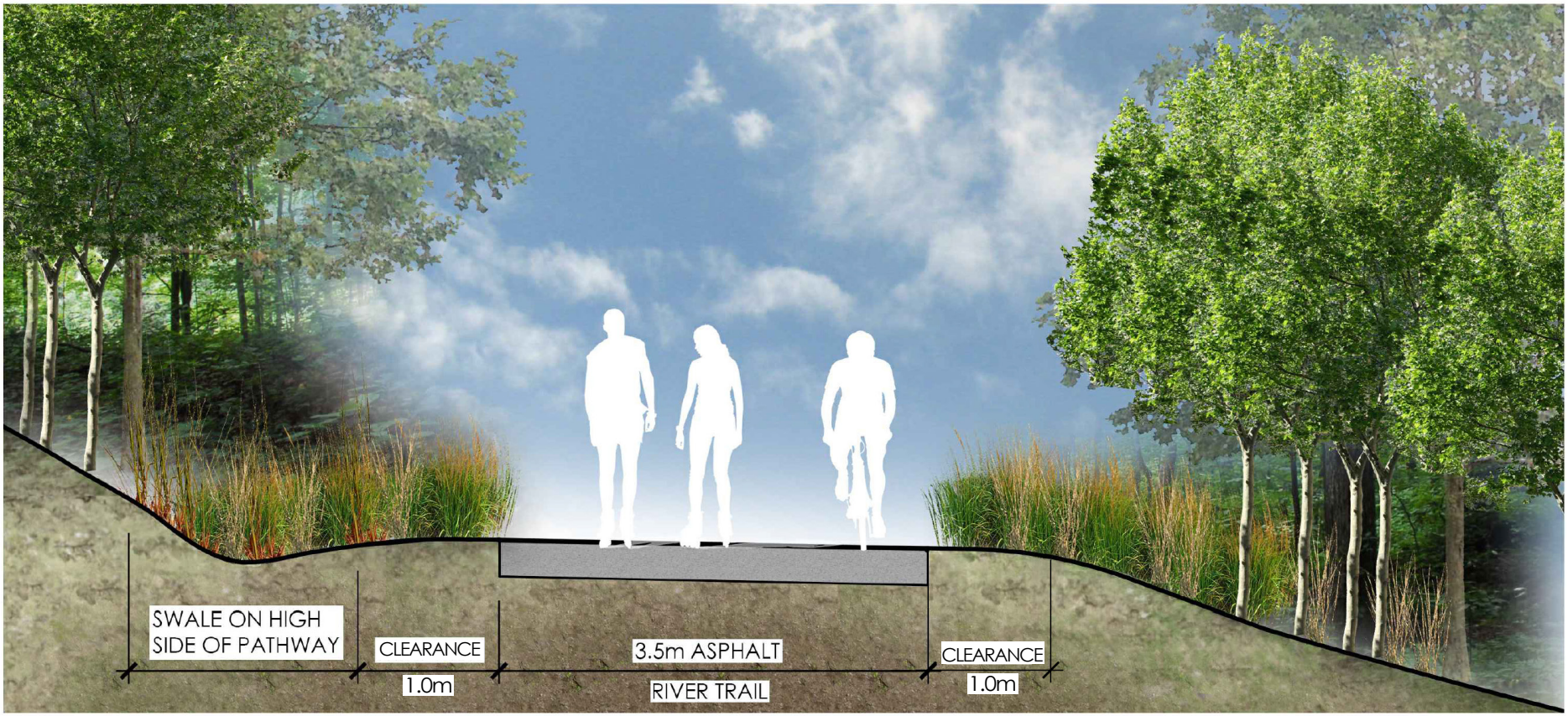


Figure 5.6 3.0m Asphalt – Local Pathway (D-D)

Function

- Intended to connect commuter pathways to adjacent communities, shopping, employment and open space areas
- To provide alternate routes to commuter pathways
- Connects routes for users wanting to access the commuter system
- Not intended to accommodate the same level of use as commuter pathways
- Cycling is permitted but not emphasized
- To accommodate traffic that is locally oriented
- Creates local neighborhood or community recreational loop opportunities

Location

- Access to points of interest
- Connecting routes to the commuter pathway system

Size

- Design standard varies depending on the location
- Typically 3.0 m width plus 1.0m safety clearance on each side
- May connect with sidewalks for on street pathway connection

Surfacing Material

- Surfaces vary depending on location, serviceability considerations and the specific application
- Asphalt pathway or granular trail connectors
- May be concrete where pathway connects with sidewalks for on-street connections

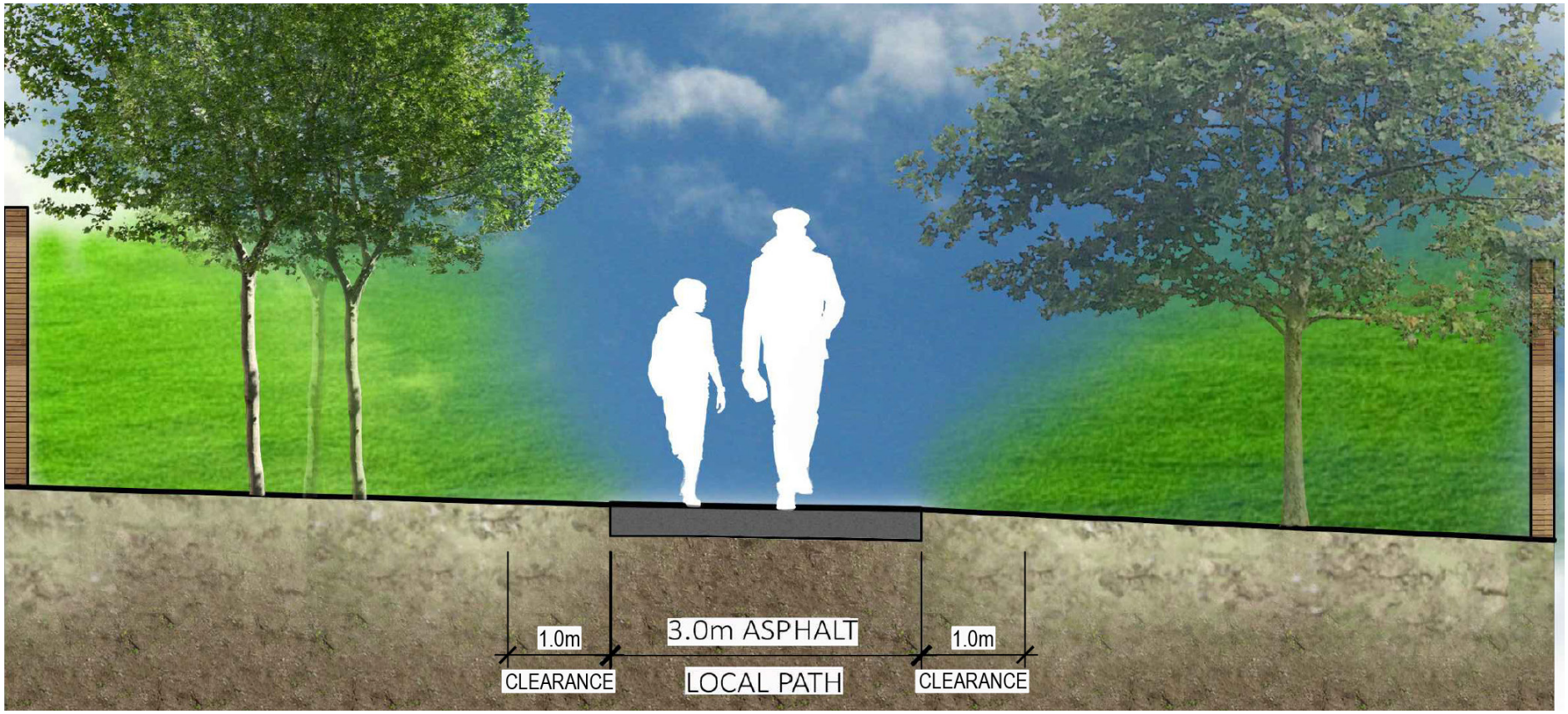


Figure 5.7 1.5m Gravel – Nature Trail (E-E)

Function

- To interconnect park and recreational uses with residential communities along routes of scenic, natural, historic, geologic, or water-oriented interest
- Not designed for expeditious commuting
- Provide opportunities for more strenuous activities
- Serve a more restricted set of user groups, often with specific needs (ie; mountain bikers, hikers)

Location

- Cater to specific uses that may be in part dictated by the characteristics of the location (e.g. running and hiking, mountain bike trails)
- Provide access to natural areas
- Access to areas with steep slopes

Size

- Nature trails may vary in size based on use
- Typically single track trails
- Standard width is 1.5m plus a 0.5m safety clearance on each side

Surfacing Material

- May vary between wood chips, stone fines, or a gravel clay trail mixture depending on trail use and location

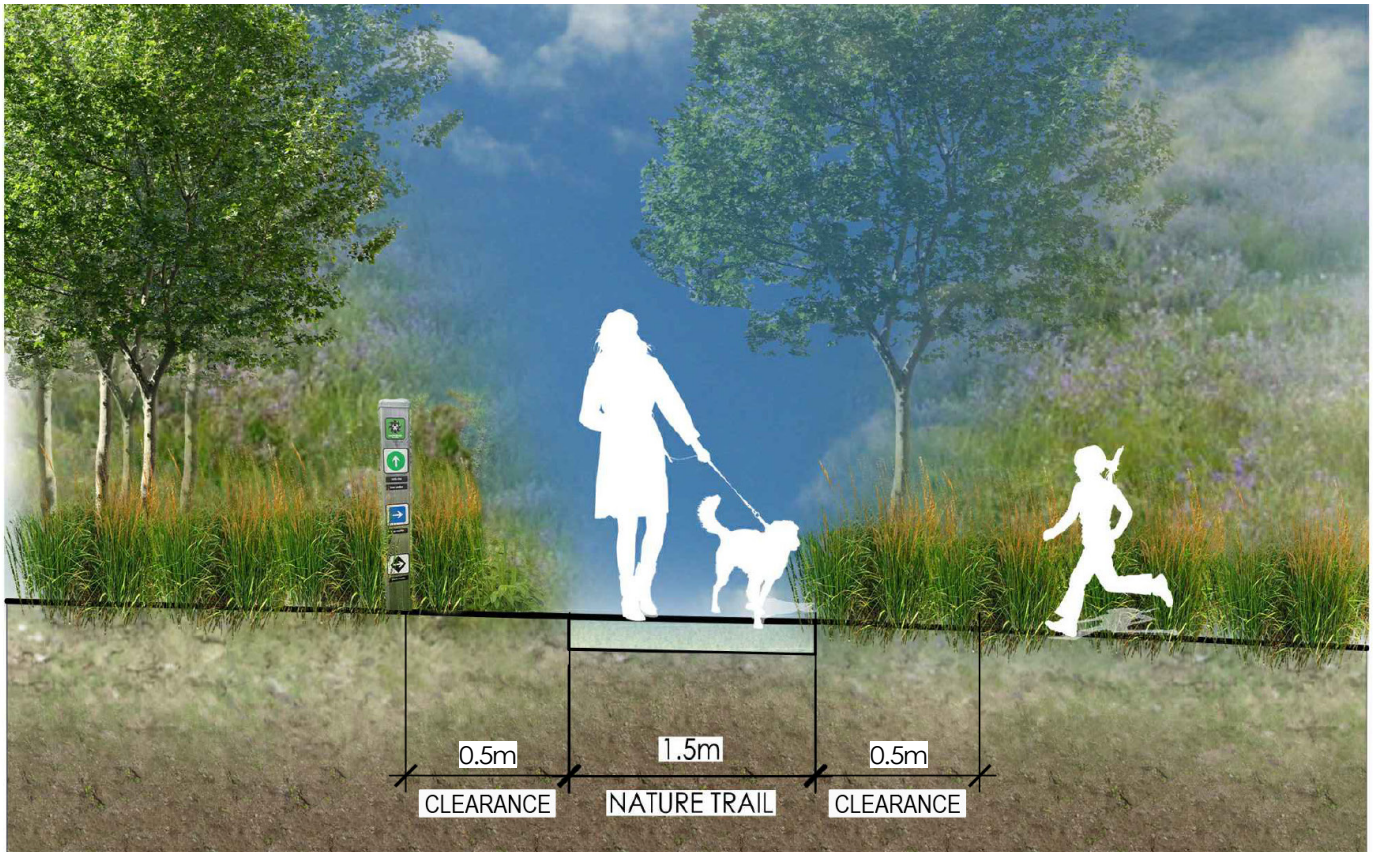


Figure 5.8 3.0m Asphalt – Regional Blvd. Pathway (F-F)

Function

- To accommodate potential high volumes of recreational use and lower volume commuting
- To accommodate a wide range of commuter abilities
- To link major community faculties
- Designed to be multi-use such as cycling, walking, wheelchairs, strollers, skateboarding, in-line skating and scooters
- Designed to minimize user conflict
- Designed to minimize conflict with vehicles

Location

- Boulevard paths along major road corridors connection residential areas with open spaces, schools, commercial and business areas

Size

- Typical standard is 3.0m wide pathway plus a 1.0m safety clearance on each side

Surfacing Material

- Hard, smooth surface such as asphalt or concrete

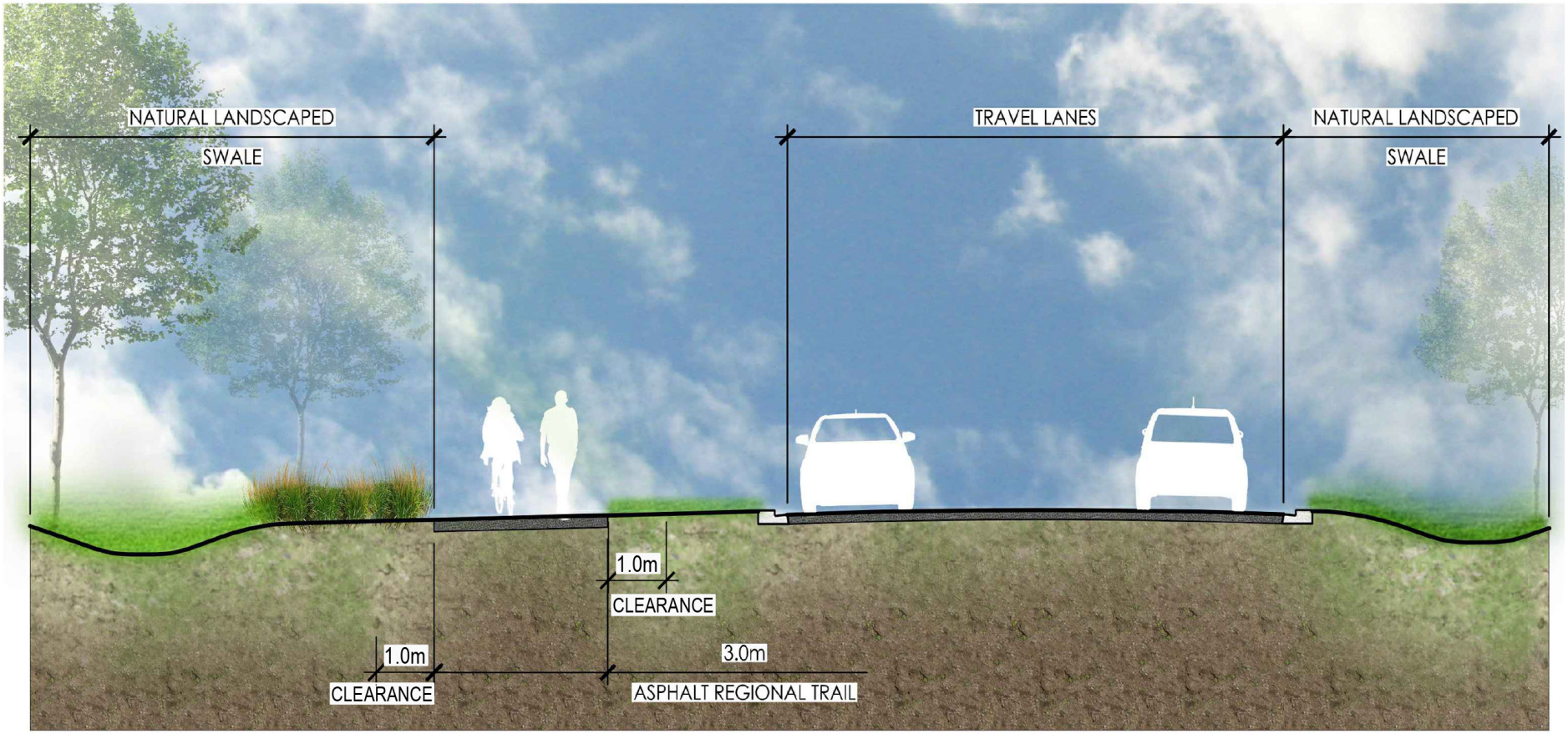


Figure 5.9 3.0m Greenway Local Pathway – Rural / Urban Interface (G-G)

Function

- To interconnect park and recreational uses with residential communities along routes of scenic, natural, historic, geologic, or water-oriented interest
- Not designed for expenditious commuting
- May provide opportunities for more strenuous activities
- Serves a more restricted set of user groups, often with specific needs (ie: mountain bikers, hikers, off-leash dog park users)

Location

- Cater to specific uses that may be in part dictated by the characteristics of the location (ie: running and hiking, mountain bike trails, dog park)

Size

- Typically single track paths
- Standard width is 3.0m plus a 1.0m safety clearance on each side

Surfacing Material

- Hard, smooth surface such as asphalt

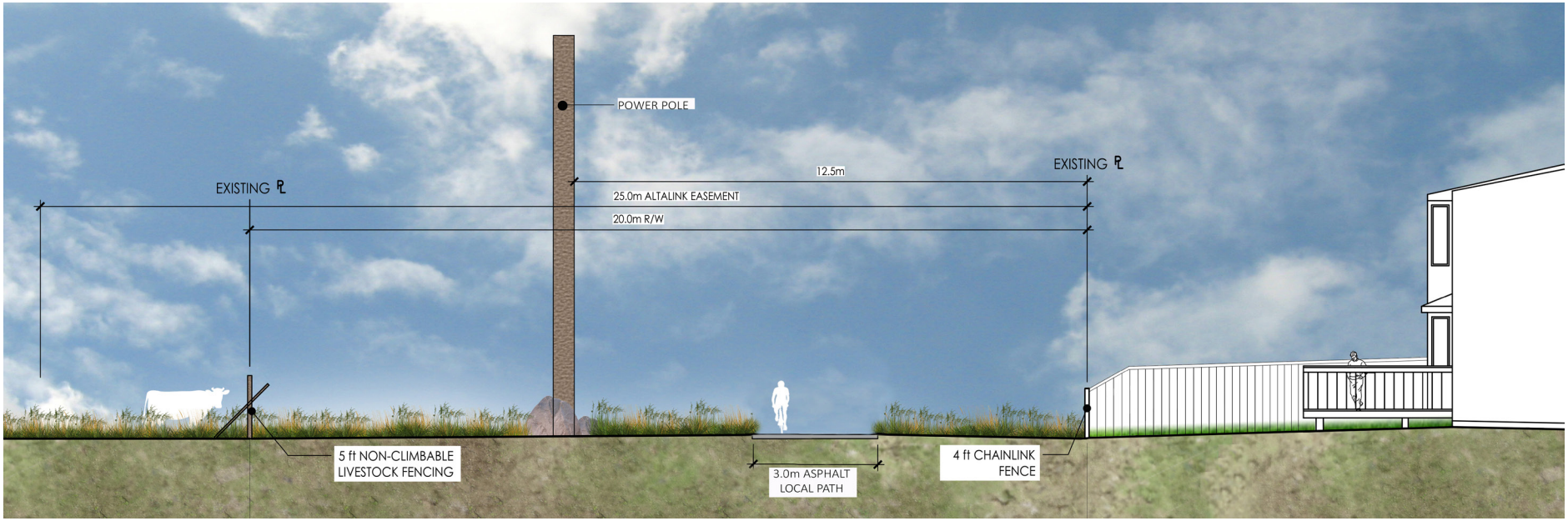
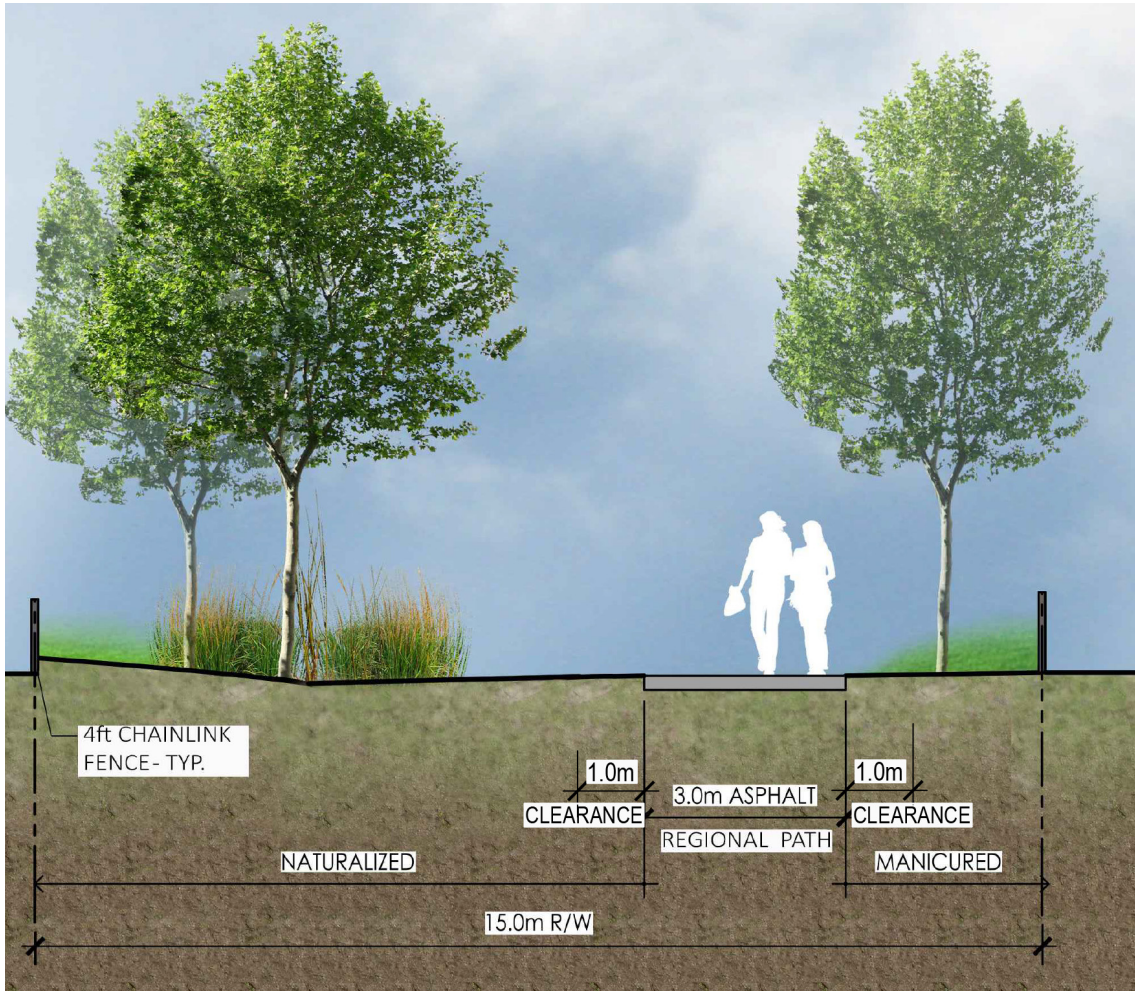
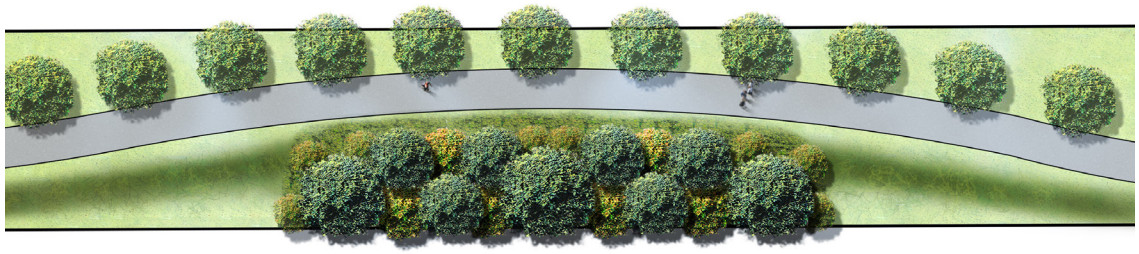


