

# Tower Crossing Secondary Plan

OCP – Part B. 15



**Contents**

|       |   |           |
|-------|---|-----------|
| 1.1   | <b>BACKGROUND.....</b>                          | <b>3</b>  |
| 1.2   | <b>SITE CONTEXT.....</b>                        | <b>3</b>  |
| 1.3   | <b>PROJECT VISION.....</b>                      | <b>5</b>  |
| 1.4   | <b>GOALS AND OBJECTIVES .....</b>               | <b>5</b>  |
| 1.5   | <b>OFFICIAL COMMUNITY PLAN CONFORMITY .....</b> | <b>5</b>  |
| 2     | <b>Site Analysis.....</b>                       | <b>6</b>  |
| 2.1   | <b>TOPOGRAPHY .....</b>                         | <b>6</b>  |
| 2.2   | <b>NATURAL FEATURES .....</b>                   | <b>7</b>  |
| 2.3   | <b>BUILT FEATURES.....</b>                      | <b>8</b>  |
| 2.4   | <b>ENVIRONMENTAL OVERVIEW .....</b>             | <b>9</b>  |
| 2.5   | <b>HERITAGE RESOURCES .....</b>                 | <b>9</b>  |
| 2.6   | <b>RETAIL IMPACT ANALYSIS.....</b>              | <b>9</b>  |
| 3     | <b>Land Use Strategy.....</b>                   | <b>10</b> |
| 3.1   | <b>COMMUNITY DESIGN.....</b>                    | <b>10</b> |
| 3.1.1 | OVERVIEW.....                                   | 10        |
| 3.1.2 | POLICY.....                                     | 10        |
| 3.2   | <b>RESIDENTIAL.....</b>                         | <b>10</b> |
| 3.2.1 | OVERVIEW.....                                   | 10        |
| 3.2.2 | POLICY.....                                     | 10        |
| 3.3   | <b>COMMERCIAL.....</b>                          | <b>12</b> |
| 3.3.1 | OVERVIEW.....                                   | 12        |
| 3.3.2 | POLICY.....                                     | 12        |
| 3.4   | <b>CIVIC/INSTITUTIONAL.....</b>                 | <b>13</b> |
| 3.4.1 | OVERVIEW.....                                   | 13        |
| 3.4.2 | POLICY.....                                     | 13        |
| 3.5   | <b>OPEN SPACE/RECREATION .....</b>              | <b>14</b> |
| 3.5.1 | OVERVIEW.....                                   | 14        |
| 3.5.2 | POLICY.....                                     | 14        |
| 4     | <b>Servicing Strategy.....</b>                  | <b>19</b> |

|            |   |           |
|------------|---|-----------|
| <b>4.1</b> | <b>TRANSPORTATION .....</b>   | <b>19</b> |
| 4.1.1      | OVERVIEW.....   | 19        |
| 4.1.2      | POLICY.....   | 19        |
| <b>4.2</b> | <b>WATER.....</b>   | <b>21</b> |
| 4.2.1      | OVERVIEW.....   | 21        |
| 4.2.2      | POLICY.....   | 23        |
| <b>4.3</b> | <b>WASTEWATER.....</b>  | <b>24</b> |
| 4.3.1      | OVERVIEW.....   | 24        |
| 4.3.2      | POLICY.....   | 25        |
| <b>4.4</b> | <b>STORM WATER.....</b>   | <b>28</b> |
| 4.4.1      | OVERVIEW.....   | 28        |
| 4.4.2      | POLICY.....   | 29        |
| 5          | Implementation.....   | 36        |
| <b>5.1</b> | <b>PHASING/ STAGING .....</b>   | <b>36</b> |
| 5.1.1      | OVERVIEW.....   | 36        |
| 5.1.2      | POLICY.....   | 36        |
| 6          | Appendices .....  | 37        |
| <b>6.1</b> | <b>APPENDIX A – NON-BINDING INFORMATION.....</b>                                  | <b>37</b> |
|            | APPENDIX A.1 – POTENTIAL TRANSIT ROUTE PLAN .....                                 | 37        |
|            | APPENDIX A.2 – POTENTIAL STREET CROSS SECTIONS .....                              | 37        |
|            | APPENDIX A.3 – POTENTIAL CHUKA BOULEVARD AND DEWDNEY<br>AVENUE INTERSECTION ..... | 37        |

## **1.1 BACKGROUND**

The intent of this Secondary Plan is to provide a policy framework for directing land-use, transportation and utility servicing for lands located north of Victoria Avenue, on the east periphery of the City (Figure 1). The “Tower Crossing Secondary Plan” envisions and supports a development that includes commercial, residential, mixed-use and compatible light industrial land uses.