Figure 5.10 Linear Park - Regional Pathway (H-H)





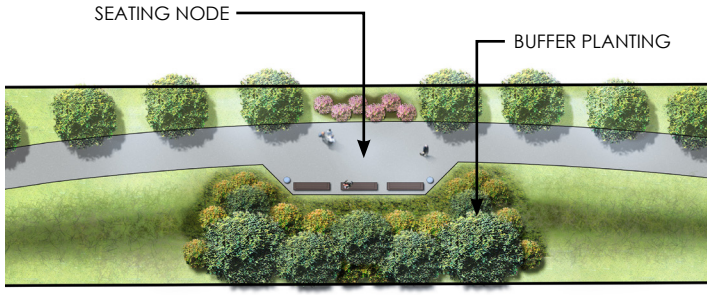


Figure 5.11 Open Space Features & Site Amenities

Figure 5.12 Preserved Wetlands Area

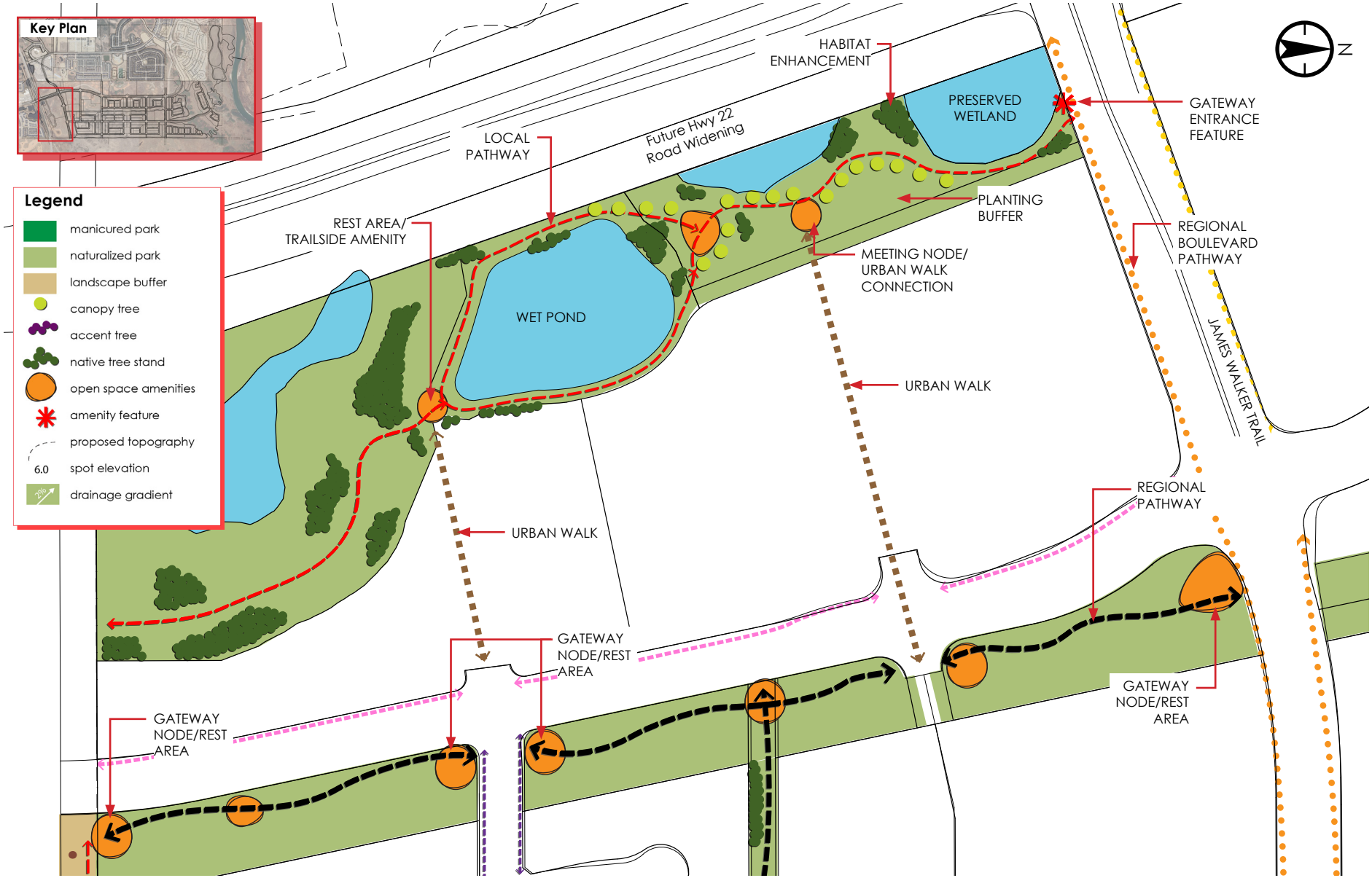


Figure 5.13 School Park Area

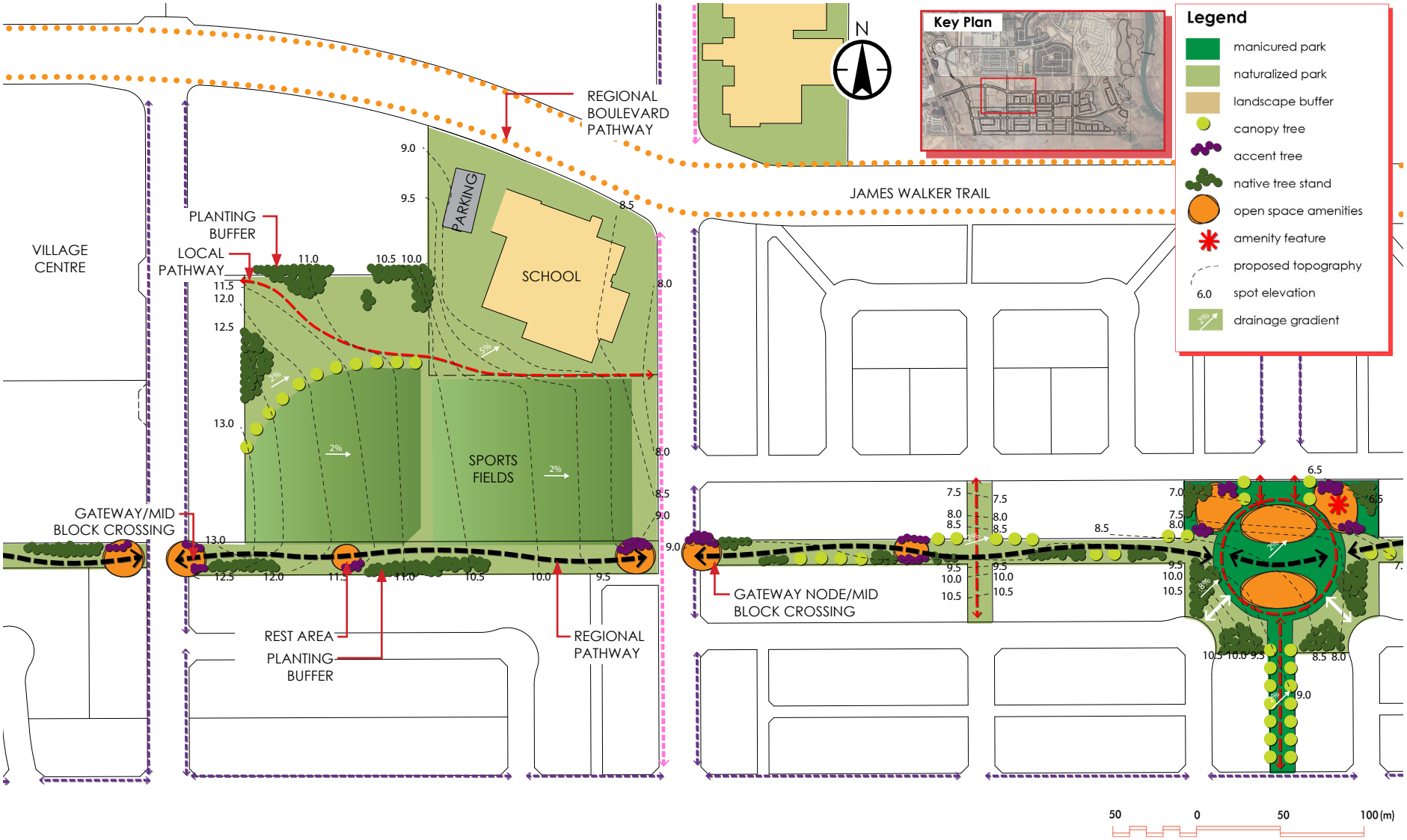


Figure 5.14 Central Parks Area

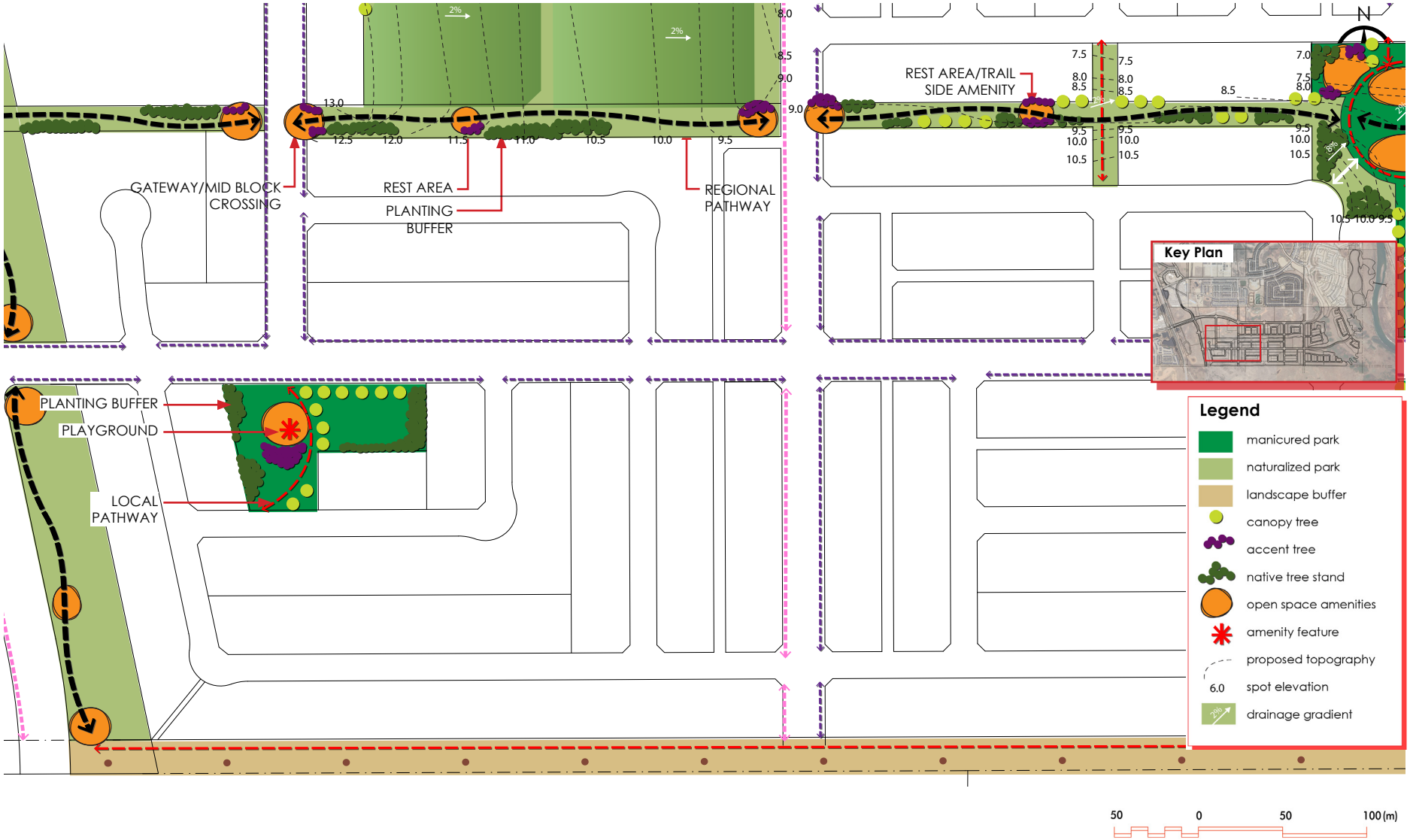


Figure 5.15 School Park & Preserved ER Area

Figure 5.16 Riverside Park Area

Figure 5.17 Wetlands & Riverside Park Area

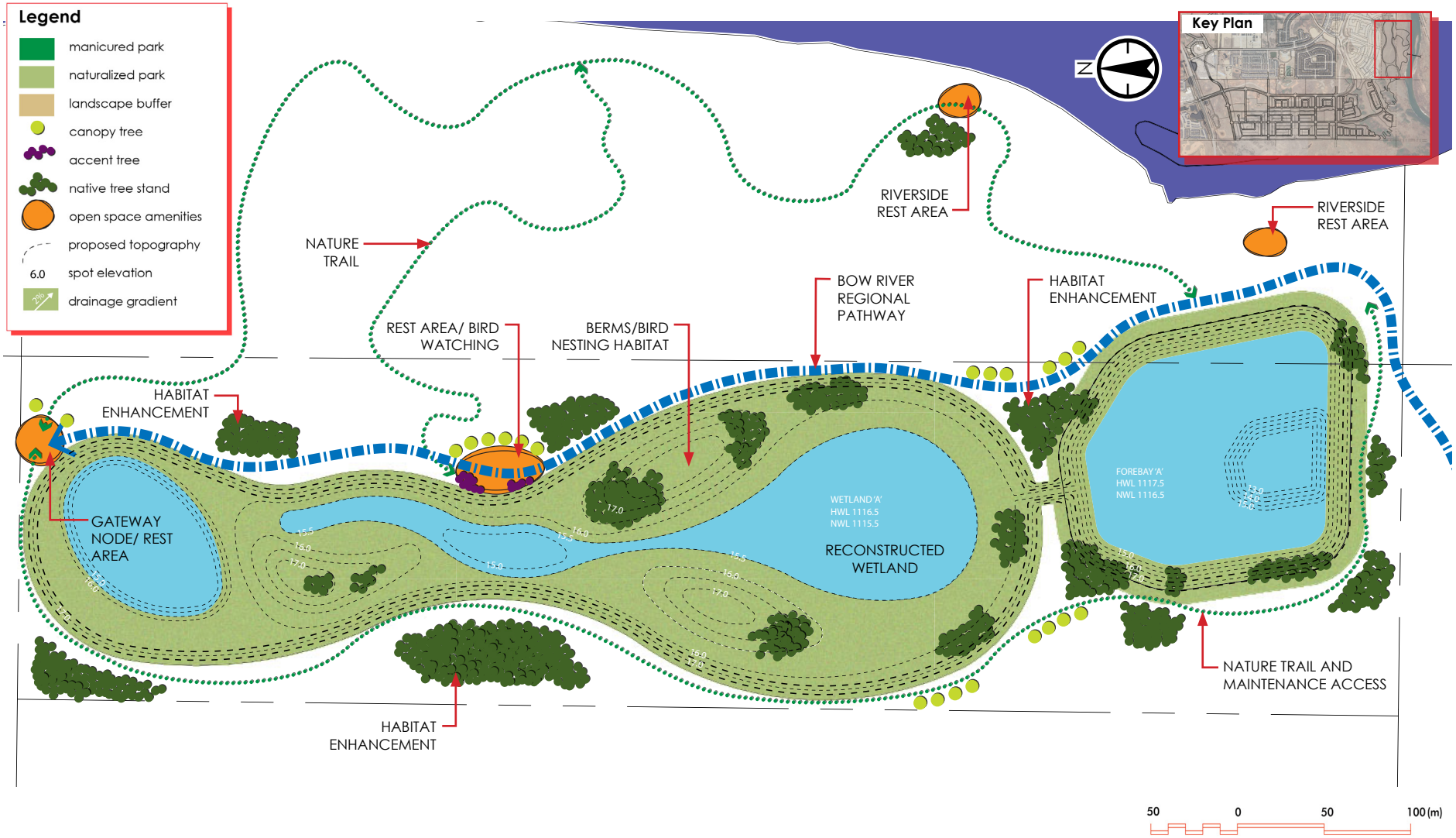
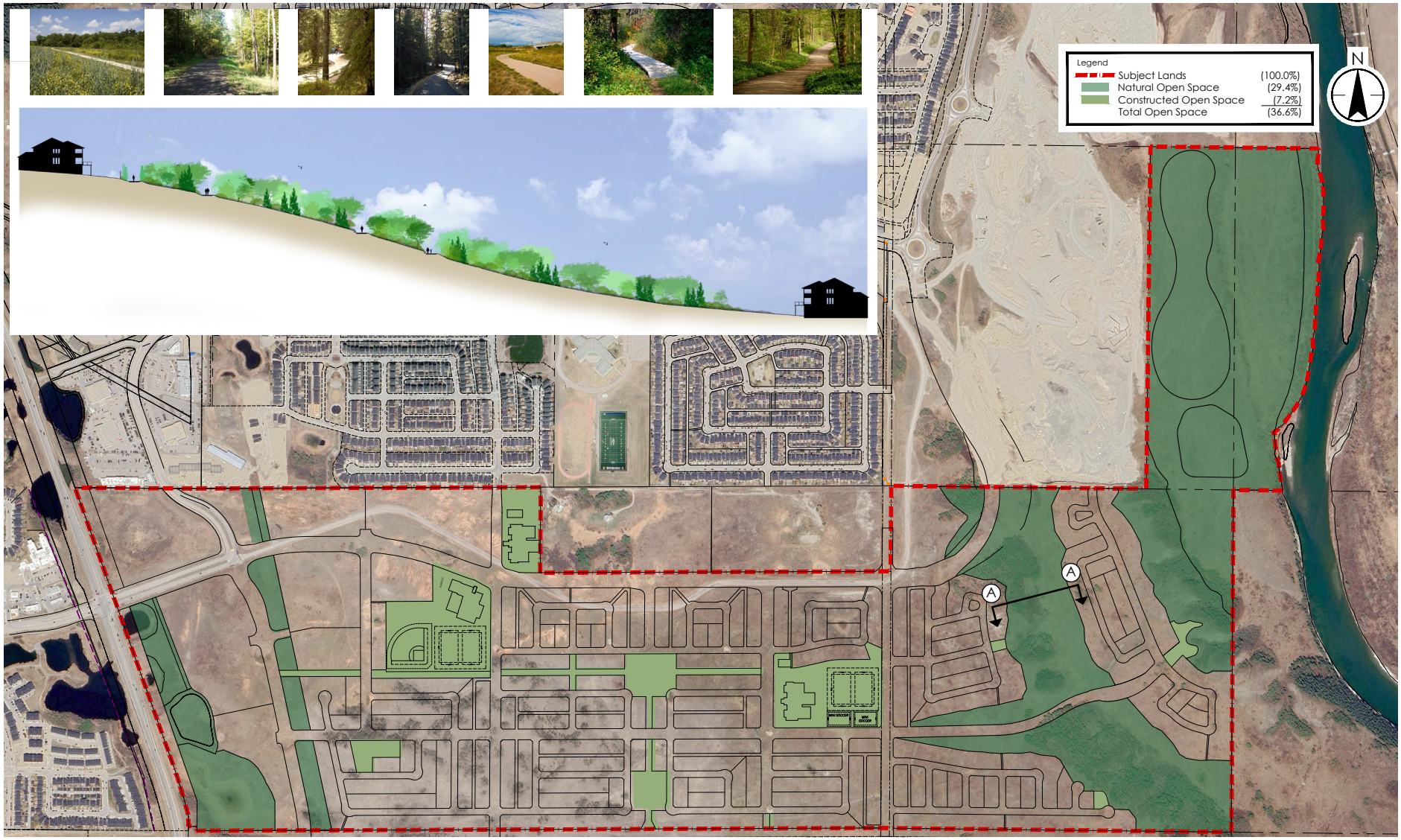


Figure 5.18 Escarpment Natural Area



6.0

Natural Areas Integration

Southbow Landing takes an integrated approach to natural systems. South Cochrane contains a rich variety of natural features, from the beautiful and environmentally sensitive Bow River Valley, and the natural escarpment, to the rolling knob and kettle terrain dotted with aspen stands and wetlands. As a tribute to this rich endowment on the land, Southbow Landing will be thoughtfully designed to make a significant contribution to environmental stewardship in Cochrane.

Southbow Landing will feature naturalized stormwater management facilities; restored native landscapes; green streets and boulevard trees for song bird and small animal habitat; accommodation for potential LID measures and bioswales as part of the open space system; and natural and manicured open spaces. The Southbow Natural Areas Plan was developed to further support natural area integration and is an appendix to this Neighbourhood Plan

6.1 Riverfront Nature Park

Southbow Landing will make a significant contribution of over 70 acres of land towards a Riverfront Nature Park to steward the environmentally sensitive Bow River Valley. The Bow River forms a regionally significant ecological corridor supporting the movement and dispersion of flora and fauna. The Riverfront Nature Park can act as an educational opportunity for students through unique programming that can be undertaken with the Cochrane Environmental Action Committee and Rocky View Schools.

The Riverfront Nature Park will allow a formalized connection between Cochrane and Glenbow Ranch Provincial Park through a pedestrian and cycling bridge that will be built at the discretion of Alberta Environment and Sustainable Resource Development.

6.2 Wetlands

Southbow Landing understands the important high quality ecological goods and services provided by wetlands on the landscape. These include but are not limited to biodiversity and ecological health, water quality improvements, hydrologic function, and social, recreational and educational opportunities.

A total of 66 wetlands were identified, assessed and classified within the Southbow Landing lands. These wetlands range from Class 1 Ephemeral Ponds to Class IV Semi-permanent Ponds. Wetlands are concentrated in the western half of the Southbow Landing lands, within grazed rangelands. As a result, many of the wetlands within the site have been accessed by livestock and grazed. Individual wetlands are proposed to be removed as part of the Neighbourhood Plan development.

6.2.1 Natural Wetland Park and Symbolic Gateway

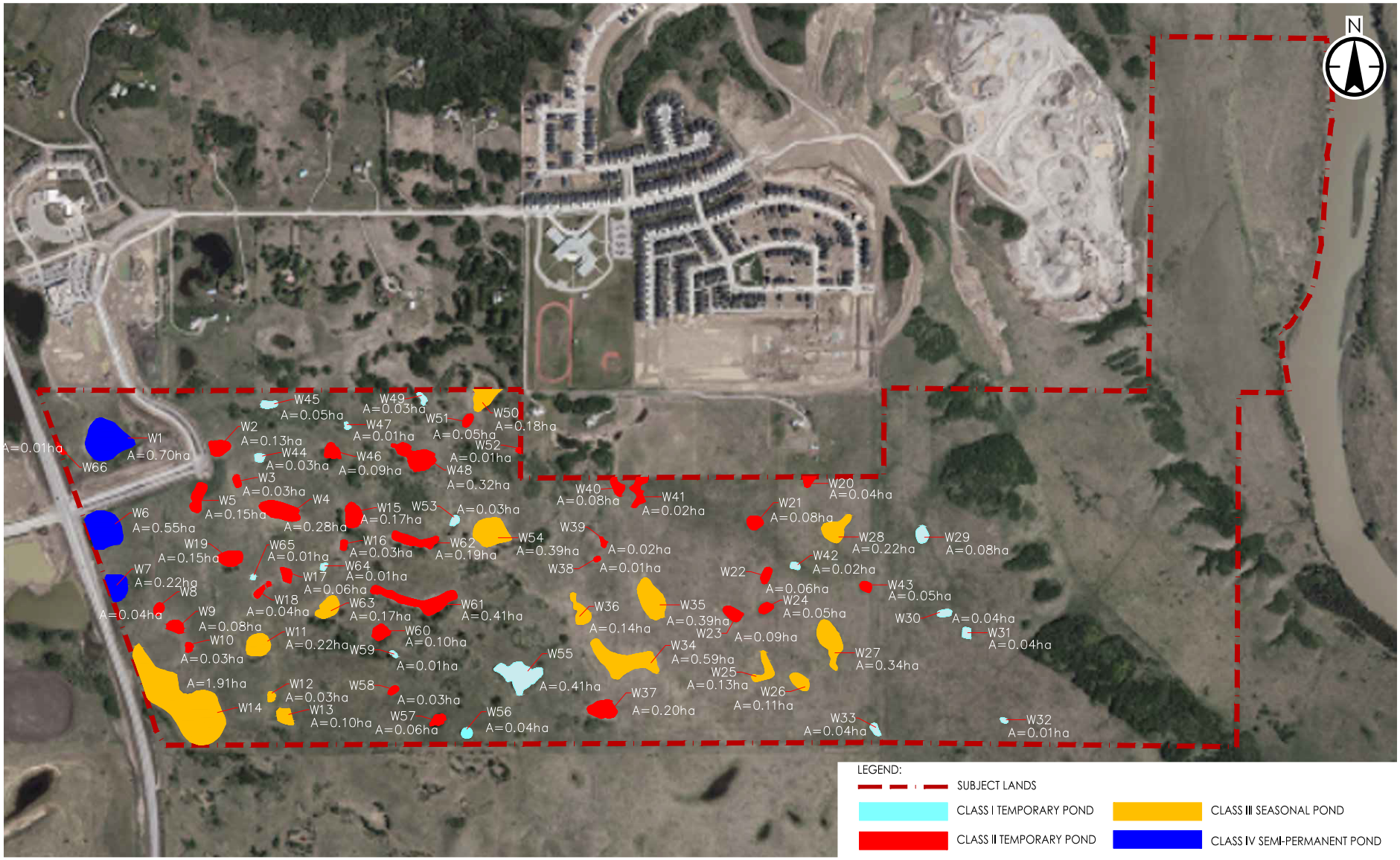
Class IV Semi-permanent Ponds near/on the western border of the site have been identified as environmentally significant and will be incorporated into Environmental Reserve within the proposed development as a Natural Wetland Park. A wetland retention and monitoring plan will be implemented to ensure Wetland 6 and 7 will retain their ecological functions. Both wetlands will remain semi-permanent marshes with Class IV status adjacent to Highway 22. The retained wetlands will have no direct discharge from the adjacent Pond D.

The proximity of this Wetland Park to Highway 22 and the urban border at the edge of Town allows them to play a prominent role as a gateway feature for the Town of Cochrane. The Natural Wetland Park will become an iconic gateway for the Town of Cochrane, reinforcing the community's resolute commitment to be stewards of the natural environment it resides in.

6.2.2 Riverfront Nature Park Constructed Wetland

To mitigate the loss of wetlands in the central area of Southbow Landing, a large constructed wetland with high functional value shall be constructed within the Riverfront Nature Park. This constructed wetland will be developed to provide higher quality ecological goods and services than the degraded wetlands being removed. In doing so, Southbow Landing will endeavor to balance the wetland function lost in the central area with this restoration work.

Figure 6.1 Wetlands and Waterbodies



The constructed wetland will be fed by stormwater from a naturalized storm pond adjacent to it on the lower bench. This enhancement of wetland habitat within the Riverfront Nature Park will increase the biodiversity within the Bow River Valley and further contribute to restoring a healthy and vibrant ecosystem in an urban area.

Wetland locations and classifications are illustrated on **Figure 6.1**.

6.3 Tree Stands

The Bow River Valley is recognized as an Environmentally Significant Area and is an important wildlife corridor for the region which contains key habitat for wildlife. Extensive coniferous and mixed wood forests, adjacent native fescue grasslands, connectivity to other habitats, and diverse breeding bird and uncommon/ sensitive bird habitat contribute to the significance of the habitats found on the river valley escarpment within the Southbow Landing lands. Escarpment communities providing key habitat are recommended for retention and incorporation into Environmental Reserve within the proposed community.

6.4 Tree Stands

Forested areas providing continuous cover and those tree stands surrounding wetlands to be retained are recommended for preservation and incorporation into the proposed development. The retention of native forest habitat within the river valley, on the escarpment, and around retained wetlands is expected to preserve important wildlife habitat and movement corridors through the region. Tree retention is a particular focus within the 20.3 ha (50.26 ac) of protected escarpment, where approximately 89% of the trees are intended to be preserved. These contiguous tree stands will contribute significantly to the overall tree protection strategy for the Southbow plan area.

In addition to the trees that are intended to be preserved, there are a significant number of boulevard trees that will be planted throughout the community within the green streets and will provide for song bird and small animal habitat and connectivity. Opportunities to preserve additional existing tree stands will also be explored, wherever feasible, within public parks (Municipal Reserve) during subsequent planning stages.

Design of constructed public open spaces will include a planting plan, which would identify new tree planting, as well as any areas where protection of existing tree stands is being considered.

6.5 Education and Partnerships

In cooperation with the Cochrane Environmental Advisory Committee (CEAC), opportunities for education and community engagement will be examined and developed to promote stewardship and community awareness throughout Southbow Landing.

6.6 Riparian Areas

Riparian areas adjacent to the Bow River within the Southbow Landing lands consists of largely unvegetated embankment (approximately 3 to 5 m high) that is comprised largely of river cobble with intermittent stands of riverine forest. Riparian areas act as a floodway and provide essential habitat for both flora and fauna. Riparian Areas associated with the Southbow Landing lands are recommended for retention as Environmental Reserve within the proposed Southbow Landing development.

7.0

Mobility

7.1 Pedestrian and Bicycle Circulation

The Southbow Landing Neighbourhood Plan provides a comprehensive and interconnected pedestrian network via sidewalks and pathways throughout the community to link residents to schools, recreational areas, and commercial areas that will be available for employment, entertainment, and day-to-day errands. In addition, the street network for the proposed development has been designed to minimize the number of discontinuous streets and facilitate convenient walking and bicycling through high roadway connectivity.

The objectives of the Cochrane Bicycle Network Plan will be achieved through the core network of bicycle facilities that are provided in the SLNP via pathways and multi-use pathways adjacent to James Walker Trail. Visible and convenient bicycle parking will be promoted at major destinations within the SLNP. Not only will this encourage active transportation for future residents, it will also be a positive contribution to the Town's commitment towards a sustainable future.

7.2 Transportation Network

Access to Southbow Landing will be provided from the west on Highway 22 at James Walker Trail. The Highway 22 / James Walker Trail intersection will not only provide access to Southbow Landing but will also serve to provide main access for the communities north of James Walker Trail. Upgrades to this intersection will be required as these communities are developed.

A transportation impact analysis (TIA) has been completed as supporting technical information to the SLNP, submitted under separate cover. Based on larger area traffic (River Heights) and traffic generated by the Southbow Landing area – including the Employment Centre – a second access to the SLNP area from Highway 22 is not required to support build out within the SLNP. An additonal connection from River Heights Drive however, towards future development south of the Plan Area has been incorporated in alignment with Cochrane's future growth strategy.

Timing of the need for intersection improvements on Highway 22 and the need for the second access (and / or other larger access improvements along this section of the Highway 22 corridor, south of the SLNP area) will be determined based on staging and timing of development, monitored and updated at applicable subdivision stages. The ability to add a new access to Highway 22, or consider other access modifications in this corridor, will depend on the future status of Highway 22, and will require ongoing communication between the Town, Alberta Transportation, Rocky View County and affected developers.

Please note that the road cross sections and intersection controls presented in this Neighbourhood Plan are based on the best available information; however the specific right-of-way dimensions are subject to change and may be revisited during detailed design. Particularly within the Employment Centre, further consideration will be given to other forms of intersection control (including traffic signals) during subsequent planning stages.

Figure 7.2 identifies the different mobilities options and distance from transit.

7.3 Public Transit Readiness

Currently the transit service in Cochrane is using a Dial-a-ride system where customers make an advanced reservation for a pick-up and drop-off that occurs along a designated route. This form of service has been used in other low transit demand areas and could transition to a community shuttle or fixed-route, fixed-schedule service once demand increases.

The Calgary Metropolitan Plan illustrates three future connections between Calgary and Cochrane via “Initial BRT Services”, “Commuter Rail Line” and “Future BRT or Express Routes”. It is anticipated that the connections will be via Highway 22 and Highway 1A, with the main transfer facility likely located in the downtown area. It is not known whether intermediate stops will be provided that would service the SLNP directly, however provision for a transit facility in the Village Centre or Employment Centre lands for purchase by the Town or a regional authority could be planned at the detail design stage and incorporated in the future, so that the area is ‘transit-ready’.

Figure 7.1 identifies the different road types and their locations across the Plan. Detailed Cross Sections referenced can be found in Appendix A: Road Cross Sections.

7.4 James Walker Trail Interface

James Walker Trail is planned as a four lane divided arterial roadway east of River Heights Drive, and will traverse the SLNP in an east-west direction, linking the community to Highway 22 and eventually to Griffin Road and on to Highway 22 and Highway 1A. As an arterial road, James Walker Trail can also be classified as a truck route, and would be expected to carry a mixture of residential and non-residential traffic.

The SLNP proposes a 36.0 metre right of way for the James Walker Trail section east of the River Heights Drive intersection. Functional planning completed by the Town of Cochrane and Urban Systems has identified this segment as a four lane arterial, which is sufficient to accommodate the needs of vehicle travel to full build-out of the Plan area.

Key techniques employed to minimize or eliminate the need for traditional sound fencing, while at the same time visually opening the James Walker Trail interface and dealing with vehicle traffic consist of:

- Locate suitable land uses along James Walker Trail. The segment of James Walker Trail between Highway 22 and Willow Drive is comprised of Employment Centre / Village Centre / Commercial and various forms of residential uses, as well as a large section of school site flankage. At the east end of the Plan area James Walker trail will transition down the top escarpment area through a section of cut, creating vertical and horizontal separation between the road and residential uses in this area.

- Minimize the amount of low density residential frontage on James Walker Trail: The SLNP master plan has been laid out to reduce and confine the amount of low density interface along James Walker Trail to a short east-west section east of Willow Drive. In addition, intersections with James Walker Trail along this short section have been strategically located to further break up the roadway and reduce the need for sound attenuation techniques. The main north-south entry road to the central park and residential cell south of James Walker trail will be fronted by multi-unit dwellings, creating the opportunity to further break up the east-west length of James Walker trail in this section.

- Where low density residential is provided, a combination of frontage road and open ended cul-de-sac has been proposed mid-block. This in intended to achieve pedestrian connectivity as well as break up the visual monotony of a continuous sound wall. Furthermore, the houses that are adjacent to James Walker Trail will offer architectural elements that will provide visual interest and address the street.

- Utilize the road right of way to create additional buffering and separation. In order to provide additional buffering and accommodate off-street bicycle infrastructure a customized road cross section is proposed for James Walker Trail that will provide a separate regional multi-use pathway within the road right of way. This cross section was covered in greater detail in **Section 5: Open Space Systems** of this Neighbourhood Plan.

- Use noise attenuation fencing only where required in limited areas, and employ architecturally enhanced wood screen fencing with residential character. Screen fencing techniques in residential areas have developed significantly over time, and many options are available to address screening requirements without the use of large concrete fence structures. These techniques are employed in various communities and neighbourhoods in the Calgary region where noise attenuation is required on major streets in the vicinity of low density residential uses. Visual examples of these techniques are illustrated in the examples shown on this page. In conjunction with the techniques outlined above, the use of screen fencing will be minimized and visually disconnected along the short east-west segment of James Walker Trail east of Willow Drive to minimize impact while providing the necessary attenuation and maximizing land efficiency.

Figure 7.1 Transportation Network Plan

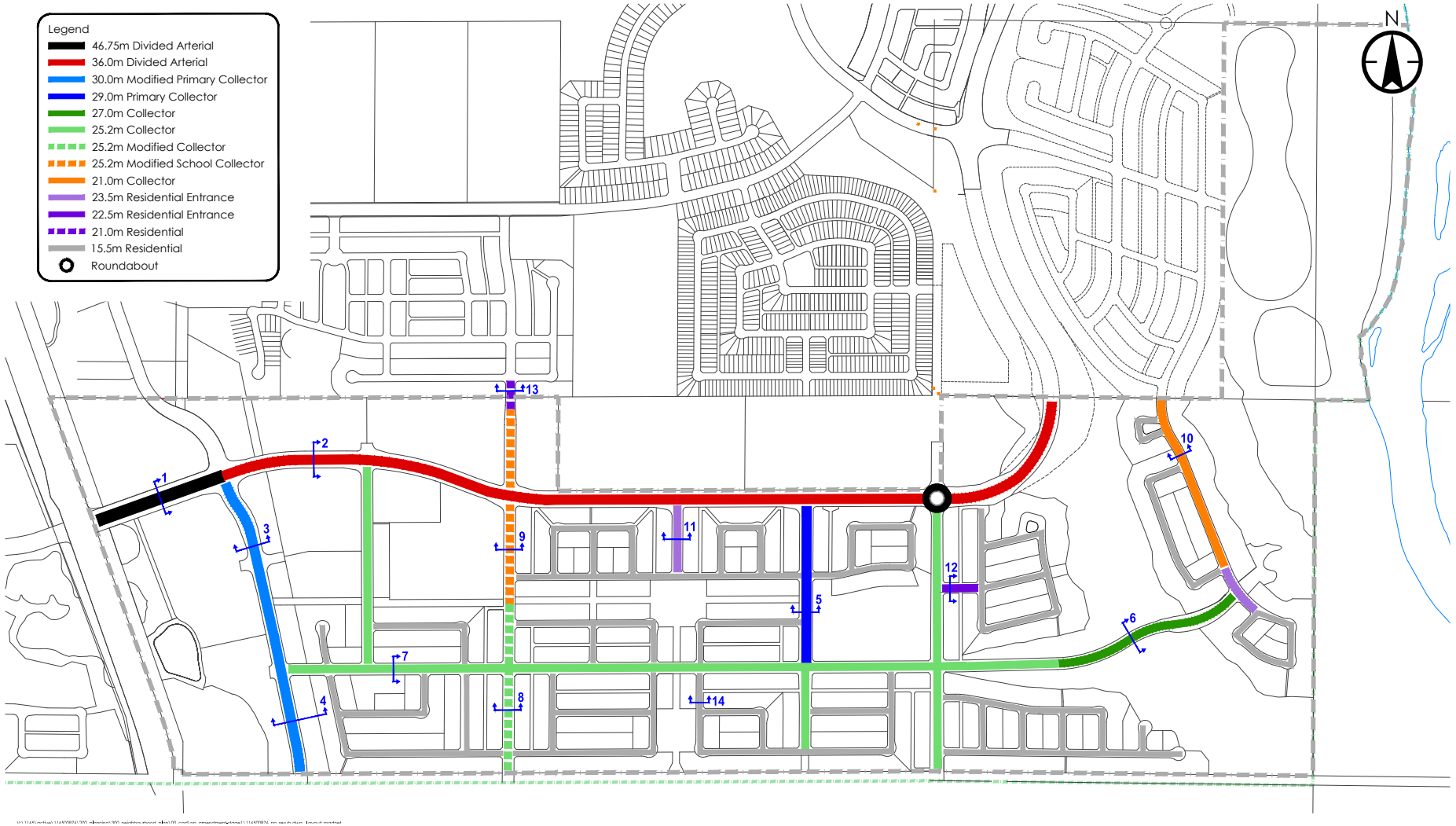
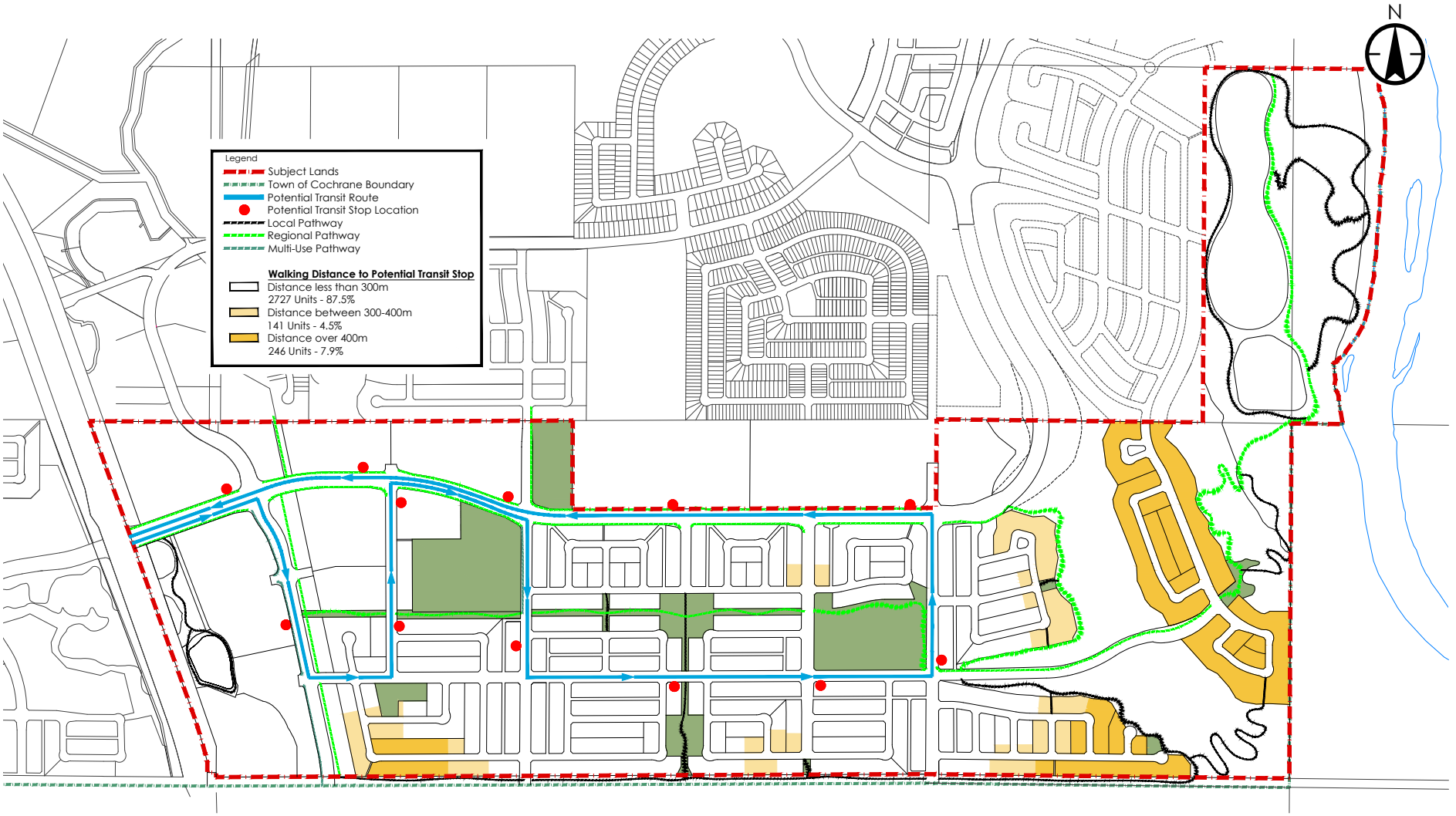


Figure 7.2 Mobility Plan



8.0

Infrastructure and Servicing

8.1 Sanitary Servicing

Sanitary servicing of the Southbow Landing Neighbourhood Plan (SLNP) on the east side and north portion of the plan area will be provided by extending the existing sanitary sewers from River Heights Drive and from the proposed sanitary sewers for the Willows development.

The remaining lands, including the middle bench area on the east side of the plan will drain by gravity east through the plan area and north to a future lift station (location to be determined with future development of the lands north of the SLNP) and will be pumped into the existing sanitary manhole in Riviera Way. A lift station is proposed at the north end of the middle bench. An offsite gravity sanitary line shown in **Figure 8.1** will tie in the forcemain and the remaining lands not captured in River Heights Drive or the Willows along the utility right-of-way east of Riversong will tie into existing sanitary on Riviera Way.