It is expected that all subsequent concept plans, rezoning, and subdivision will be in conformity with this Secondary Plan. Concept plans, which provide a detailed solution for land-use and servicing, will be prepared for each development phase. Combined, the policies of this Secondary Plan and the subsequent concept plans will help ensure that Tower Crossing evolves into a well-designed development, which is in conformity with the guiding policies of the City’s Official Community Plan (OCP).

## **1.2 SITE CONTEXT**

The Plan area is approximately 116.2 hectares in size and is located immediately north of Victoria Avenue, on the City’s east periphery (N1/2 of Section 23-Twp. 17-Rge. 19). The Plan area is bounded by Victoria Avenue to the south, Tower Road to the east, Range Road 2192 to the west and Dewdney Avenue to the north (see Figure 2). The south portion of the Plan area is comprised of existing and defunct highway-oriented commercial development; the north portion is comprised mainly of agricultural land and an existing farmstead. The Plan area was annexed into the City from the RM of Sherwood in 2014.

The Plan area is located along the primary highway-commercial development corridor of the City, and forms part of a major gateway into the City. Existing land uses, located adjacent to the Plan area, include large-format retail, commercial service, hotels and gas bars. The lands directly south of the Plan area (south of Victoria Avenue) are also intended for commercial development. The Plan area, therefore, forms part of a larger commercial district and gateway, and will contribute to the growing market demand for commercial retail and services within the city and region.