The easement for the existing sanitary forcemain to the City of Calgary is being maintained in the Neighbourhood Plan design of the Southbow Landing. The existing grades are also being maintained. If the second line to Calgary is not yet installed by the time development occurs in this area, the town has indicated that the owner may be required to pre-install the second line with recovery of the cost from the town as this is a levied item.

8.2 Water Servicing

The water distribution system for the SLNP is supplied by the River Heights reservoir and pump house. An upgrade to the River Heights pump station and reservoir is currently underway (preliminary design for 4th pump). Any of the lands developed within the Southbow Landing Neighbourhood Plan that fall within the current capacity are subject to payment for the required portion of the reservoir and existing reservoir supply main and existing sanitary siphon.

An upgrade is required for full build out of the SNLP area. As per discussions with the Town, the timing of the upgrade and the development that will trigger the upgrade, is dependent on the timing of the subdivision and remaining land in the River Heights Area.

The water mains for the SNLP will connect to the existing water main in River Heights Drive, and to the future water main extensions through the Willows and parcel directly to the North of the plan area. The middle bench lands on the east side of the SLNP are in the lower pressure zone, proposed to be serviced by a looped main and appropriate pressure reducing valves on a temporary basis until the development north of the plan area occurs and the water distribution system can be completed and looped at the lower pressure zone.

Figure 8.2 illustrates the water servicing for Southbow Landing.

Figure 8.1 Sanitary Sewer Servicing Plan

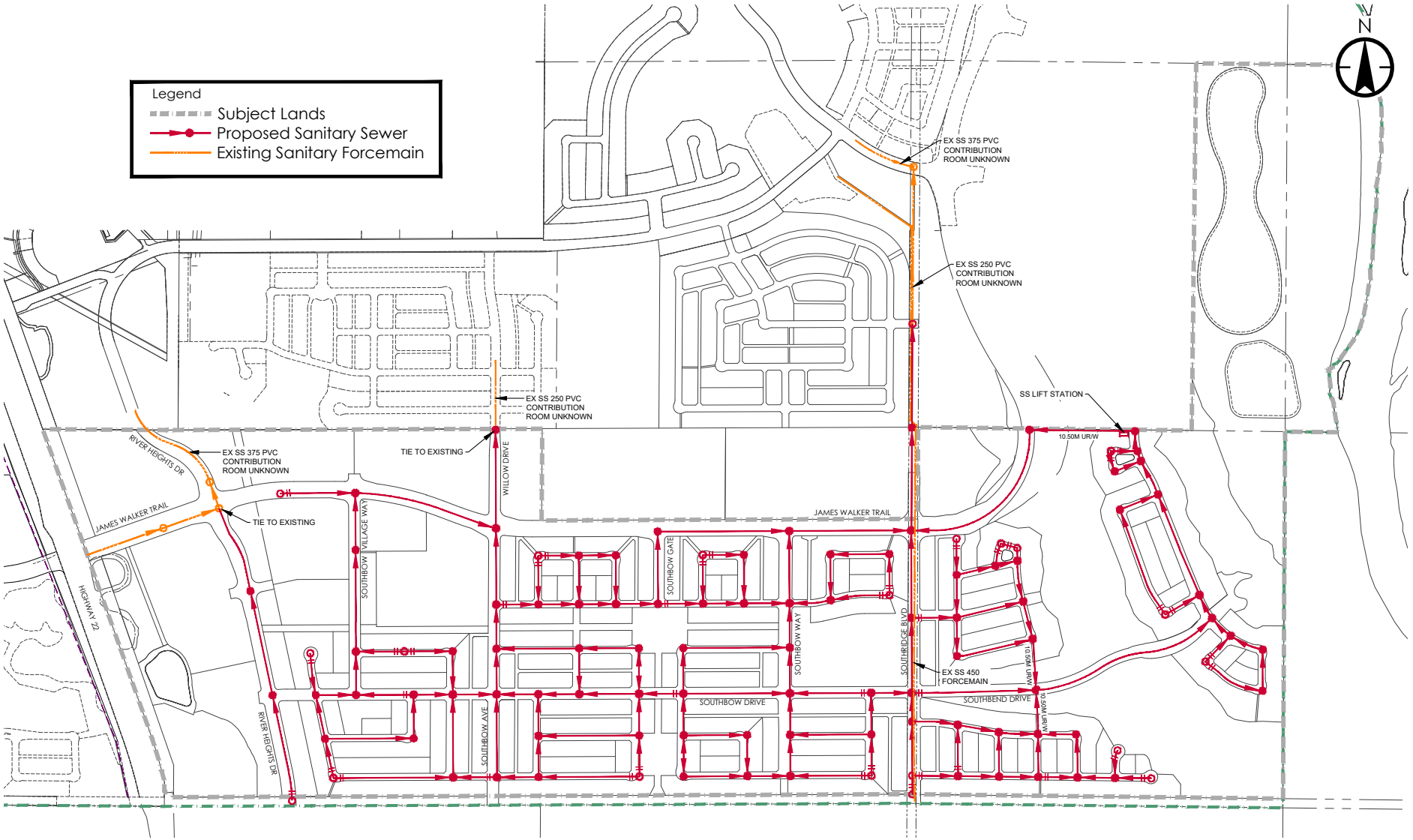
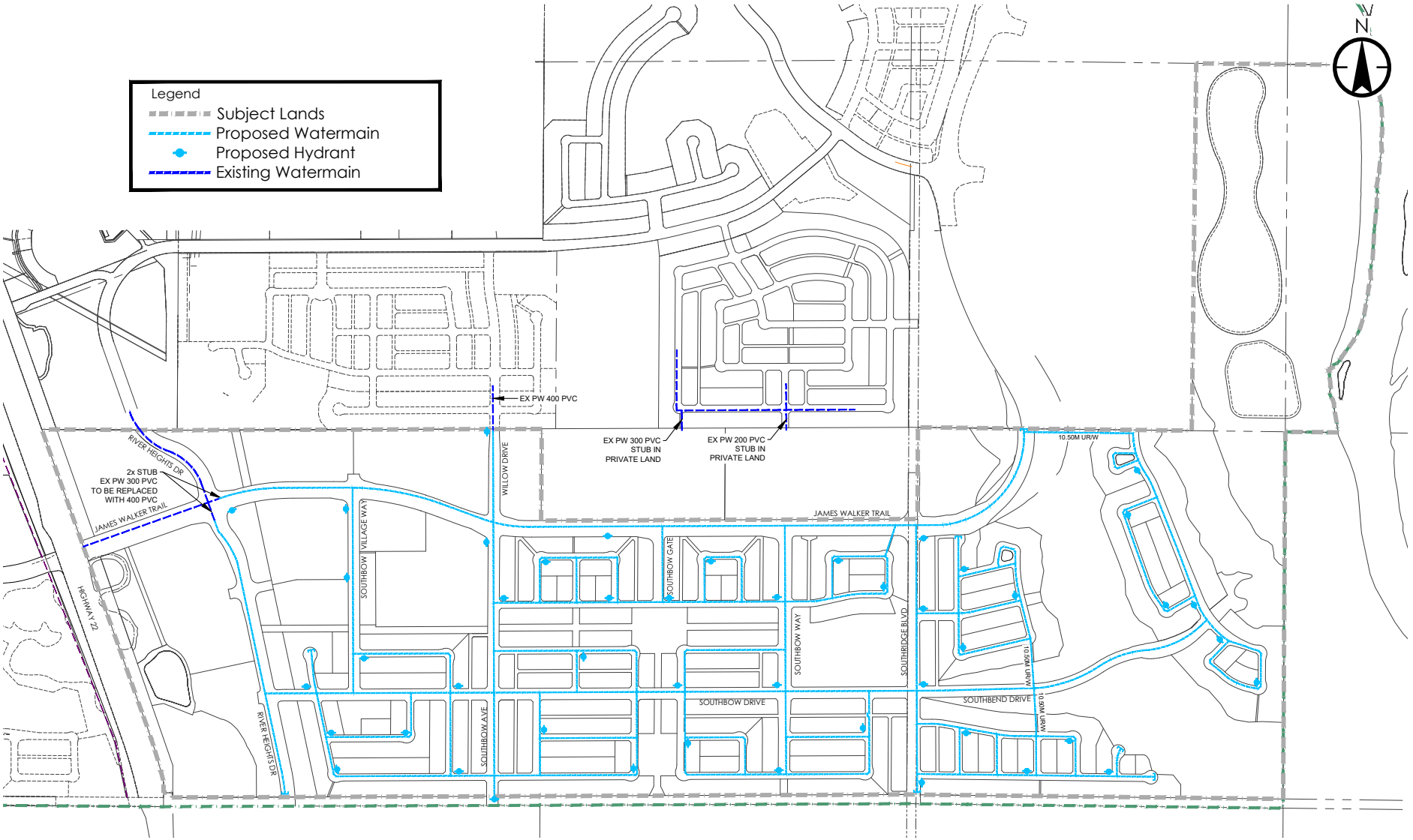


Figure 8.2 Water Servicing Plan



8.3 Stormwater Management

Stormwater management for the SNLP area was approved in accordance with the Southbow Landing Staged Master Drainage Plan to be submitted concurrently with this application.

The stormwater from the west side of the SNLP area will be directed to a constructed wet pond, located next to Highway 22. The area south of the proposed Willows development will be directed to the existing pond in the Willows development. The remaining lands will be directed east to a constructed wetland and forebay in the lower bench area with an ultimate outfall to the Bow River. The ponds will be designed to capture the 1:100 year storm event.

The proposed stormwater management system within Southbow Landing is directly integrated within existing and constructed wetlands. On the western portion of the site, stormwater will be directed by underground sewers and overland drainage to a new storm pond. This pond is located outside of the Hwy 22 potential future highway widening. The northern existing wetlands adjacent to Highway 22 will be retained and not incorporated as part of the stormwater management system.

The majority of drainage from Southbow Landing will drain eastwards to the Bow River via underground storm sewers and overland flows. This drainage will be directed into a stormwater management facility for treatment of the stormwater and control of its release to the Bow River. A constructed wetland will be incorporated into the site. The wetland will be designed in such a way as to replicate natural habitat systems. Permanent water level depths will be varied through the wetland, allowing for a variety of native vegetation species to establish. Stormwater will be treated within the forebay prior to release into the wetland, allowing for reduction in contaminants and sediments into the wetland. The constructed wetland will provide suitable habitat for both flora and fauna, and will be proposed as a compensation option for wetland loss in other portions of the site.

Figure 8.3 illustrates the main water distribution system and planned fire protection coverage for the SLNP area.

8.4 Shallow Utilities

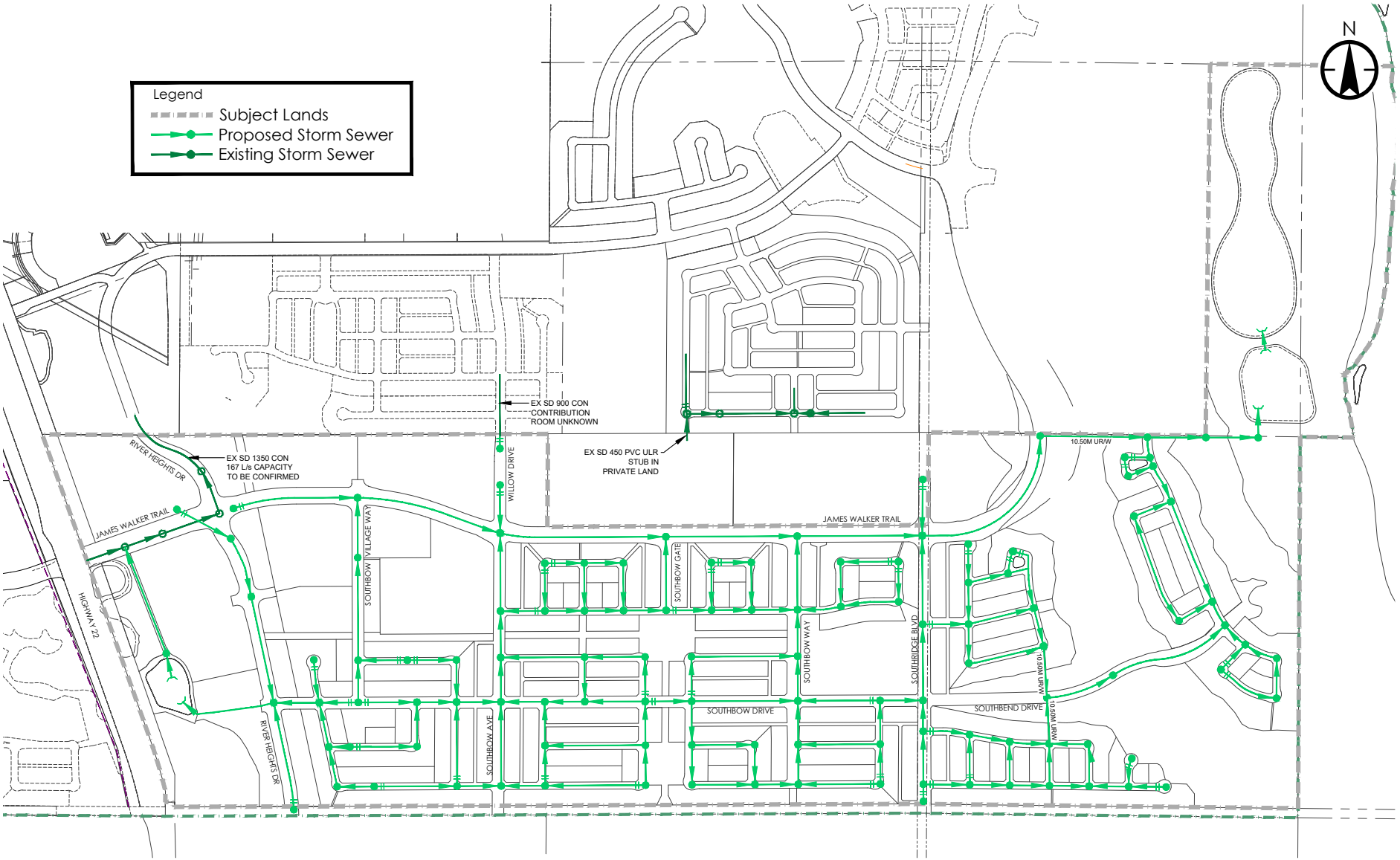
The shallow utility servicing for the SLNP will be provided by the extension of the existing utilities in River Heights Drive, proposed utilities in the Willows development as well the property to the immediate north of the central portion of the plan.

The existing gas line running north-south in the west portion of the plan through an existing right-of-way is remaining in place.

8.5 AltaLink Transmission Line Relocation

The existing AltaLink overhead 138 kV transmission line which presently runs diagonally northwest to southeast across the Plan area presents a significant planning and development constraint to future development on the SLNP. To overcome this constraint the SLNP proposes a relocation of the overhead line to significantly improve the master plan. The intent is to relocate the transmission line on an overhead line though a new easement adjacent to the existing north-south ATCO Pipelines high pressure gas line, and east along the undeveloped road allowance immediately south of the Plan area, rejoining the existing line near the southeast portion of the SLNP. Subject to further discussion with AltaLink and ATCO Pipelines techniques to integrate the overhead transmission line and gas pipeline rights-of-way into the Village Centre and Employment Centre areas to mitigate inefficiencies will be explored and developed at the detailed planning stage.

Figure 8.3 Storm Water Servicing Plan



9.0

Alignment with Town of Cochrane Policies & Guidelines

The Southbow Landing Neighbourhood Plan has been created to conform to guiding policies and achieve objectives of Cochrane's Municipal Development Plan (MDP), the Cochrane Sustainability Plan (CSP) and the River Heights Area Structure Plan (ASP).

9.1 River Heights Area Structure Plan

The River Heights ASP provides principles, objectives and policies that set out how the area will develop in the future. As an area-specific plan, the ASP must be in compliance with the municipal-wide MDP and CSP.

Section 4.1 of the ASP identifies the overarching direction of the MDP, stating the intent of Cochrane is "to plan and develop new areas as complete communities." According to the ASP, "a complete community is one that provides for the social, local, recreational, and neighbourhood commercial needs of residents. It should have diverse housing options, local food production, diverse educational opportunities, employment opportunities, transportation options (including public transit), and balanced land uses. Establishing Southbow Landing as a complete community is one of the primary objectives of this Area Structure Plan." Section 4.2 identifies the ASP seeks to lay the ground work for a sustainable community, as guided by the policy direction of the CSP.

In achieving these municipal goals and maintaining the intent of the ASP Land Use Concept, the Southbow Landing Neighbourhood Plan (NP) addresses the MDP and CSP as described in the following:

9.2 Cochrane Municipal Development Plan

The MDP was adopted in October 2008 and identifies the Town's long-term vision for growth and community. It focuses on five principles intended to motivate and guide development (MDP, section 1.2). These principles and how the Southbow Landing Neighbourhood Plan addresses each principle is summarized below:

9.2.1 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.

Being the next contiguous undeveloped land adjacent to the communities of Riversong and Willows, Southbow Landing represents a logical extension and efficient use of development and utility servicing. The community will maintain a "small-town atmosphere" and preserve and celebrate the western heritage through design elements and architecture. An ecologically aware community, public access to the eastern ridges overlooking the Glenbow Ranch Provincial Park will be provided and public needs will be met with the inclusion of parks, schools, employment opportunities, and institutional uses. The location of these is identified on the Land Use Concept Plan.

9.2.2 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.

As a complete community, Southbow Landing will offer residents a place to call home among natural landscape and public amenities. Park spaces and naturalized wetlands are connected by community pathways. Social diversity is encouraged through the provision of various housing types ranging from affordable multi-family developments, to larger single family dwellings, including semi-detached homes and townhouses. Young families and seniors alike will enjoy days spent shopping in the Village Centre, exploring Glenbow Provincial Park, and communing as they travel the pathways by bike or foot.

9.2.3 Environmental Stewardship

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

Sensitive to the existing landscape, Southbow Landing has incorporated the wetlands adjacent to Highway 22 and preserves the ridges and benches of the western slopes overlooking the Provincial Park. To accommodate community development while enhancing the environment, the northeast storm pond will be developed as a naturalized area, providing passive recreation and habitat for water fowl and other riparian species.

9.2.4 Economic Vitality

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

The Employment Centre and Village Centre will provide business and economic opportunities, including commercial, retail, and possibly clean technologically advanced (or knowledge-based) industries. These economic generators will be supported by the adjacent high-density residential developments, direct pathway linkages to the eastern portions of the community, and transit system connecting Southbow Landing to the rest of the Town.

9.2.5 Community Engagement

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

Previous owners Hopewell and Philco Farms proactively engaged adjacent landowners and community citizens and Town staff in an interactive design workshop held in March 2013. The workshop identified common goals and desired characteristics for the Neighbourhood Plan, which are outlined in **Section 4**. The outcomes of the workshop were summarized and shared with participants to ensure the plan reflects the outcomes of the workshop.

9.3 Cochrane Sustainability Plan

The Cochrane Sustainability Plan was adopted by Council in May 2009. The plan provides thirteen Pathways to the Future, grouped into four categories, to help guide future development within Cochrane.

9.3.1 We Build a Culture of Responsibility

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

The Southbow Landing Neighbourhood Plan encourages social responsibility by centrally locating the schools and providing safe routes for children through the pathway system. The design of the neighbourhood recognizes the importance of the natural areas and its strategic location as a gateway development into the Town. Wetlands framed by an architecturally sensitive Employment Centre are envisioned to welcome visitors into the Town and the SLNP.

Employment opportunities will exist in the Village Centre and Employment Centre areas, thereby mitigating travel requirements for residents who live and work within the neighbourhood. The Village Centre and employment areas will augment, not compete, with downtown Cochrane; connecting Southbow Landing residents to a long-term vision of economic sustainability and prosperity.

Glenbow Ranch Provincial Park may be viewed as the 'backyard' of Southbow Landing, a perspective that will encourage residents to be stewards of the natural resource the Park offers to the greater population.

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 design of the community is intended to recognize and instill a respect for the natural landscape. The eastern escarpments and western wetlands will be protected and integrated into the urban form of the community, allowing them to coexist in harmony. A suitable interface to the Provincial Park, the storm pond in the northeast will be located in an environmental reserve area and designed for passive public recreation, as well as natural habitat.

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.

Southbow Landing will provide homes for an approximate 2,097 additional residents into the Town of Cochrane as well as development opportunities for new local and regional businesses and industries. The intent of the employment and commercial areas are to enhance existing consumer choices and services provided within the Town and not to directly compete with those of downtown or adjacent communities.

Three schools sites will accommodate educational needs of families, not only in Southbow Landing, but also those of the Willows, and Riversong, by providing grades 1-12. It is envisioned that the schools will be central to community life as hubs for education, gathering for events, and volunteering ones' time to contribute to the ongoing vitality of the neighbourhood.

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.

The variety of housing types will accommodate a range of affordability, creating a diverse culture of residents. Seniors' accommodations or those needing assisted living can be provided in the high density developments with easy access to Village Centre. Families may choose to live in a single family, semi-detached, apartment, or townhouse, according to their income and needs; all of which are within walking distance to the school sites. School sites will include active recreation, providing sports fields and playgrounds.

The Village Centre will be a focal point for modern community life and commerce. It will include a range of shops and services while maintain a small-town atmosphere via a 'Main Street' design where pedestrian activity is encouraged through convenience (easy access and linages) and safety (traffic calming measures at the development stage to reduce car dominance and speed).

A transit route will be planned to service the community, with a transit hub being located adjacent to the Village Centre. This hub will enhance mobility options of residents in addition to the pathways offering ample bicycle and pedestrian opportunities for daily travel.

Pathways connect residents to commercial and institutional amenities, as well as the recreational opportunities of the Provincial Park, while incorporating publicly accessible viewpoints of the treasured landscape at strategic locations.

James Walker Trail will become a multi-modal connection between communities offering vehicle, bicycle and pedestrian linkages, and will continue to be used for gravel resource operations. The western heritage of Cochrane will be echoed in the architecture and resulting streetscape of Southbow Landing.

9.4 Town of Cochrane integrated Neighbourhood Design Guidelines

The Town of Cochrane Integrated Neighbourhood Design Guidelines outlines policies and principles for the purpose of encouraging distinct neighbourhoods and building an attractive community.

This document was used to guide the development and organization of the Neighbourhood Plan. Key principles such as retaining and enhancing the area's natural features; slope sensitive design, and neighbourhood transition all formed the basis of the community design. On a more detailed level, Southbow Landing meets the intent of encouraging a strong building relationship to the street, and encouraging active frontages.

Lastly, the Integrated Neighbourhood Design Guidelines will be further engaged during the development of the Architectural Controls for the Southbow Landing when they are developed.