Figure 1: Regional Context Map

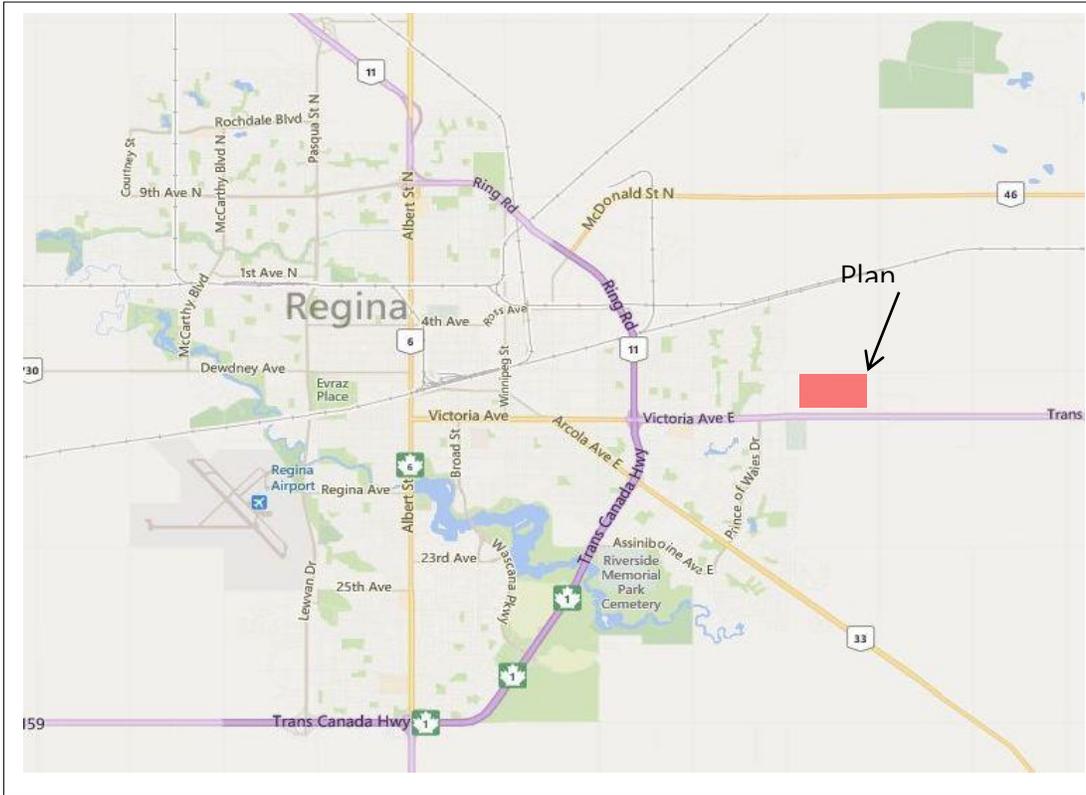


Figure 2: Local Context Map

### **1.3 PROJECT VISION**

The Plan area will provide a collective integration of land uses (commercial, residential, mixed use and compatible light industrial) that will promote economic, social and environmental sustainability consistent with the OCP. Major commercial developments will serve as the area’s economic foundation, with mixed-use and residential developments at a scale and location conducive to efficient land use, “complete neighbourhoods” and quality urban design. The development will embrace its regional function as a future transit node and regional gateway and will facilitate the harmonious reconciliation of its core uses with the preservation of natural features, civic and cultural amenities.

### **1.4 GOALS AND OBJECTIVES**

Key goals and objectives of this Plan are to:

- Preserve ecological and key natural features such as existing watercourse corridors.
- Design the development holistically, by enabling adequate pedestrian, cycling and vehicular connectivity to and from major arterial commercial areas.
- Provide sufficient road connections to the surrounding arterial roads at safe locations to efficiently distribute site traffic, to minimize circuitous travel, and to accommodate the early implementation of transit service.
- Phase development to coincide with the provision of servicing and transportation infrastructure.
- Incorporate sustainable elements in the planning of the new community. This would include protection of the natural environment, consideration of cultural and social amenities.
- Provide adequate active recreational space and recreational facilities within an integrated park system.
- Provide for efficient use of planned water and sewer services within an overall development servicing strategy.

### **1.5 OFFICIAL COMMUNITY PLAN CONFORMITY**

This Secondary Plan supports a land-use and phasing strategy that conforms to the OCP. Notably, this Secondary Plan supports commercial and compatible light industrial development as a phasing priority, adjacent to Victoria Avenue. Commercial development will incorporate design features that support active transportation, integration with adjacent residential areas and a high-quality public realm, in accordance with OCP policy. This Secondary Plan also identifies land for future residential development and includes a strategy for ensuring that the phasing and

timing of development is in accordance with the general guiding policies of Part A of the OCP relating to growth development and phasing.