9.5 Municipal Environmental Impact Statement

Town of Cochrane Municipal Development Plan requires a Municipal Environmental Impact Statement (MEIS) in accordance with section 6.3.2; in which the identification of various existing and proposed environmental conditions are to be addressed. As part of the Southbow Landing Neighbourhood plan the following reports offer additional information: Geotechnical Evaluation by McIntosh Lalani Engineering report ML 6065; Phase I Environmental Site Assessment by EBA; and Biophysical Impact Assessment, a statement of justification for Archaeology, Geology and Paleontology by Stantec Consulting.

9.5.1 Biophysical Assessment

A Biophysical Assessment was completed for the proposed development of Southbow Landing in November of 2013. Extensive coniferous and mixed wood forests, connectivity to other habitats, and diverse breeding bird and uncommon/ sensitive bird habitat contribute to the significance of the valley habitats. Wildlife mitigation recommendations include compliance with the Migratory Birds Convention Act and a wildlife re-assessment prior to any ground disturbance is also recommended. The project is predicted to have a moderate local significance.

9.5.2 Vegetation

The property is located in the northern portion of the Foothills fescue natural subregion. The area has extensive coniferous and mixed wood forests as well as native fescue grasslands. It is also characterized by valleys, wetlands and cultivated plains. Heavy grazing by domestic livestock has disturbed a large portion of the habitat.

9.5.3 Wetlands

A total of 66 wetlands were identified, assessed and classified within the Southbow Landing lands. Most wetlands are concentrated in the western half of the proposed development within grazed rangelands. As a result, many of the wetlands within the site have historically been accessed by livestock and grazed. 2 Class IV Semi-permanent Ponds and 1 Class III Seasonal Pond near/on the western border of the site have been identified as environmentally significant and will be incorporated into Environmental Reserve within the proposed development.

9.5.4 Wildlife

The Bow River Valley is recognized as an Environmentally Significant Area and is an important wildlife corridor for the region which contains key habitat for wildlife. Mule deer and white-tailed deer as well as a diverse breeding bird and uncommon/ sensitive bird habitat contribute to the significance of the habitats found on the river valley escarpment within the Southbow Landing lands. Escarpment communities providing key habitat are recommended for retention and incorporation into Environmental Reserve within the proposed community. Species with special status observed include great blue heron, osprey, Swainson's hawk, American kestrel, sora, and American badger, all listed as sensitive by AESRD, 2010.

9.5.5 Ecologically Significant Lands

Environmentally significant areas previously identified within the proposed development lands and confirmed during the site reconnaissance include escarpment areas with continuous forest cover, riparian areas of the Bow River and associated native vegetation, wildlife movement corridors within the Bow Valley, and ecologically diverse wetlands.

9.5.6 Geotechnical

In July of 2013 a Geotechnical Evaluation was prepared for the Southbow Landing Plan by McIntosh Lalani Engineering. A slope stability analysis and assessment was completed on the east-facing Bow River valley slope, including both the upper and lower slopes. Upon completion of the slope stability modeling, McIntosh Lalani has calculated a development setback distance from the crest of each slope to meet a Factor of Safety (FOS) of 1.5 against slope instability. Setbacks were not required for the upper slope. Setbacks along the lower slopes vary from approximately 6 metres to 18 metres from the top of slope line. McIntosh Lalani recommended that a slope stability review be completed once the design grades have been established and prior to construction. Finally, a restrictive covenant for the proposed lots that back onto the slope crest should be implemented. Further analysis of the slope may need to be undertaken to assess the impact of any specific cuts or fills on the stability of the slope at the subdivision stage.

9.5.7 Flood Potential

The Lower bench in the NE portion of the community has been left undeveloped. Although, the majority of the lower bench does have development potential (pending additional studies), there is a small area that is classified as floodway (**Figure 9.1**). There is also an area of Flood fringe as this is an important floodway area. We do not anticipate any flooding in any of the residential areas.

9.5.8 Stormwater Study and Water Quantity and Quality

The proposed stormwater management system within Southbow Landing is directly integrated within existing and constructed wetlands. Stormwater will be directed by underground sewers and overland drainage to the two existing wetlands adjacent to Highway 22. Forebays will be added to treat the stormwater prior to release into the existing wetlands The release of treated stormwater into these wetlands is intended to mimic, where practicable, pre-construction hydrologic conditions. This will ensure the long-term sustainability of the natural wetlands within the built environment. The majority of drainage from Southbow Landing will drain eastwards to the Bow River via underground storm sewers and overland flows. This drainage will be directed into a stormwater management facility for treatment of the stormwater and control of its release to the Bow River. A constructed wetland will be incorporated into the site and the wetland will be designed in such a way as to replicate natural habitat systems. . The constructed wetland will provide suitable habitat for both flora and fauna, and will be proposed as a compensation option for wetland loss in other portions of the site.

9.5.9 Air Quality

The SLNP will be developed as a primarily residential neighbourhood with a large amount of pre-development and constructed open space incorporated into the plan design. Contiguous treed areas are planned to be retained where possible, and the design of the community on a grid basis will make it easier to walk or cycle to meet every day needs within the Neighbourhood Plan area. As a complete community Southbow Landing will provide local employment opportunities and commercial / service uses to its residents and those of nearby neighbourhoods, thereby potentially causing some reduction to automobile use and trip lengths. Standards for future development on the Employment Centre lands will require that only clean industries are able to locate in this area in order to reduce localized airborne emissions.

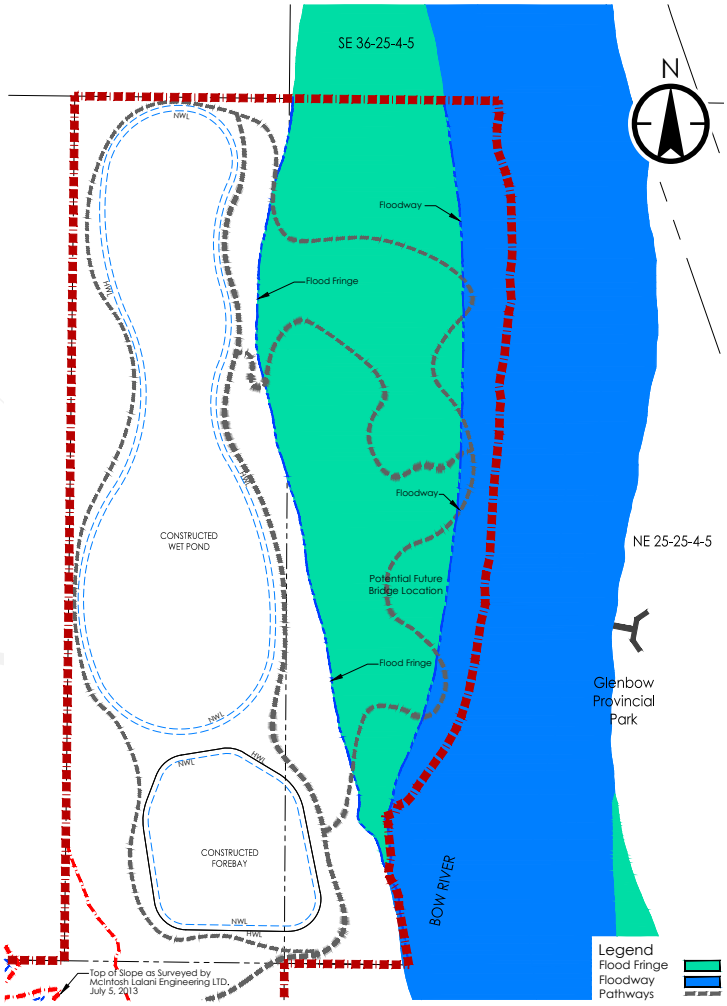
9.5.10 Visual Resources

The Bow River Valley is set against rolling hills, cultivated plains, various wetlands and the Rocky Mountains to the west, the community will strive to create corridors to maintain these views. As part of the Cochrane gateway area, the SLNP utilizes the existing wetlands adjacent to Highway 22 to enhance the natural features in this area in order to create a local amenity for Southbow Landing residents and visitors, but also to enhance the entry experience for travelers entering Cochrane via Highway 22.

9.5.11 Land and Resource Use

The Southbow Landing Neighbourhood Plan is designed to maximize efficient use of the land while retaining visually and environmentally significant features by incorporating them into the neighbourhood plan design. Land use and density calculations are found in **Section 4** of the Neighbourhood Plan.

Figure 9.1 Flood Area



10.0

Background Information

10.1 Historical Resource Statement of Justification

10.1.1 Paleontology

In April of 2013 Stantec Consulting Ltd. prepared a report documenting the Geology and Paleontology of the Southbow Landing Neighbourhood Plan. This information about Historic Resources concluded that the paleontological potential of the Cochrane area is high, both for the bedrock and postglacial sediments, as can be demonstrated by the presence of significant fossil sites in the area. Within the Project area, the upland region has low paleontological potential as it is covered by thick glaciolacustrine sediments. The Bow River valley slope and lower terrace have high paleontological potential as they are underlain by bedrock and a postglacial sequence that is fossiliferous.

The likelihood of Project impacts to significant paleontological resources in Section 25-25-4 W5M is considered high. A targeted paleontological Historical Resources Impact Assessment (HRIA) is recommended for Section 25-25-4 W5M within the Project area to document the extent of bedrock exposures and search for any fossil sites exposed at the surface. Depending on the results of the HRIA, paleontological construction monitoring or other mitigation may be recommended.

10.1.2 Archaeology

In April of 2013, Stantec Consulting Ltd documented the Archaeological and Historic potential of the Southbow Landing Neighbourhood Plan in a Historical Resources Impact Assessment (HRIA). The results of this work concluded that there is a high potential for the identification of archaeological resources in the development area. Archaeological assessment conducted in the vicinity of the project area has revealed surficial and buried archaeological material, and one pre-contact stone feature site has been recorded within the project area. The development holds moderate potential for the identification of historic period sites and materials.

Based upon the results of the HRIA, Historical Resources Act clearance was granted by Alberta Culture in June 2014.

10.2 Geotechnical and Slope Stability Evaluation

In July of 2013 a Geotechnical Evaluation was prepared for the Southbow Landing Plan by McIntosh Lalani Engineering Ltd. ('McIntosh Lalani'). According to the report the site is currently grazed agricultural land and from west to east, the first three-quarters of the site consist of prairie pothole topography. The final quarter of the site consists of several slopes and relatively flat benches extending down to the river. The general subsurface stratigraphy was relatively consistent on the upper portion of the site. It consisted of silt overlying silty clay with topsoil being present at the surface. According to the report subsurface conditions were more variable on the lower bench but generally consisted of silty clay overlying gravels. A slope stability analysis and assessment was completed on the east-facing Bow River valley slope, including both the upper and lower slopes. It is understood that the slope faces will not be altered by the proposed development. The upper slope is approximately 930 metres in length and the gradient ranges from approximately 2.9:1 to 5:1. Most of the slope is heavily treed, however long sections are vegetated with grass and brush only. No evidence of seepage from the slope face or of previous slope failures was evident from reconnaissance of the slope. The lower slope is approximately 430 metres in length and the gradient ranges from approximately 2.0:1 to 3.0:1. Most of the slope is covered by trees or brush and the remainder by grass. No evidence of seepage from the slope face or of previous slope failures was evident from reconnaissance of the slope. Upon completion of the slope stability modeling, M•L has calculated a development setback distance from the crest of each slope to meet a Factor of Safety (FOS) of 1.5 against slope instability. Setbacks were not required for the upper slope. Setbacks along the lower slopes vary from approximately 6 metres to 18 metres from the top of slope line.

The existing grades of the site need to be maintained to maintain a F.O.S. of 1.5. All vegetation should remain intact. Should a slope disturbance occur, the slope should be repaired and re-vegetated immediately. The development setbacks may change with cutting or filling at the top of the slope. In addition, the setbacks will change if areas near the toe of slope are cut. Should any fills more than 0.5 metres in thickness be

proposed at the top of the slope, this slope stability analysis should be reviewed by McIntosh Lalani to ensure a F.O.S. of 1.5 is maintained. McIntosh Lalani recommended that a slope stability review be completed once the design grades have been established and prior to construction. Finally, a restrictive covenant for the proposed lots that back onto the slope crest should be implemented. Further analysis of the slope may need to be undertaken to assess the impact of any cuts or fills on the stability of the slope. Please refer to **Figure 10.1** to **10.3**.

10.3 Phase I Environmental Site Assessment

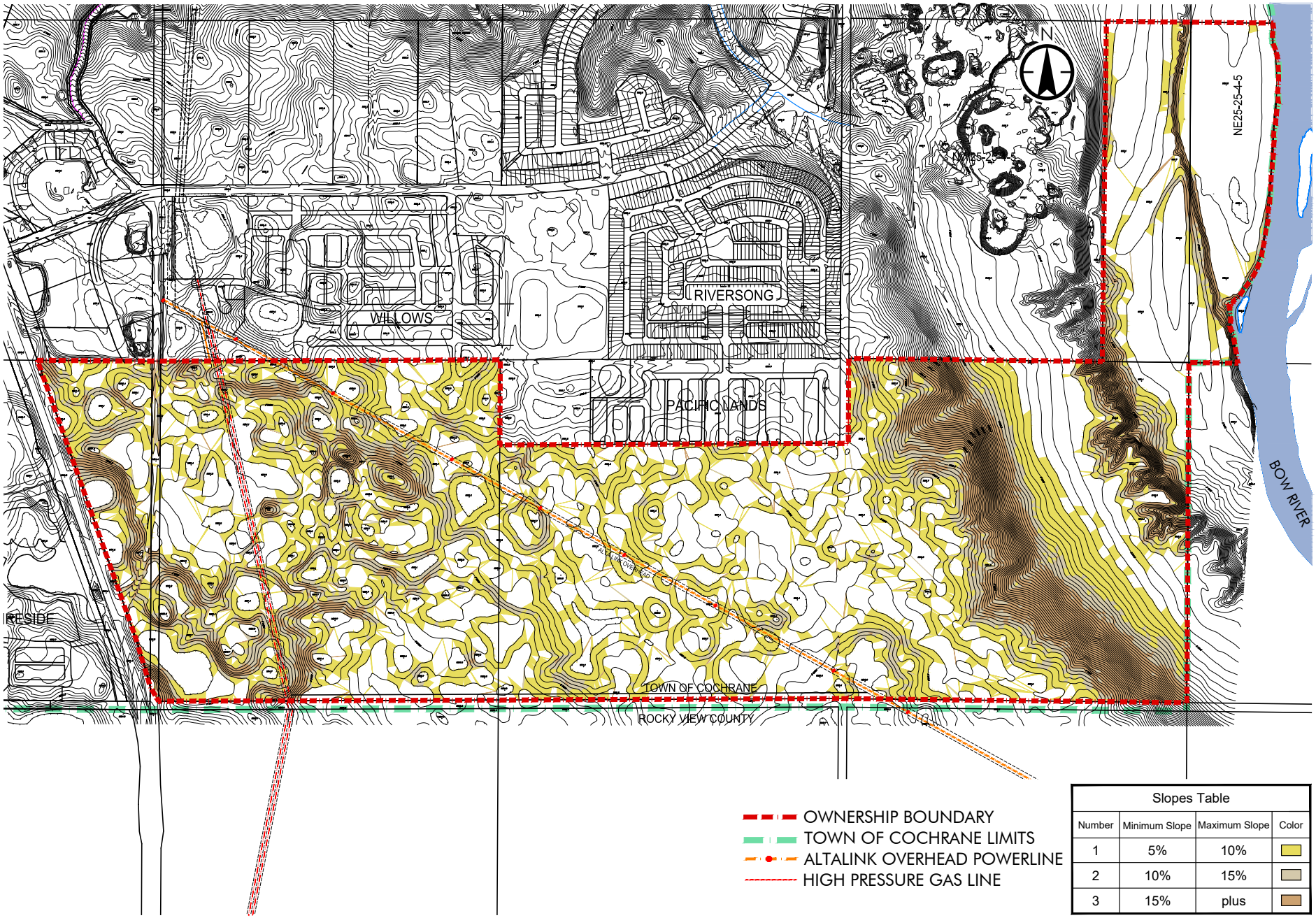
EBA Engineering Consultants Ltd. completed a Phase I environmental site assessment (ESA) for the Southbow Landing Neighbourhood Plan Area. The objective of the Phase I ESA was to comment on whether any past or present land use, either off site or on site, may have a potential to cause environmental impairment of the site.

The report recommended that no further environmental investigation is required at this time. This is based on the fact that there are no apparent potential sources of environmental impairment relating to the Site from historical and/or current on-site and off-site land uses. The following was recommended for consideration as an outcome of the Phase 1 ESA:

- If buried debris or staining is encountered during future investigation or ground disturbance, a qualified environmental professional should be contacted;
- If soils containing organics are encountered during future ground disturbance, they should be removed from beneath building footprints and not be reburied; a qualified environmental professional should be contacted;
- Geotechnical standpipes should be properly decommissioned at the end of their useful life; and
- Any on-site water wells should be decommissioned in accordance with the Alberta Water Act.

The Alberta Water Act defines a water body as any location where water flows or is present, whether or not the flow or the presence of water is continuous, intermittent, or occurs only during a flood, and includes but is not limited to wetlands and aquifers (Government of Alberta 2012). Any disturbance to surface water bodies should be done in accordance with the Alberta Water Act.

Figure 10.1 Slope Analysis



Slopes Table			
Number	Minimum Slope	Maximum Slope	Color
1	5%	10%	
2	10%	15%	
3	15%	plus	

Figure 10.2 Geotechnical Setbacks

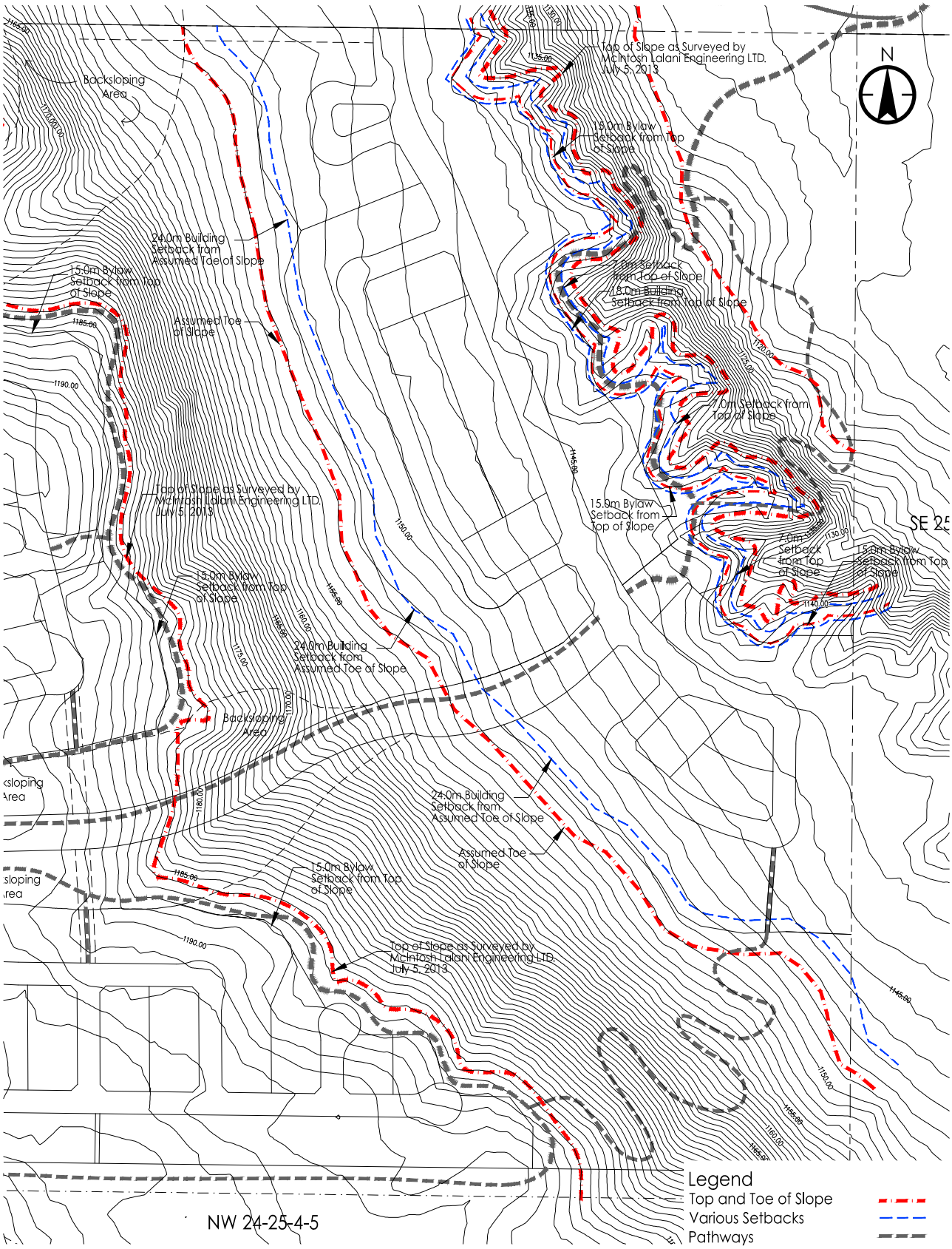
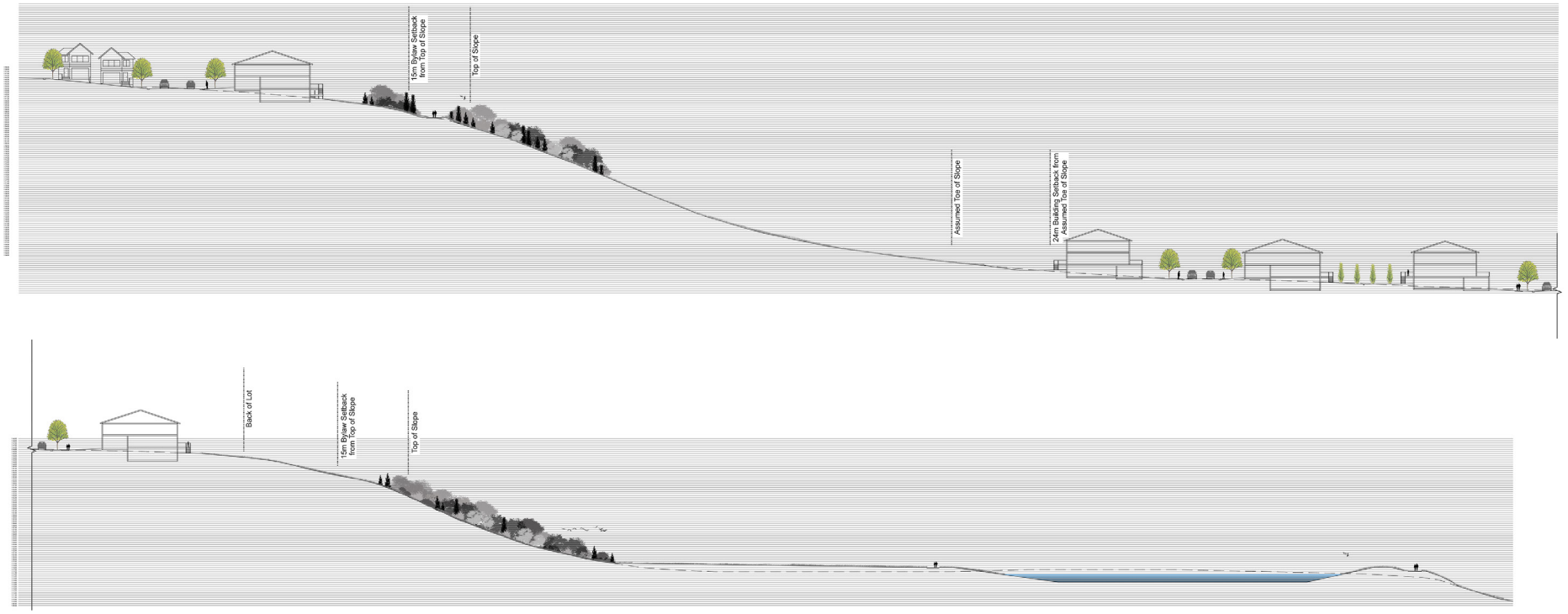
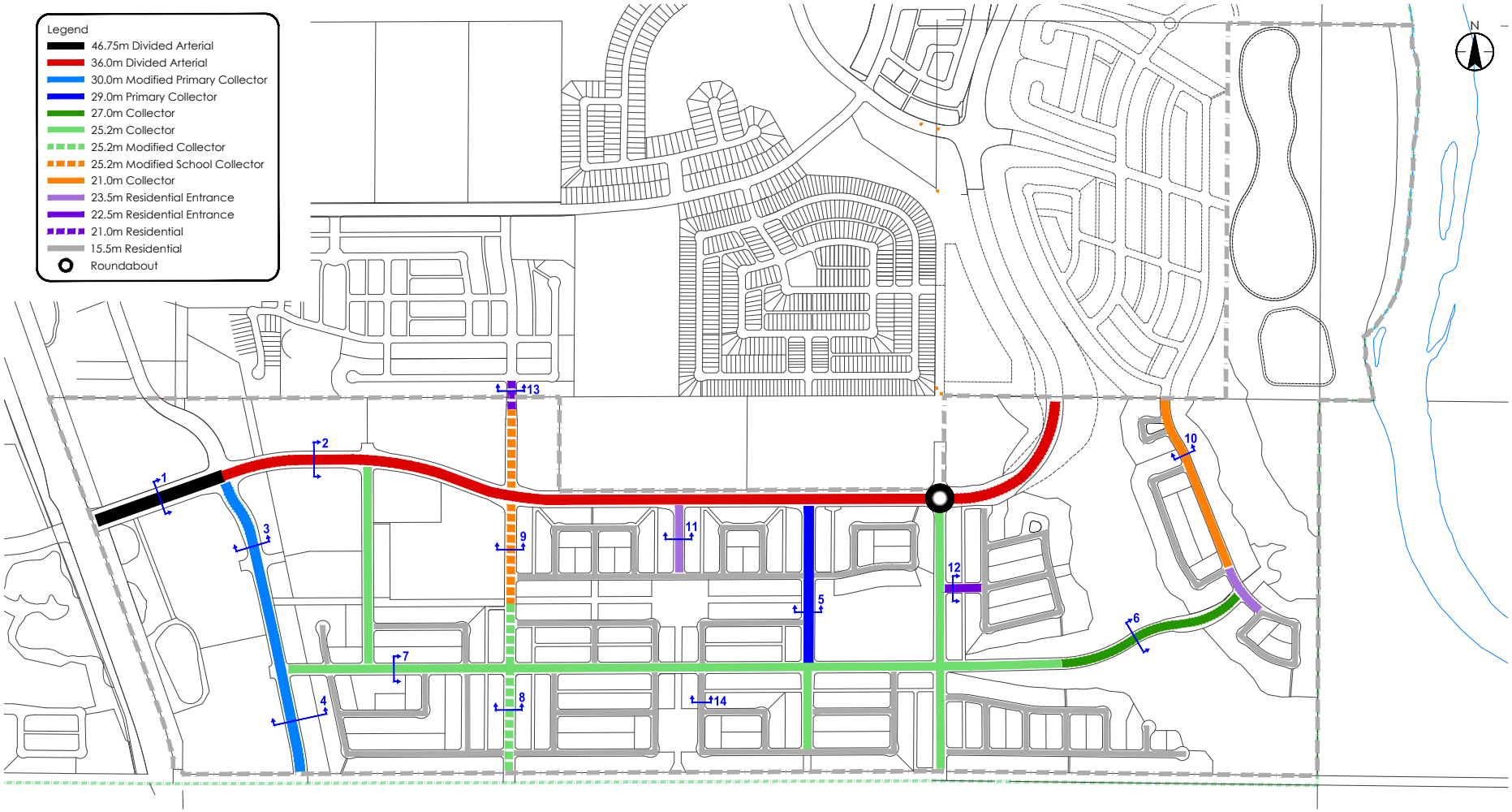