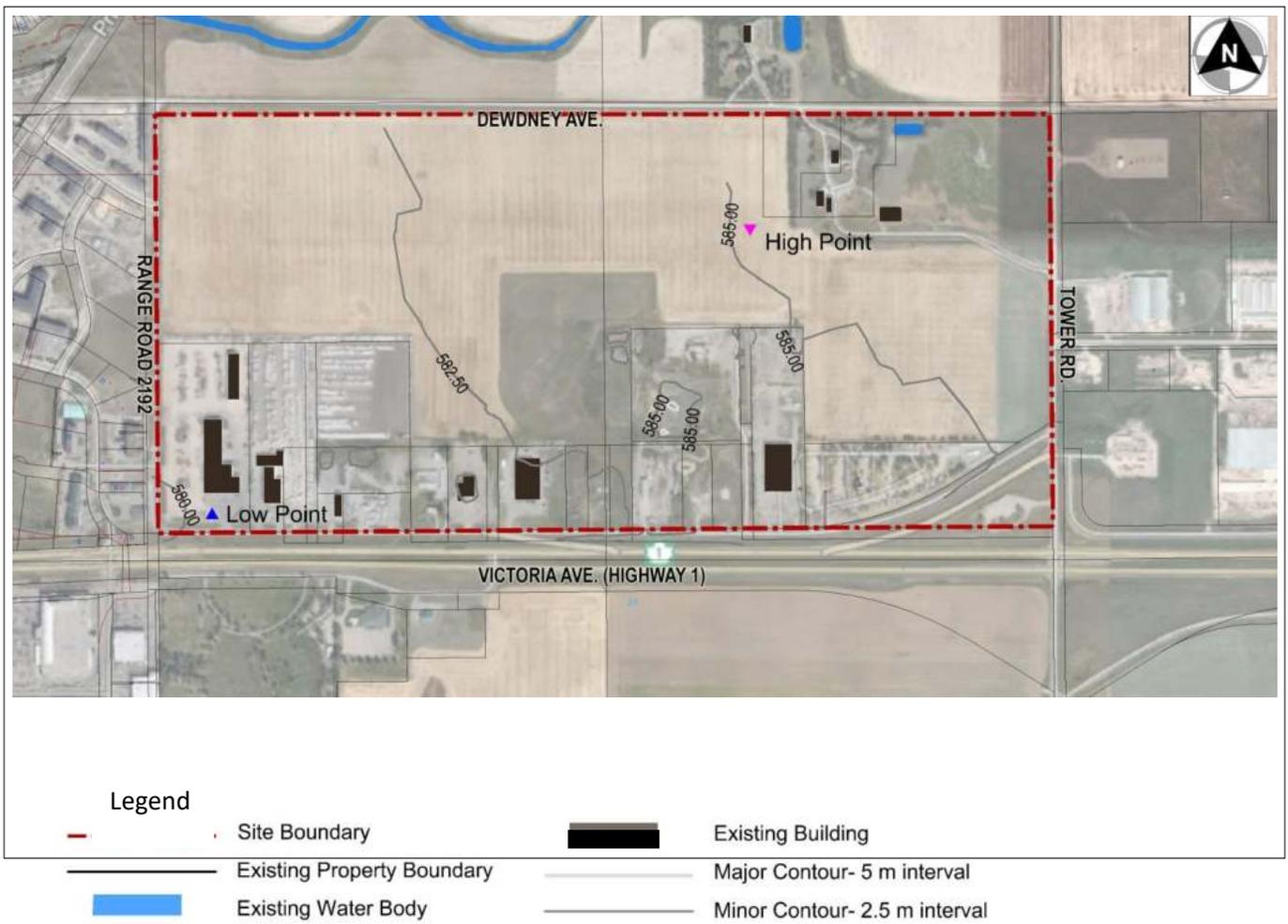
# 2

## SITE ANALYSIS

### 2.1 TOPOGRAPHY

The Plan area is located within the physiographic division known as the Qu'Appelle Sub-Basin, and is characteristic of low-lying, flat terrain. The lands slope gently to the southwest. A high point of 585 m.a.s.l is located in the central portion of the site, with a

Figure 3: Site Topography

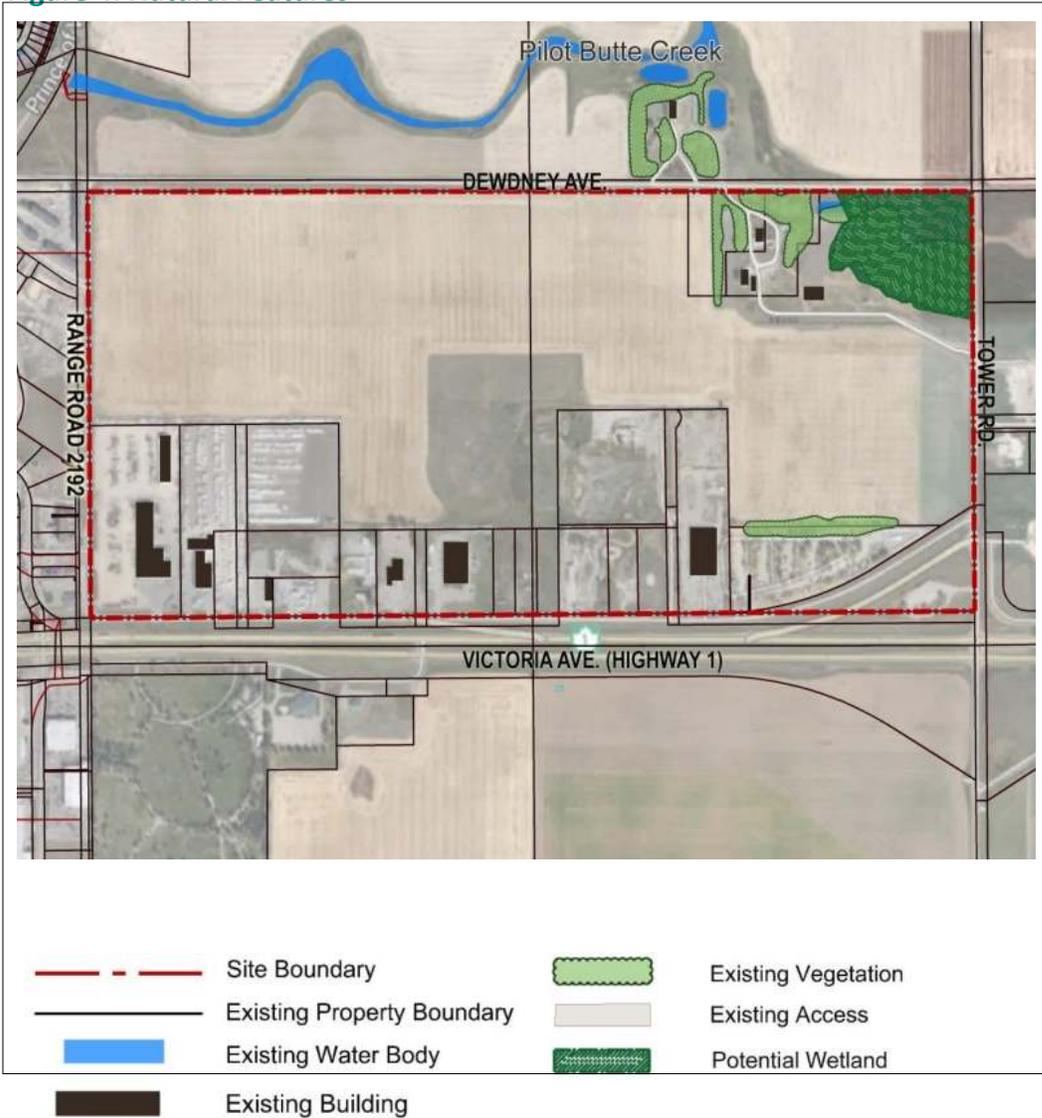


## 2.2 NATURAL FEATURES

The majority of the site is undeveloped agricultural land used for crop cultivation. A geotechnical site investigation indicated soils are typically moist and silty, underlain by glacial clay till deposits. The investigation also indicated instability concerns related with potential swelling and subsidence of clay fill. Due to the possibility of the shifting of grade-supported structures in these areas, reconstruction of the fill could be considered where development will occur.

A meandering creek and surrounding wetland exists in the northeast corner of the property, connecting with Pilot Butte Creek north of Dewdney Avenue (see Figure 4).

**Figure 4: Natural Features**



### 2.3 BUILT FEATURES

Built features exist in the southern portion of the Plan area. These include existing low-rise commercial buildings, quonsets and canopies, parking areas and gravel-surfaced driveways. Remnants of a pre-existing waterpark also lie within the area. An existing farmstead is located in the northeast portion.

Several existing 50 mm water mains run throughout the site area which services the existing uses in the southern portion. These lines tie into existing trunk lines along the

existing Dewdney Ave and Range Road 2192. Private sanitation systems exist within the southern portion.

## **2.4** **ENVIRONMENTAL OVERVIEW**

A high-level desktop review of the Plan area was conducted to assess the environmental conditions on-site. There are two properties examined within the Plan area that are potentially an environmental concern:

- a) Parcel B, Plan FS2354
- b) Parcel D, Plan 61R01031

Prior to any further development, proper testing for soil and/or water contamination should be conducted throughout the Plan area with specific attention to the currently developed commercial sites in the area's southern portion. In addition, an examination of water table levels, and a classification of the potential wetland/waterbody in the northeast corner should be conducted.

The Plan area is situated at the southern edge of the Upper Condie and Lower Regina Aquifer areas, with a water level approximately 9m below ground level. Development within the Plan area should consider the ecological sensitivities of these aquifers. Prior to development, additional testing to identify potential impacts on these areas should be carried out.

## **2.5** **HERITAGE RESOURCES**

A heritage resource impact assessment conducted in December of 2014 did not identify any heritage resources. There are no concerns with the project proceeding as proposed, relating to heritage resources.

## **2.6** **RETAIL IMPACT ANALYSIS**

A retail impact analysis was conducted by Colliers International, to understand the potential retail demand for eastern Regina between the 2014 and 2024 timeframe horizon. Based on population and income growth forecasts for areas surrounding the Tower Crossing Site, Colliers predicts residents in the area will generate an estimated \$982.6 million in retail spending by 2024. This equates to an estimated growth in retail floorspace demand of over 1.9 million square feet. With this projected retail demand, this Plan area, as well as lands to the south of Victoria Avenue, has the potential to accommodate retail development in the future.

# 3

## LAND USE STRATEGY

### 3.1 COMMUNITY DESIGN

#### 3.1.1 Overview

Overall community design should be focussed on the holistic development of a community that is interconnected with its surrounding urban systems and networks, is open and accessible to multiple modes of transportation, is sensitive of natural features, and creates a high-quality public realm.