Figure 10.3 Landscape Slope Sections

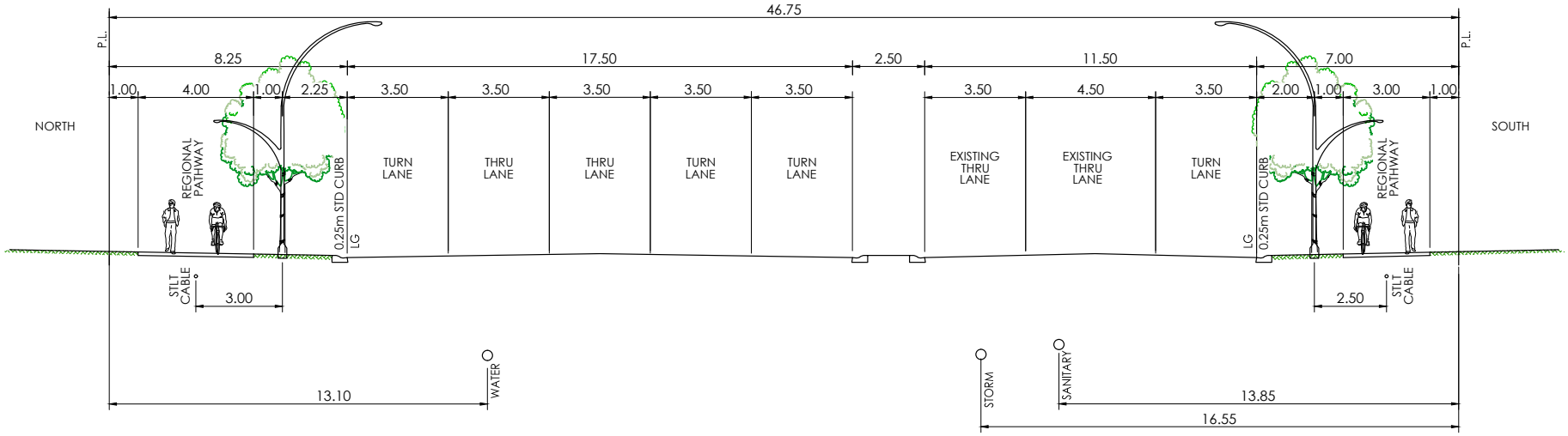


APPENDIX A
Road Cross Sections

Figure 7.1 Transportation Network Plan

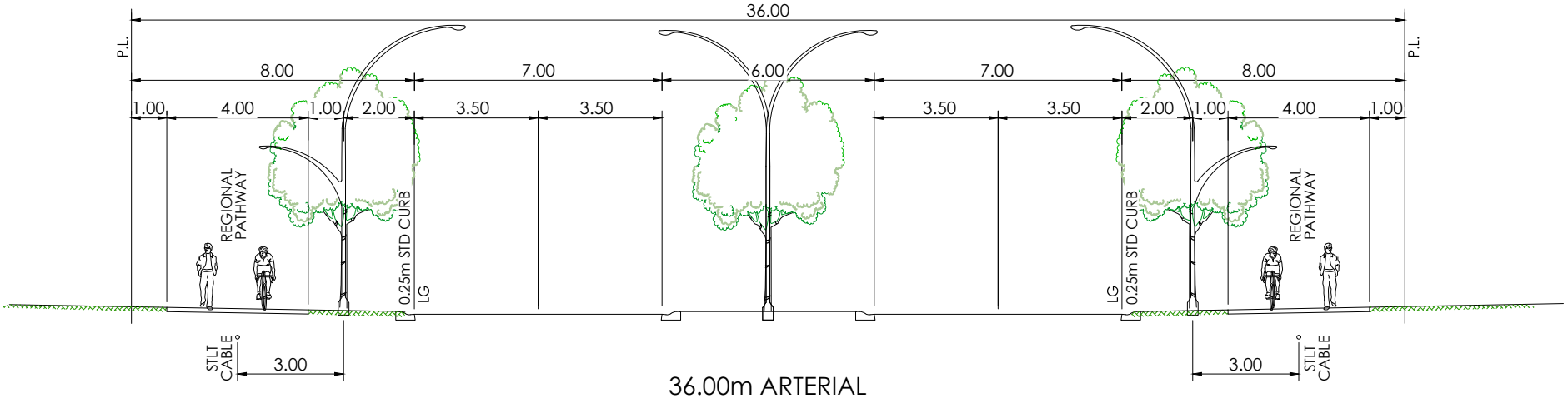


46.75m ARTERIAL STREET - James Walker Trail (1)



46.75m ARTERIAL

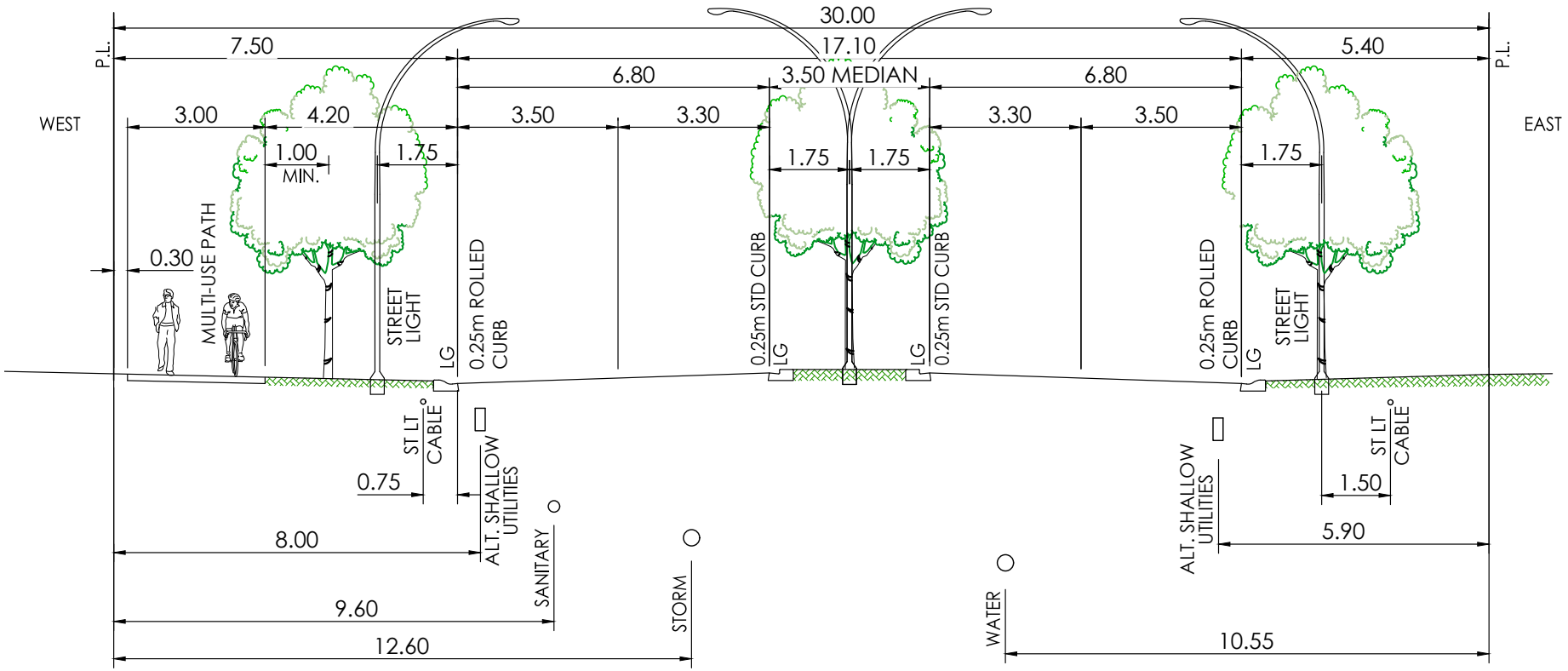
Scale 1:200



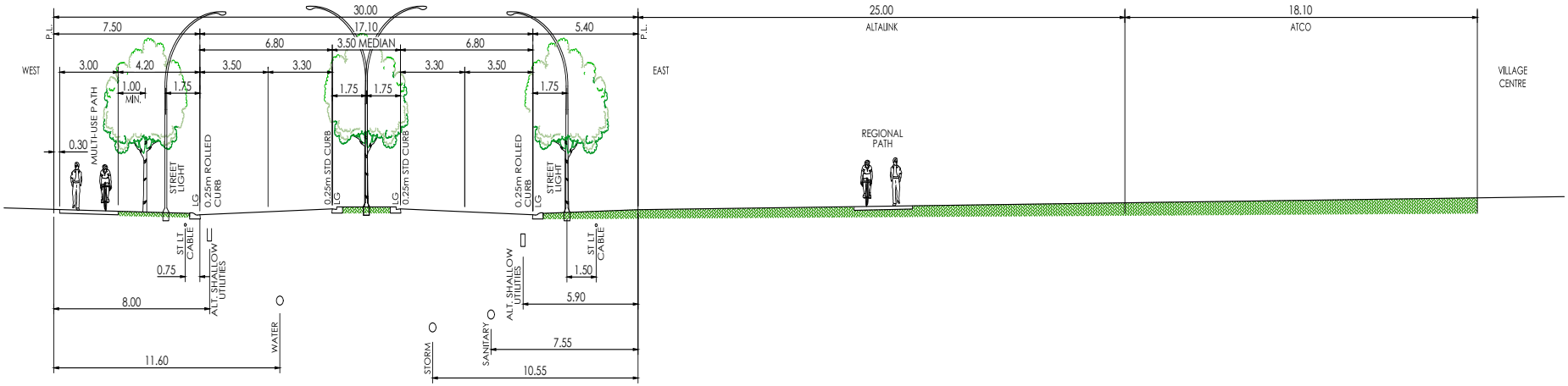
36.00m ARTERIAL

Scale 1:200

30.0m MODIFIED PRIMARY COLLECTOR STREET - River Heights Drive (3)

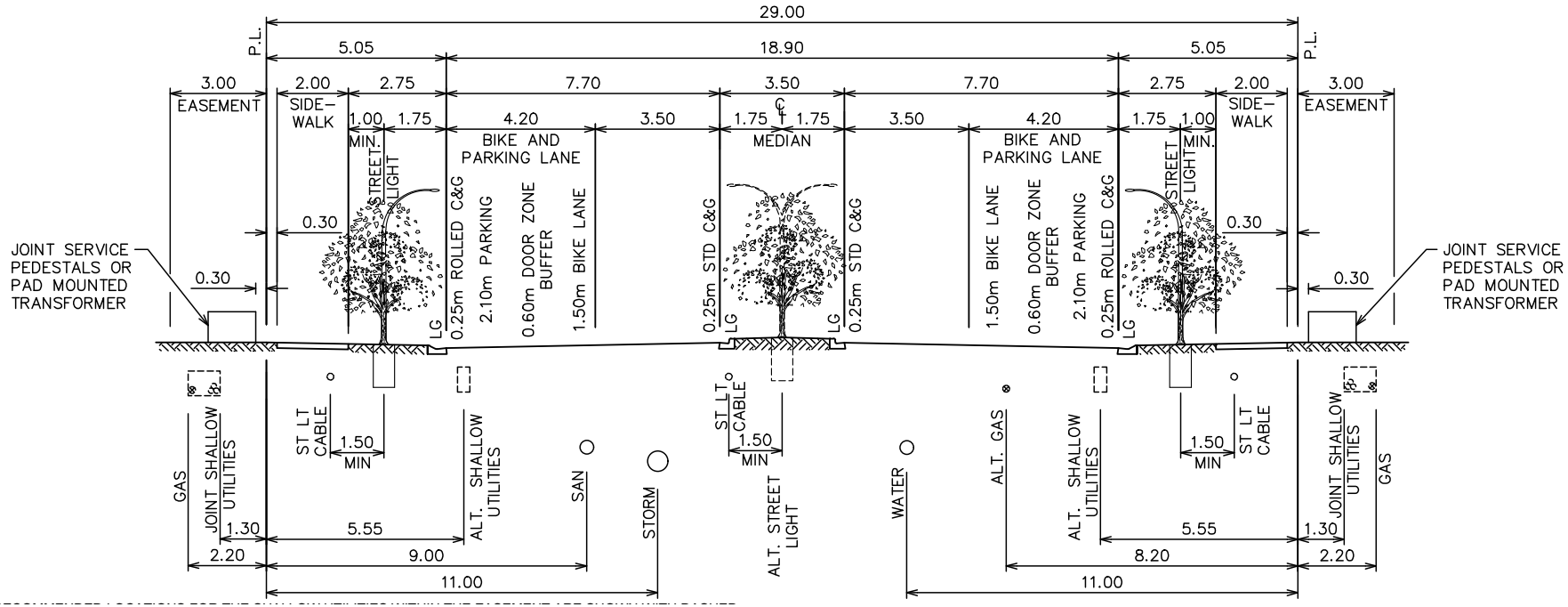


30.0m MODIFIED PRIMARY COLLECTOR STREET & 43.1m UTILITY RIGHT OF WAY - River Heights Drive (4)

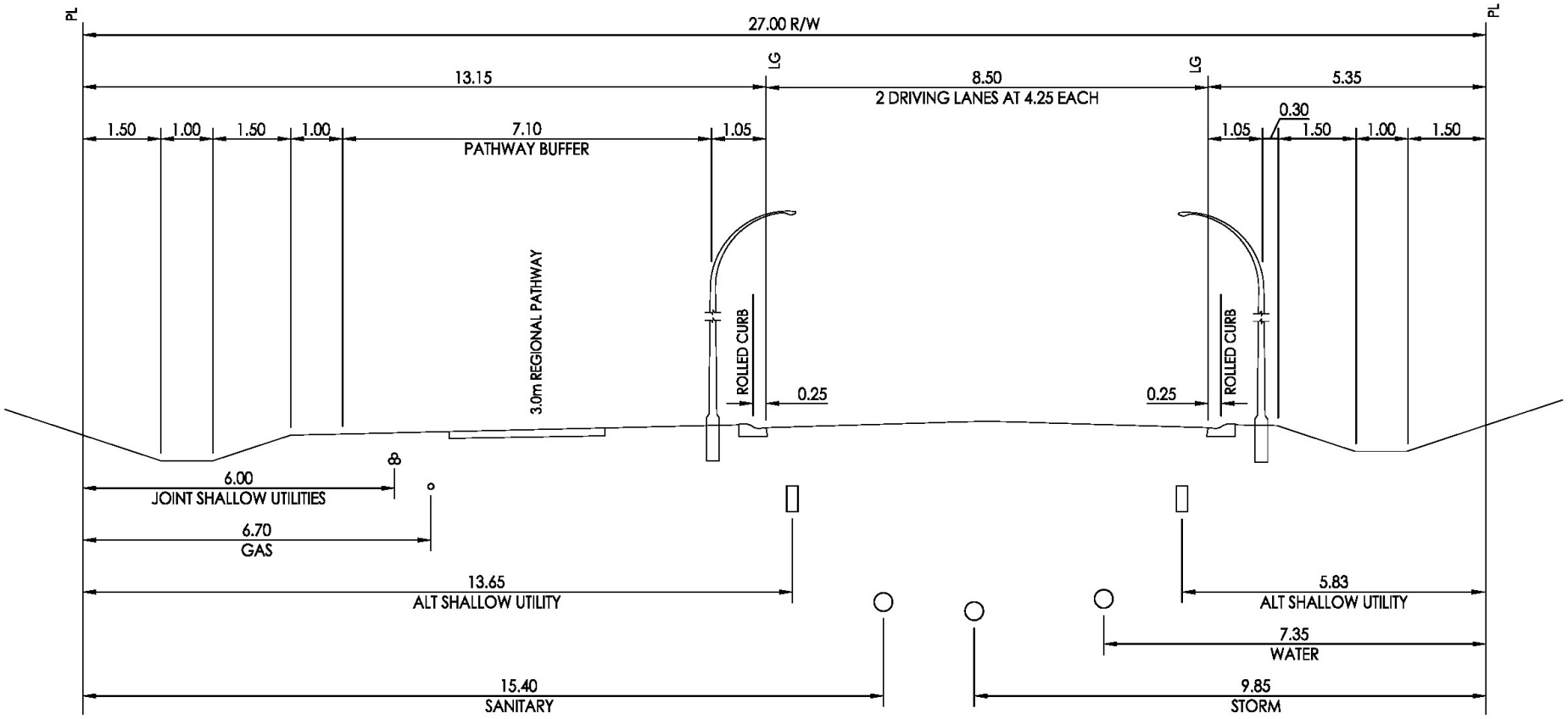


30m MODIFIED PRIMARY COLLECTOR - RIVER HEIGHTS DRIVE
Multi-Use Path One Side / 2.0m Separate Walk One Side

29.0m PRIMARY COLLECTOR STREET (5)