#### 3.1.2 Policy

- 3.1.2.1 The multi-use pathway will be a destination-based pathway system that will be developed to link parks, open space, recreational facilities, residential areas and commercial destinations; however, where practical, and where the standard multi-use pathway is not feasible or desirable, on-street greenway connections with minimal driveway crossings should be used to connect pedestrian destinations.
- 3.1.2.2 Transit routes should efficiently and effectively circulate throughout the Plan area to provide access to and from surrounding areas.
- 3.1.2.3 Future developments should be adequately landscaped in a manner that contributes to a sense of place, utilizes native vegetation species (where applicable), and is aesthetically pleasing.
- 3.1.2.4 A mixed-use transition and/or landscaping area should be considered to help facilitate a gradual interface between the commercial area and future residential area.

### 3.2 RESIDENTIAL

#### 3.2.1 Overview

This Secondary Plan supports residential development in four potential scenarios: Residential Area, Mixed-Use Area, Flex Area and Commercial area where it is developed as part of an Urban Centre.

#### 3.2.2 Policy

- 3.2.2.1 The location and type of residential and mixed-use development shall be in accordance with an approved concept plan, which is in general accordance with this Secondary Plan.

- 3.2.2.2 Within the identified Residential Area, land-uses may include residential, schools, parks and open space; any other appropriate land-uses, as determined by the City.
- 3.2.2.3 Within the identified Mixed-Use Area, land-uses shall include higher density residential, and may include schools, parks and open space, smaller-scale commercial (e.g., 2700m<sup>2</sup> or less), civic, institutional; any other appropriate land-use, as determined by the City.
- 3.2.2.4 Within the identified Flex Zone Areas, land-uses may include any, or all, of the following: higher density residential, commercial, civic, and institutional.
- 3.2.2.5 Notwithstanding any other policy of this Plan, the City may allow the identified Mixed-Use Area to consist solely of residential development and associated land-uses (e.g., school, parks, etc.).
- 3.2.2.6 Notwithstanding any other policy of this Plan, the City will not allow residential development within the identified Cell B Flex Zone Area until the Mixed-Use Area is substantially built out, as determined by the City.
- 3.2.2.7 Notwithstanding any other policy of this Plan, the City may allow rezoning and development of lands within the identified Residential Area in order to accommodate public infrastructure and facilities without a concept plan being required, and prior to Phase II approval.
- 3.2.2.8 Notwithstanding any other policy of this Plan, residential development shall not be allowed in the Commercial Area unless it forms part of a master planned Urban Centre that:
  - 3.2.2.8.1 Is spatially defined through an approved concept plan;
  - 3.2.2.8.2 Includes an assortment of interconnected higher density development, civic space and facilities, transit service, landscaped streets and a high level of pedestrian infrastructure and interconnectivity; and
  - 3.2.2.8.3 Does not include large format retail or light industrial.

### **3.3**      **COMMERCIAL**

#### **3.3.1**      **Overview**

At the time this Plan was adopted, the Plan area included commercial and light industrial development along the Victoria Avenue corridor that was rural highway-oriented in nature and was developed at a time when the land was within the jurisdiction of the RM of Sherwood. The historic/ existing land use was developed sporadically and with only limited services. In order to recognize the changing market and servicing expectations, it is the intent of this Plan to transition the southern part of the Plan area to an orderly, well planned and full serviced commercial area, while still allowing the potential continuation of compatible light industrial land-use.

#### **3.3.2**      **Policy**

- 3.3.2.1      The location and type of commercial and mixed-use development shall be in accordance with an approved concept plan, which is in general accordance with this Secondary Plan.
- 3.3.2.2      Within the identified Commercial Area, non-residential land uses may include commercial, compatible light industrial and any other appropriate complementary land-use, as determined by the City.
- 3.3.2.3      Within the identified Mixed-Use Area, land-uses shall include higher density residential, and may include schools, parks and open space, smaller-scale commercial (e.g. 2700m<sup>2</sup> or less), civic, institutional; any other appropriate land-use, as determined by the City.
- 3.3.2.4      Within the identified Flex Zone Areas, land-uses may include any, or all, of the following: higher density residential, commercial, civic, and institutional.
- 3.3.2.5      Commercial uses abutting the east-west arterial road which separates the general commercial land uses from the future residential land uses, as shown on Figure 5 - General Future Land-Use Plan, should screen parking, loading and outdoor storage areas from view, from the perspective of the abutting east-west arterial, through site, building design and/or landscaping.
- 3.3.2.6      Within the Commercial Area, specific rezoning applications shall not:
  - 3.3.2.6.1      Be approved unless a strategy for providing adequate transportation and utility services can be demonstrated for the proposed development(s), including any required off-site upgrades.
  - 3.3.2.6.2      Extend beyond the “planning cell” boundaries shown on Figure 14 –Phasing Plan.