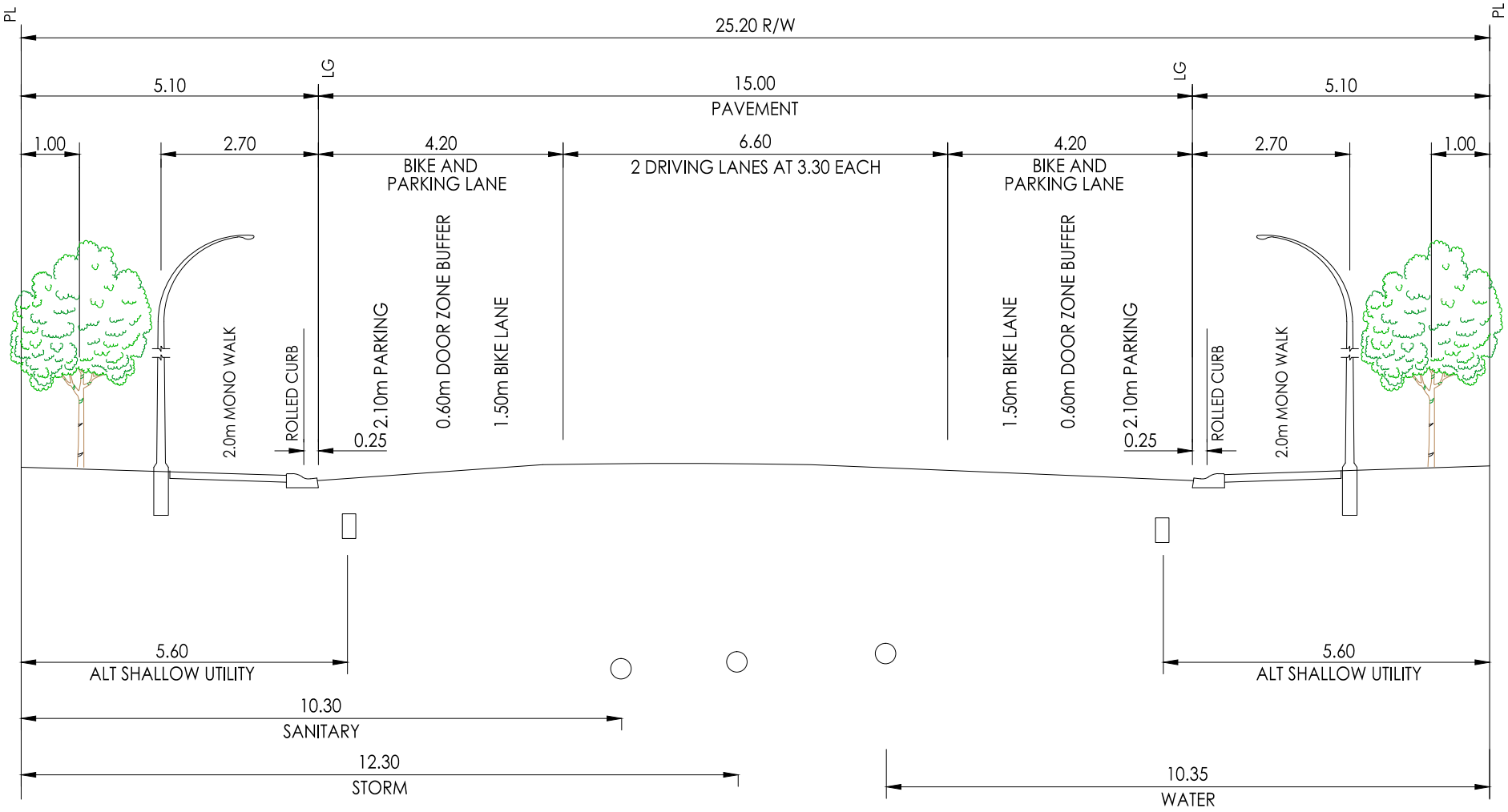


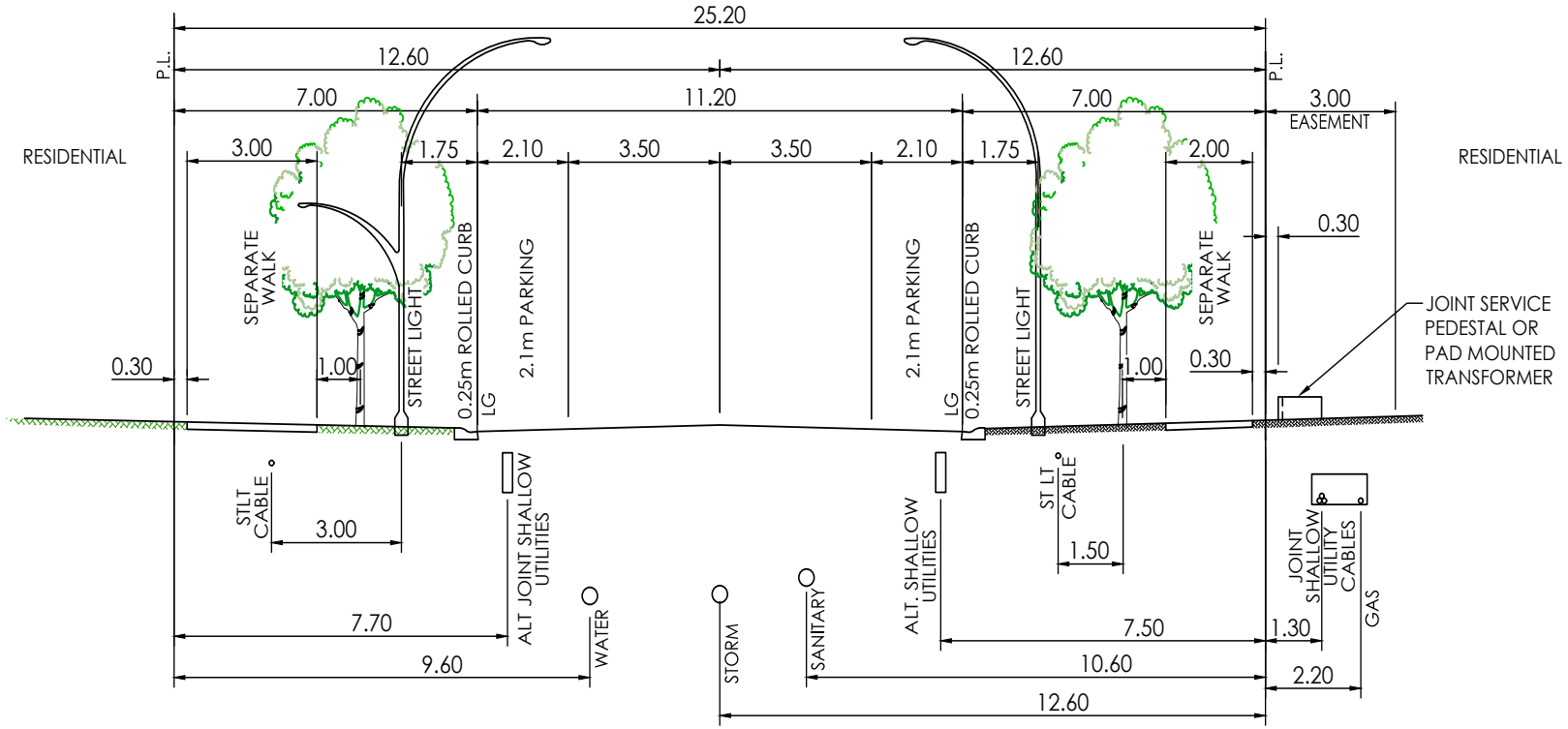
27.0m COLLECTOR STREET (6)



NOTE: *Road & Swale drainage to be picked up by interupt catch basins as required.*

25.2m COLLECTOR STREET (7)

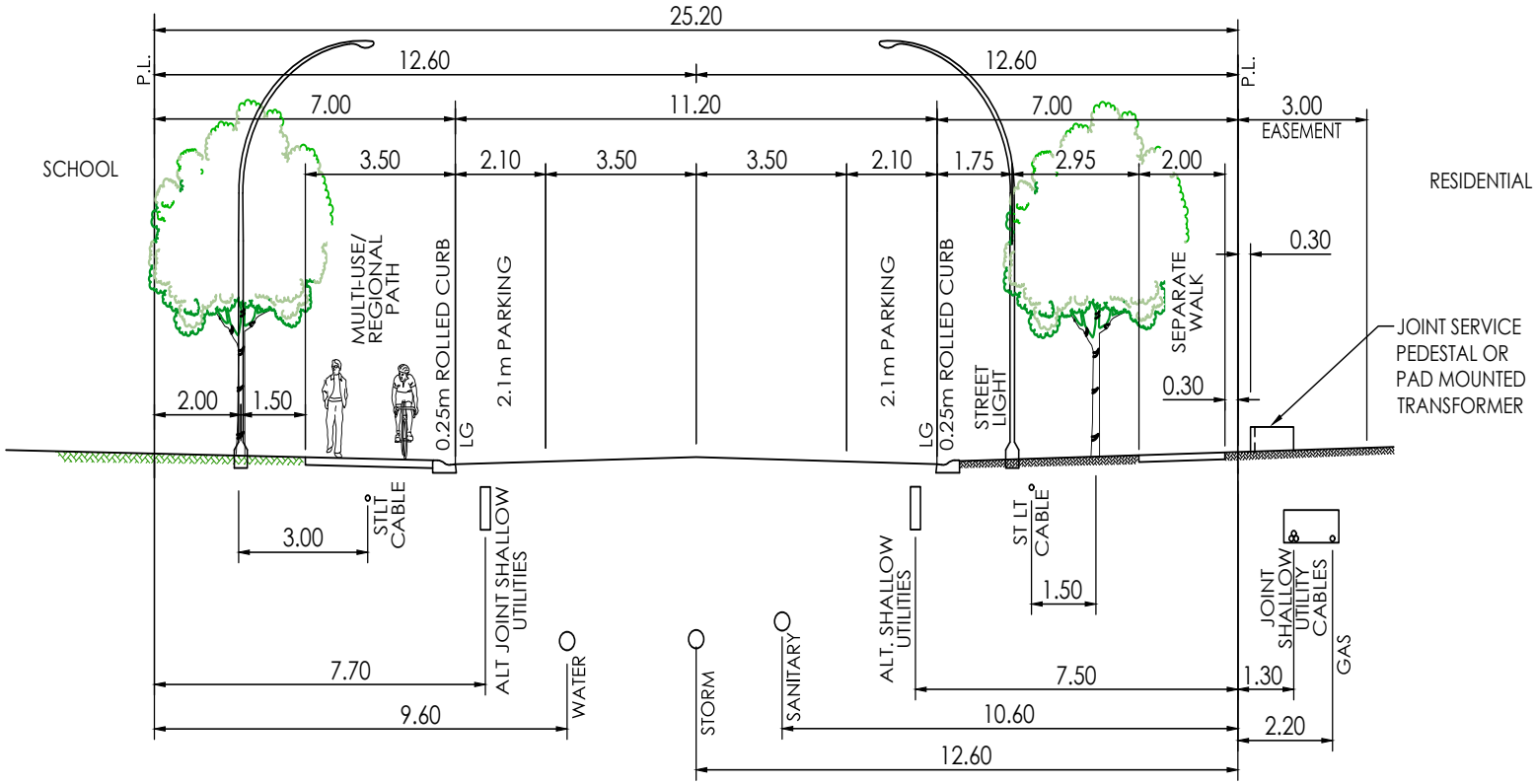




25.2m MODIFIED COLLECTOR

PARKING BOTH SIDES / 3.0m SEPARATE MULTI-USE PATH ONE SIDE / 2.0m SEPARATE WALK ONE SIDE

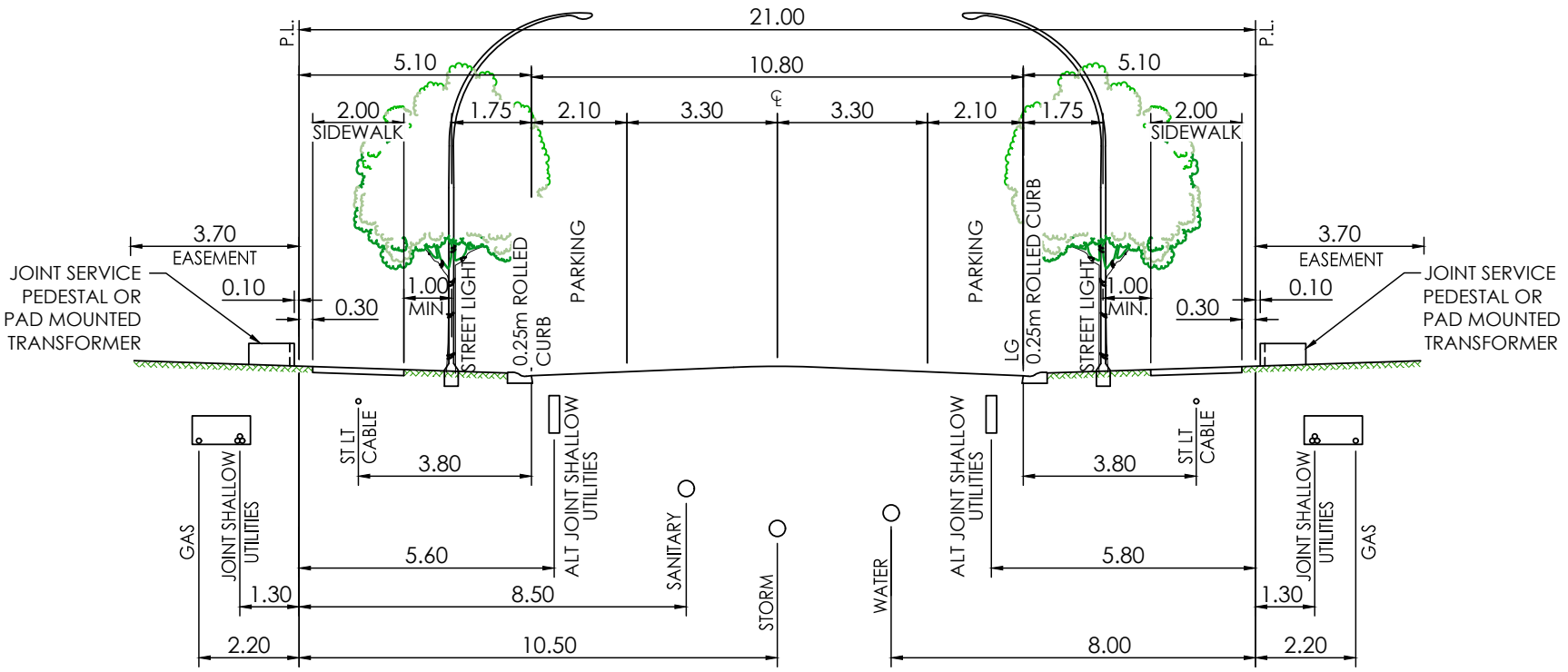
Scale 1:200



25.2m MODIFIED SCHOOL COLLECTOR

PARKING BOTH SIDES / 3.0m MULTI-USE MONO PATH ONE SIDE / 2.0m SEPARATE WALK ONE SIDE

Scale 1:200

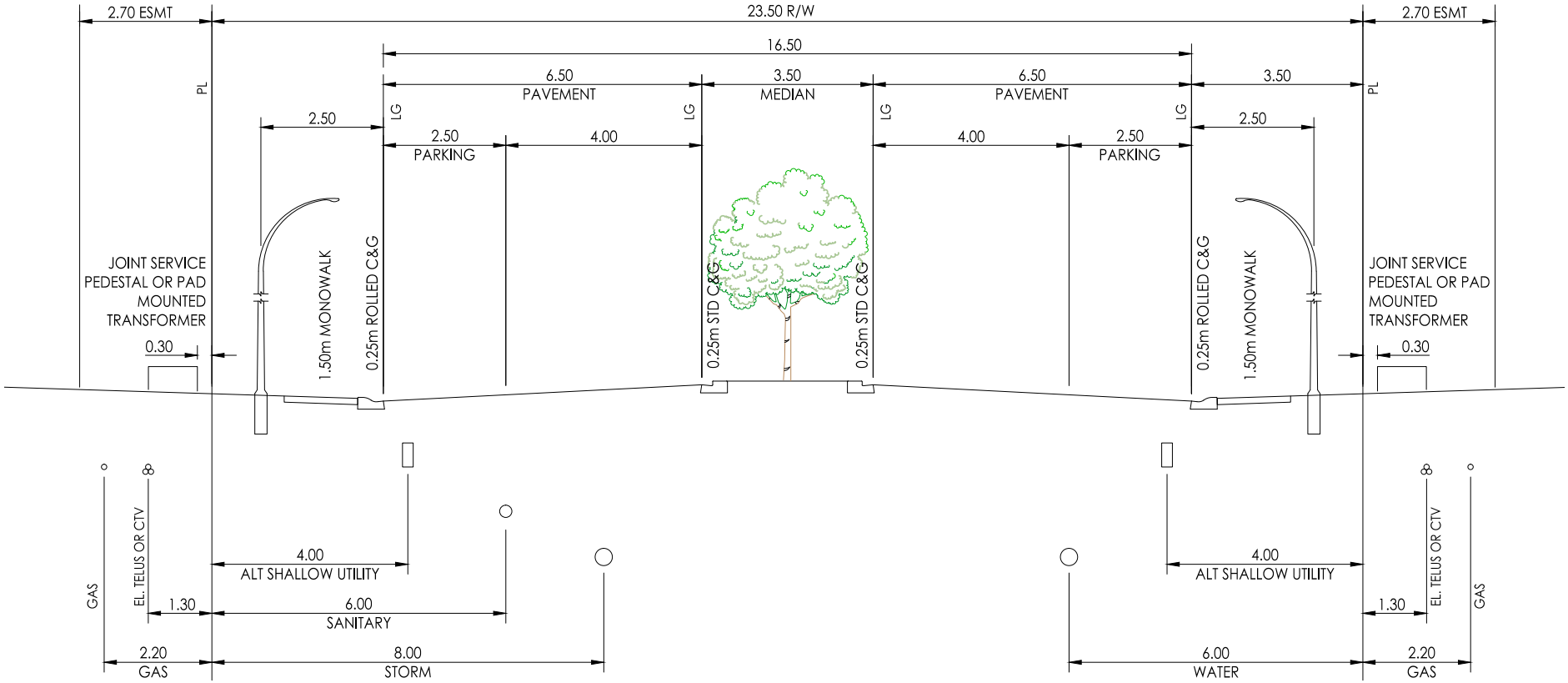


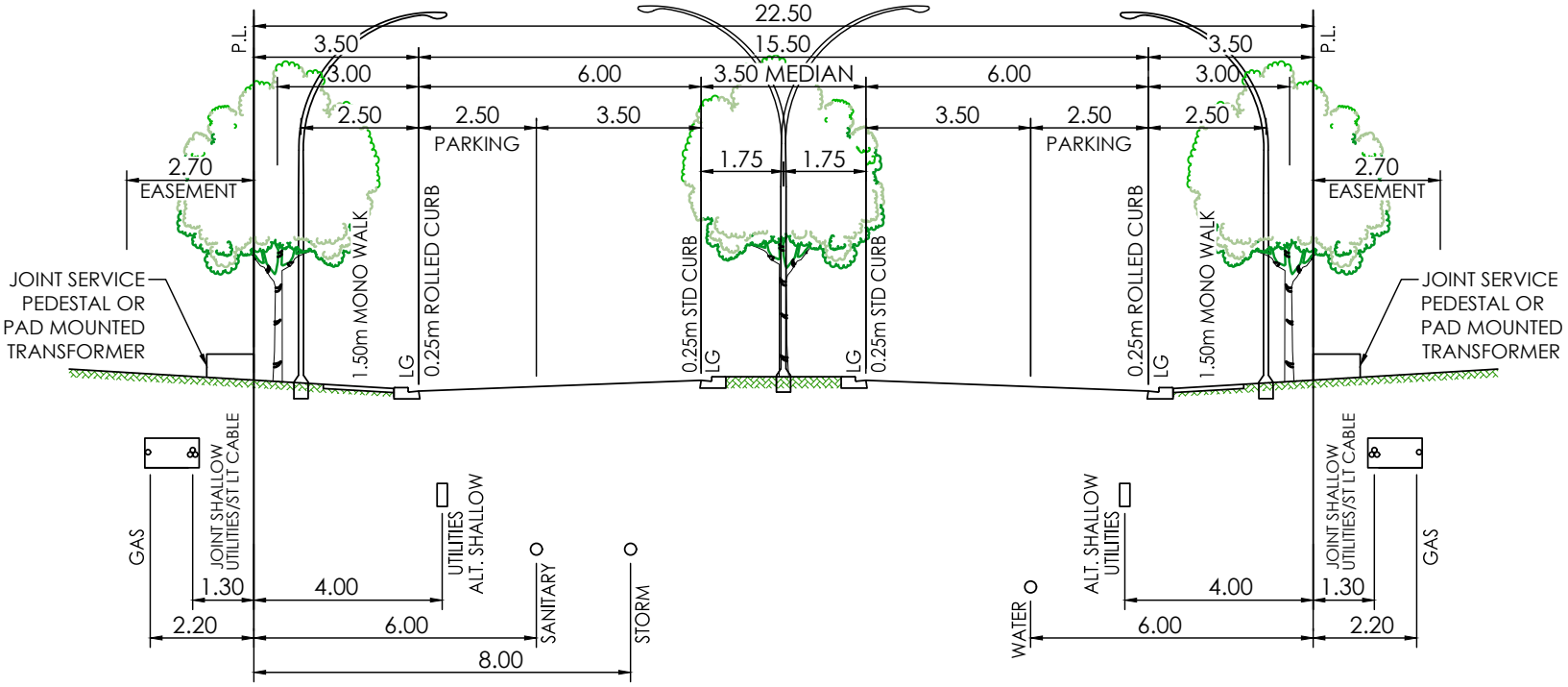
21.0m COLLECTOR

PARKING BOTH SIDES / 2.0m SEPARATE WALK BOTH SIDES

Scale 1:200

23.5m RESIDENTIAL ENTRANCE STREET (11)



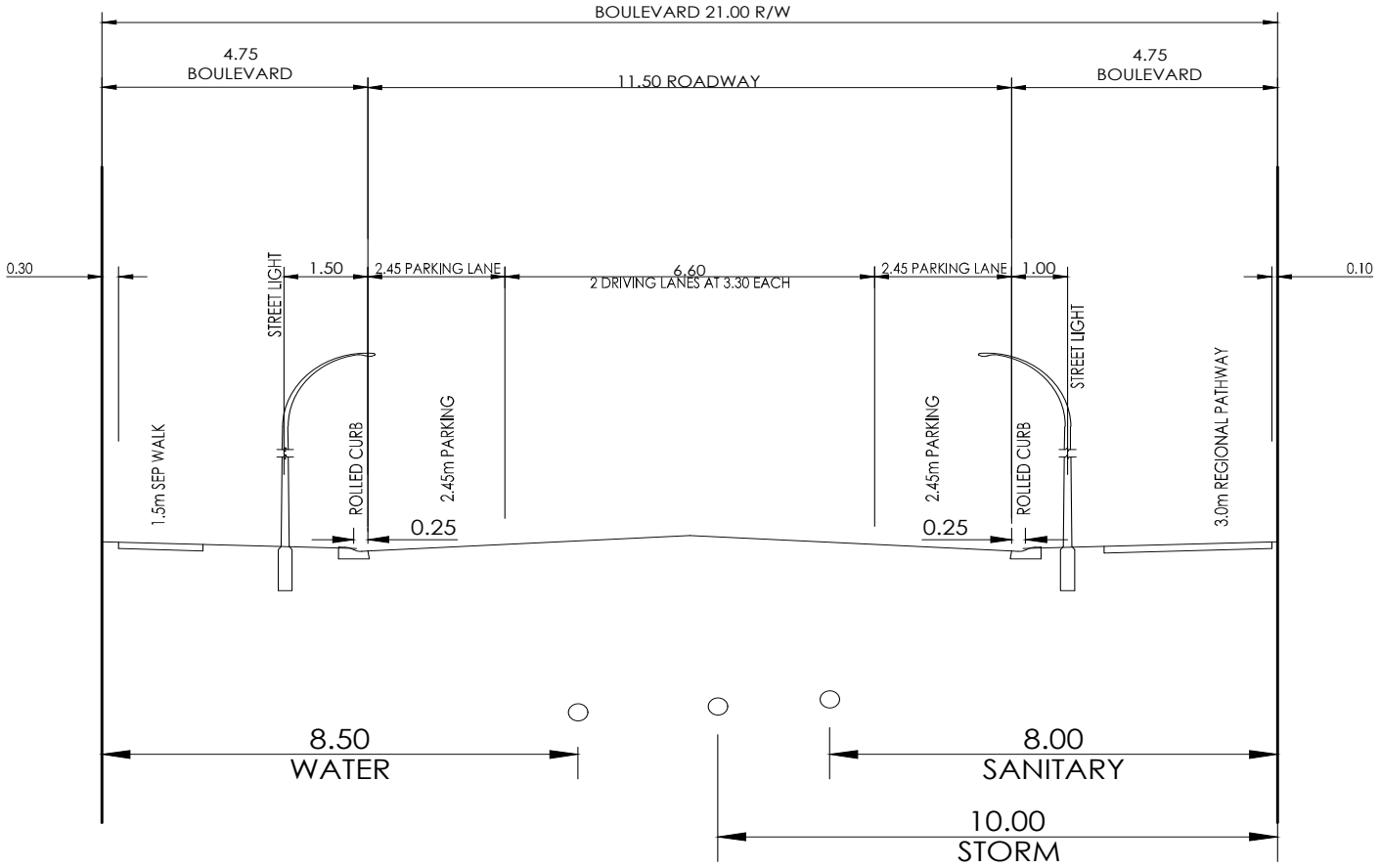


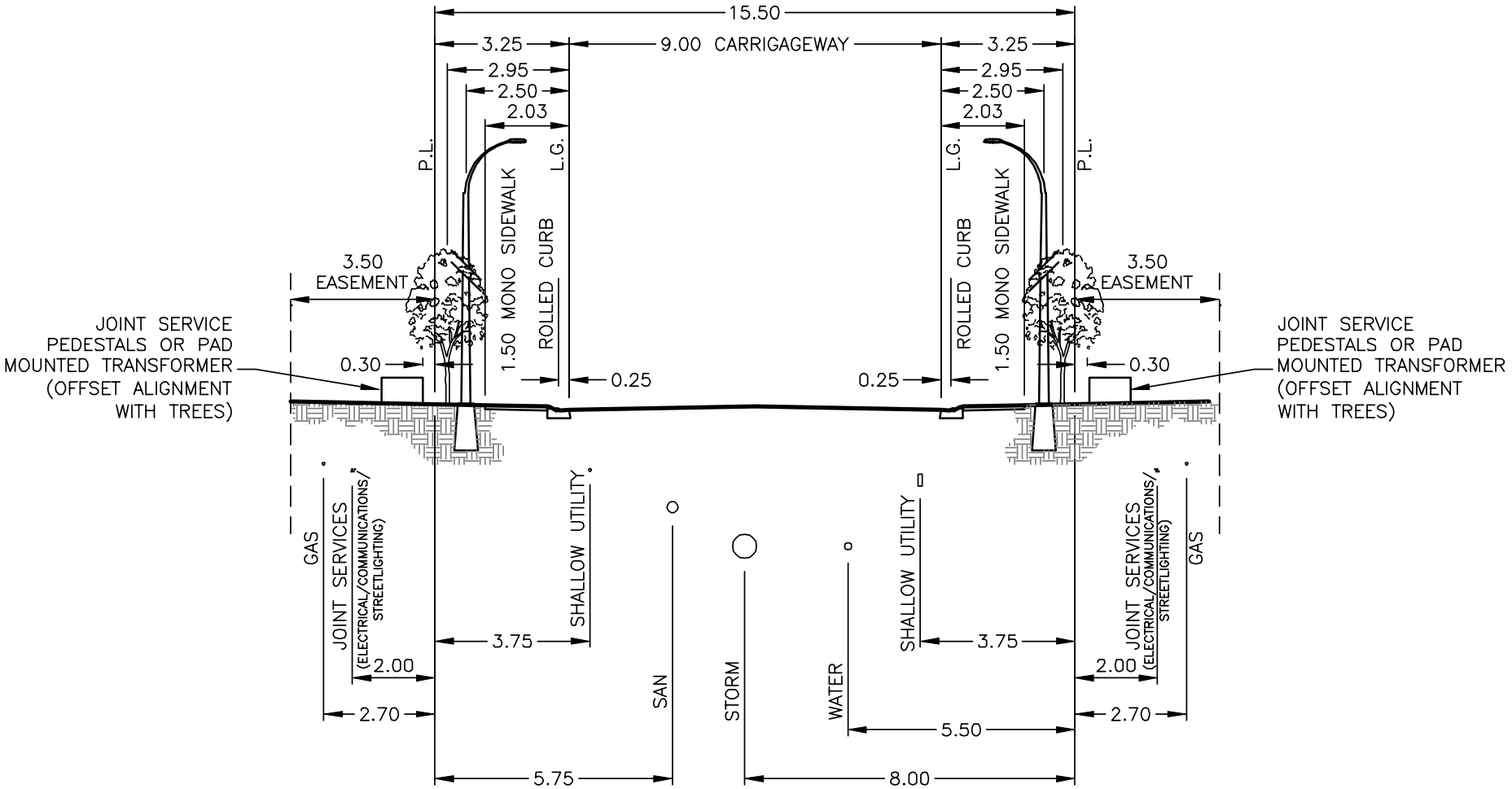
22.5 RESIDENTIAL ENTRANCE

PARKING BOTH SIDES / MONO-WALK BOTH SIDES

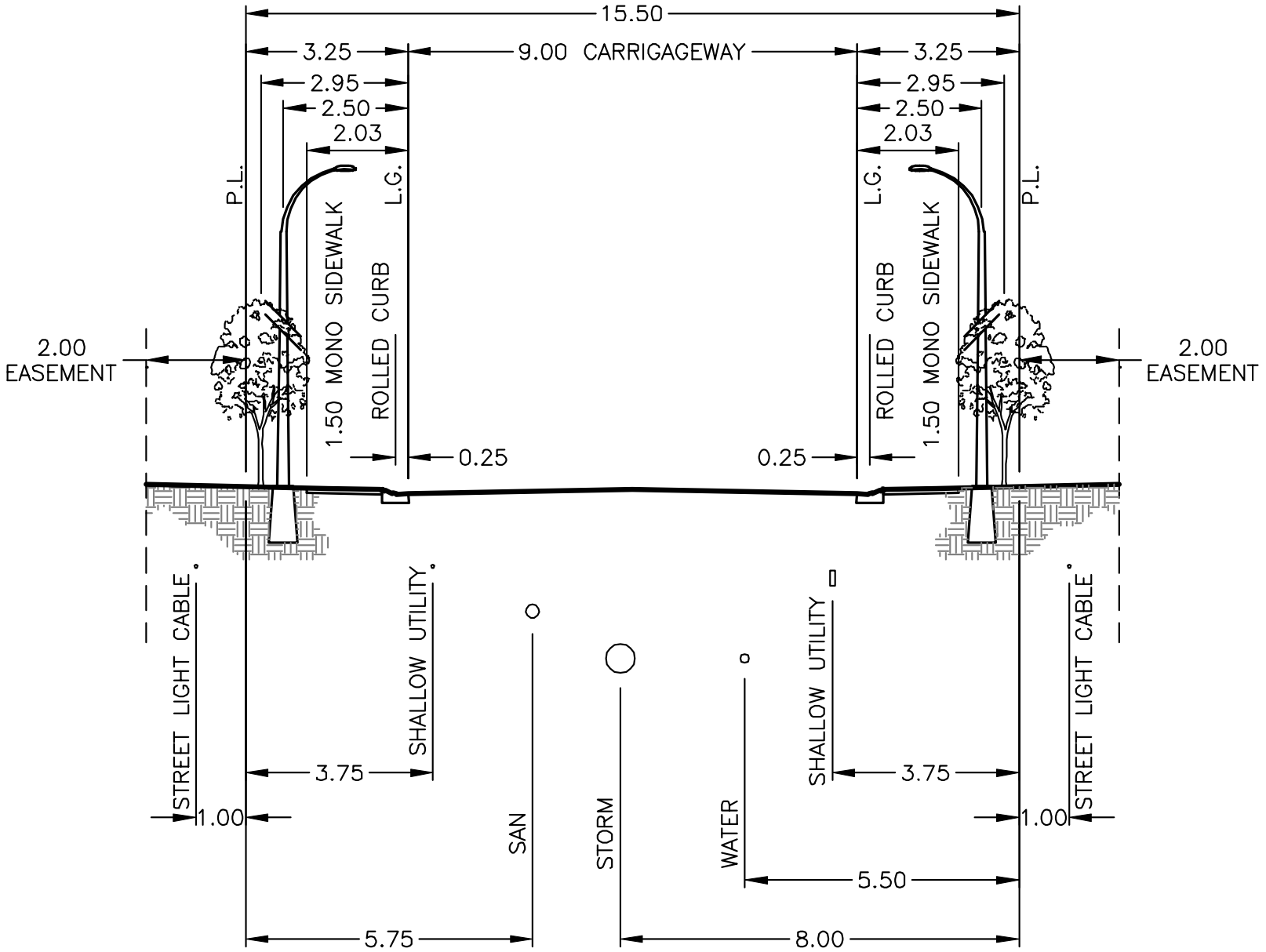
Scale 1:200

21.0m RESIDENTIAL STREET - Existing Willow Drive (13)

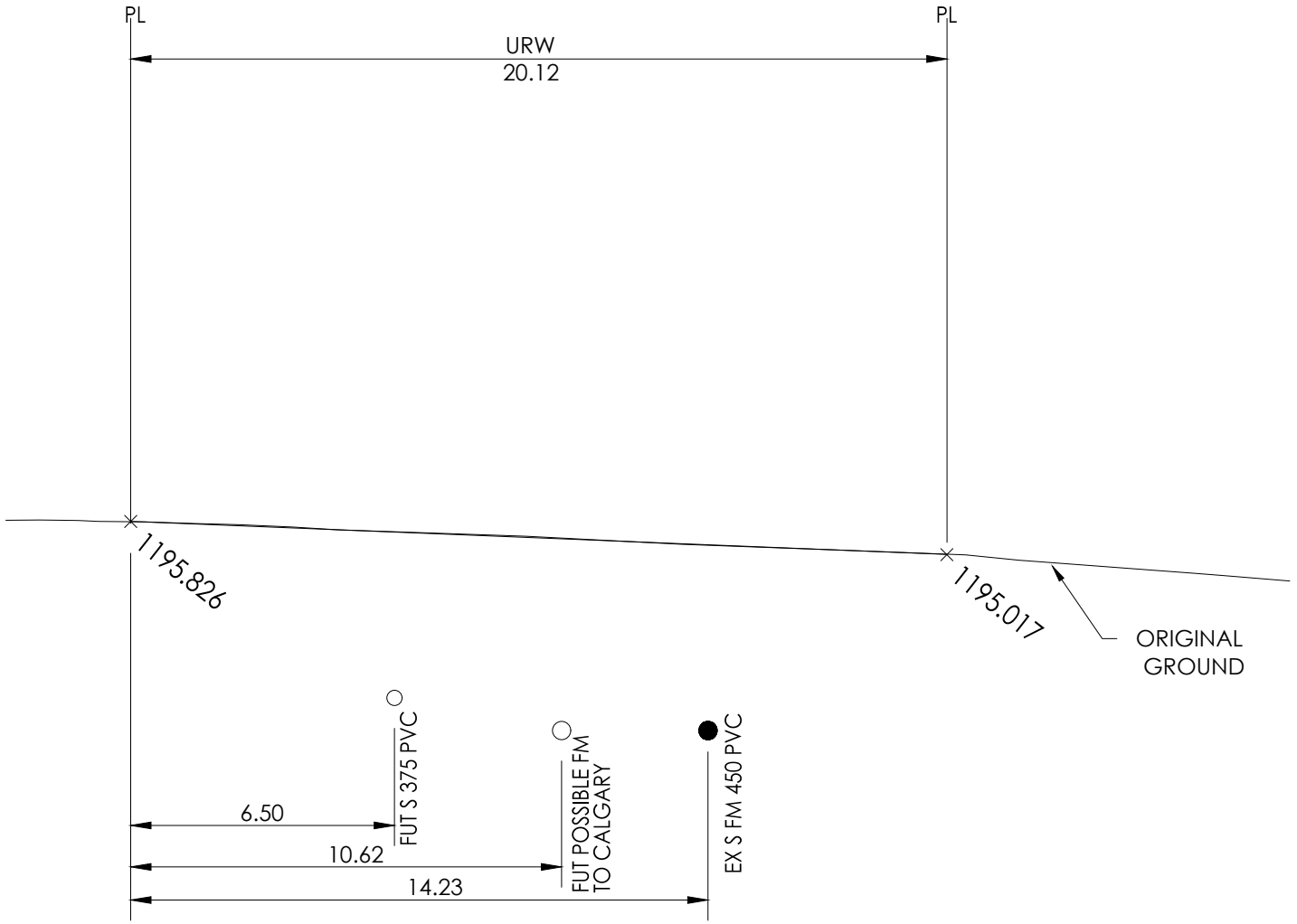



15.50
3.25
9.00 CARRIGAGEWAY
3.25
2.95
2.95
2.50
2.50
2.03
2.03
P.L.
L.G.
1.50 MONO SIDEWALK
ROLLED CURB
ROLLED CURB
L.G.
1.50 MONO SIDEWALK
P.L.
3.50
EASEMENT
3.50
EASEMENT
JOINT SERVICE PEDESTALS OR PAD MOUNTED TRANSFORMER (OFFSET ALIGNMENT WITH TREES)
0.30
0.25
0.25
0.30
JOINT SERVICE PEDESTALS OR PAD MOUNTED TRANSFORMER (OFFSET ALIGNMENT WITH TREES)
GAS
JOINT SERVICES (ELECTRICAL/COMMUNICATIONS/ STREETLIGHTING)
SHALLOW UTILITY
SAN
STORM
WATER
SHALLOW UTILITY
JOINT SERVICES (ELECTRICAL/COMMUNICATIONS/ STREETLIGHTING)
GAS
3.75
3.75
2.00
2.00
2.70
2.70
5.50
5.75
8.00

15.5m RESIDENTIAL LANE



20.12m UTILITY RIGHT OF WAY



APPENDIX B
Cochrane Plant List

Cochrane Plant List

Riparian Zones - Adjacent Bow River

Deciduous Trees

Water birch/Black Birch	*Betula occidentalis*
Paper birch	*Betula papyrifera*
Dwarf birch	*Betula pumila glandulifera*
Narrow-leaf Cottonwood	*Populus angustifolia*
Balsam poplar	*Populus balsamifera*
Western Cottonwood	*Populus deltoides*

Tall Shrubs

River alder	*Alnus tenuifolia*
Green alder	*Alnus crispa*
Bebb's Willow	*Salix bebbianna*
Pussy Willow	*Salix discolor*
Sandbar Willow	*Salix exigua*

Medium Shrubs

Red Osier Dogwood	*Cornus sericea spp. Sericea*
Sandbar Willow	*Salix exigua*
Yellow pussy willow	*Salix lutea*
Buckbrush	*Symphoricarpos occidentalis*

Low Shrubs

Buffaloberry	*Shepherdia canadensis*

Escarpment Planting

Deciduous Trees

Siberian Larch	*Larix sibirica*
Narrow-leaf Cottonwood	*Populus angustifolia*
Balsam poplar	*Populus balsamifera*
Western Cottonwood	*Populus deltoides*
Aspen Poplar	*Populus tremuloides*

Coniferous Trees

White Spruce	*Picea glauca*
Lodgepole Pine	*Pinus contorta 'Latifolia'*

Tall Shrubs

Saskatoon	*Amelanchier alnifolia*
Green alder	*Alnus crispa*
Silverberry/Wolf Willow	*Elaeagnus commutata*
Bebb's Willow	*Salix bebbiana*

Medium Shrubs

Red Osier Dogwood	*Cornus sericea*
Golden Currant	*Ribes aureum*
Yellow Pussy Willow	*Salix lutea*

Low Shrubs

Prickly Rose	*Rosa acicularis*

Foothills Parkland Grasslands - native

Medium Shrubs

Shrubby Cinquefoil	*Potentilla fruticosa*
Willow Species	*Salix spp.*
Buckbrush	*Symphorcarpos occidentalis*

Low Shrubs

Common Bearberry	*Arctostaphylos uva-ursi*
Creeping Juniper	*Juniperus horizontalis*
Prickly Rose	*Rosa acicularis*

Foothills Parkland Shrublands - native

Trees

White Spruce	*Picea glauca*
Narrow Leaf Cottonwood	*Populus angustifolia*
Balsam Poplar	*Populus balsamifera*

Tall Shrubs

Saskatoon	*Amelanchier alnifolia*
Water Birch	*Betula occindentalis*
Silverbery/Wolfwillow	*Elaeagnus commutata*
Beaked Willow	*Salix bebbiana*
Sandbar Willow	*Salix exigua*
Yellow Willow	*Salix lutea*

Medium Shrubs

Dwarf Birch	*Betula glandulosa*
Red Osier Dogwood	*Cornus sericea*
Shrubby Cinquefoil	*Potentilla fruticosa*
Wild Red Raspberry	*Rubus idaeus*
Buckbrush	*Symphoricarpos albus*

Low Shrubs

Common Bearberry	*Arctostaphylos uva-ursi*
Prickly Rose	*Rosa acicularis*
Common Wild Rose	*Rosa woodsii*

Foothills parkland Forests - native

Trees

White Spruce	*Picea glauca*
Lodgepole Pine	*Pinus contorta*
Limber Pine	*Pinus flexilis*
Balsam Poplar	*Populus balsamifera*
Aspen	*Populus tremuloides*

Tall Shrubs

Green Alder	*Alnus crispa*
Saskatoon	*Amelanchier alnifolia*
Wolf Willow	*Elaeagnus commutata*
Wild Red Raspberry	*Rubus idaeus*
Beaked Willow	*Salix bebbiana*
Buffaloberry	*Shepherdia canadensis*

Medium Shrubs

Red-Osier Dogwood	*Cornus sericea spp. Sericea*
Shrubby Cinquefoil	*Potentilla fruticosa*
White Meadowsweet	*Spiraea betulifolia*
Snowberry (Buckbrush)	*Symphoricarpos albus*

Low Shrubs

Common Bearberry	*Arctostaphylos uva-ursi*
Creeping Juniper	*Juniperous horizontalis*
Prickly Rose	*Rosa acicularis*

Urban Parks

Trees

Spring Snow Flowering Crab	*Malus x 'Spring Snow'*
White Spruce	*Picea glauca*
Balsam Poplar	*Populus balsamifera*
Prairie Sky Poplar	*Pupulus x canadensis 'Prairie Sky'*
Aspen	*Populus tremuloides*
Mayday	*Prunus padus 'Commutata'*
Mountain Ash	*Sorbus americana*
Ivory Silk Tree Lilac	*Syringa reticulata 'Ivory Silk'*

Tall Shrubs

Miss Kim Lilac	*Syringa patula 'Miss Kim'*
Common Lilac	*Syringa vulgaris*

Medium Shrubs

Cotoneaster	*Cotoneaster acutifolia*
Red-Osier Dogwood	*Cornus sericea*
Potentilla spp.	*Potentilla fruticosa*
Spirea spp.	*Spiraea trilobata*
Compact Cranberry	*Viburnum trilobum 'Compactum'*

Low Shrubs

Common Bearberry	*Arctostaphylos uva-ursi*
Little Blue Clematis	*Clematis occidentalis*
Ground Juniper	*Juniperus communis*
Prickly Rose	*Rosa acicularis*

Ornamental Grasses

Karl Foerster Feather Reed Grass	*Calamagrostis acutiflora 'Karl Foerster'*
Elijah Blue Fescue	*Festuca ovina glauca 'Elijah Blue'*
Little Blue Stem Grass	*Schizachyium scoparium*

Street Trees

Silver Cloud Maple	*Acer saccharinum 'Silver Cloud'*
Ohio Buckeye	*Aesculus glabra*
Snowbird Hawthorn	*Crataegus mordenensis 'Snowbird'*
Foothills Green Ash	*Fraxinus pennsylvanica 'Heuver'*
Nobility White Ash	*Fraxinus americana 'Nobility'*
Tuxedo White Ash	*Fraxinus americana 'Durgar'*
Flowering Crab species	*Malus x spp*
Prairie Sky Poplar	*Populus x canadensis 'Prairie Sky'*
Midnight Schubert Chokecherry	*Prunus virginiana 'Midnight'*
Ivory Silk Tree Lilac	*Syringa reticulata 'Ivory Silk'*
American Elm	*Ulmus americana*
Brandon Elm	*Ulmus americana 'Brandon'*

Native Seed Mixes - Urban

Grass Species

Western Wheatgrass	*Agropyron smithii*	15%
Slender Wheatgrass	*Agropyron trachycaulum*	10%
Blue Grama Grass	*Bouteloua gracilis*	5%
Rough Fescue	*Festuca campetris*	20%
Rocky Mountain Fescue	*Festuca saximontana*	20%
June Grass	*Koeleria macrantha*	5%
Indian Ricegrass	*Oryzopsis hymenoides*	15%
Green Needle Grass	*Stipa viridula*	5%
		95%

Forbs Species

Yarrow	*Achillea millefolium*	1%
Cut-Leaved Anemone	*Anemone multifida*	1%
Yellow Columbine	*Aquilegia flavescens*	1%
Sticky Purple Geranium	*Geranium Viscosissimum*	2%
		5%
		100%

Bioswale Seed Mix - Urban

Western Wheatgrass	*Agropyron smithii*	15%
Awned Wheatgrass	*Agropyron trachycaulum var. Unilaterale*	15%
Northern Reedgrass	*Calamagrostis inexpansa*	15%
Awned Sedge	*Carex atherodes*	10%
Creeping Spike-Rush	*Eleocharis palustris*	5%
Wire Rush	*Juncus balticus*	5%
Fowl Bluegrass	*Poa palustris*	15%
Tufted hairgrass	*Deschampsia caespitosa*	15%
Junegrass	*koeleria macrantha*	5%
		100%