- 3.3.2.6.3 Be approved where the proposed development will, in the estimation of the City, result in an unsatisfactory level of service, either within the Plan area or elsewhere in the city, for traffic management or utilities.

## **3.4** **CIVIC/INSTITUTIONAL**

### **3.4.1** **Overview**

Appropriate forms of civic and institutional development within the Plan area include schools and places of worship within the Residential Area; general institutional within the Mixed-Use Area; fire halls, etc. Civic and institutional development should be optimally sited, relative to its particular form and intensity, in order to enhance pedestrian accessibility and community design, and should take advantage of shared parking with commercial development where possible and appropriate.

### **3.4.2** **Policy**

- 3.4.2.1 Institutional development (e.g., libraries, places of worship, schools, etc.) may be considered within the identified Residential Area, Mixed Use Area, Flex Area and Commercial Area.
- 3.4.2.2 As a prerequisite for concept plan approval, pertaining to the identified Residential Area, an assessment of potential civic needs shall be undertaken.
- 3.4.2.3 The provision of land for schools shall be in accordance with any applicable municipal or provincial law or policy.
- 3.4.2.4 Civic and institutional development should be optimally sited and located to support and enhance pedestrian and transit accessibility and, where appropriate, to frame key focal areas, such as intersections, neighbourhood hubs or intersecting view planes/ site lines.
- 3.4.2.5 Where possible and appropriate, civic and institutional development should locate adjacent to appropriate commercial development in order to share parking and provide land-use synergies.
- 3.4.2.6 Notwithstanding any other policy of this Plan, the City may allow rezoning and development of lands within the identified mixed-use area in order to accommodate civic and institutional uses prior to residential approval, where it can be demonstrated that:
  - 3.4.2.6.1 The proposed development can be supplied with an adequate level of services.
  - 3.4.2.6.2 The site is a suitable location for the proposed use.
  - 3.4.2.6.3 The development will not impede the eventual full-build-out of the Mixed-Use Area.

## **3.5**      **OPEN SPACE/RECREATION**

### **3.5.1**      **Overview**

Open space will generally be in the form of City parks, which are designated through the subdivision process as municipal reserve. For the identified Commercial Area, the City may either direct the municipal reserve allotment to the Residential Area or claim cash-in-lieu of land. If open space is required to accommodate storm water from the Phase I Commercial Area, then the City may consider locating this open space in the Phase II Residential Area.

Parks will generally be directed to the Residential Area; therefore, an open space strategy will be identified as part of the concept plan process for this future development area. In addition to municipal reserve, the City and/or developer will assess the potential for environmental reserve designation pertaining to the potential wetland site in the NE corner of the Plan area.

### **3.5.2**      **Policy**

- 3.5.2.1      As a prerequisite for concept plan approval, pertaining to the identified Residential Area, an assessment of potential open space and recreation needs shall be undertaken.
- 3.5.2.2      Multi-Use pathways should be incorporated into the Plan area in accordance with an approved concept plan.
- 3.5.2.3      With respect to land identified for commercial development, the City may, where applicable, either claim cash-in-lieu of municipal reserve or have it deferred to the Residential Area.
- 3.5.2.4      Through the concept plan process pertaining to the Residential Area:
  - I.    The City will assess the potential for environmental reserve designation pertaining to the potential wetland site in the NE corner of the Plan Area,
  - II.   An open space strategy, for the Residential Area, shall be identified, including an outline of how the municipal reserve dedication was calculated.
- 3.5.2.5      Where parks are intended to accommodate storm water:
  - I.    The parks shall be designed to support City of Regina recreational sport programming and other active recreation as the primary use.
  - II.   A combined park and drainage facility design solution and drainage study shall be submitted by the developer, as a prerequisite to

subdivision approval demonstrating, to the City’s satisfaction, how the storm water facility can be accommodated without detracting from the viability of the park as a space for programmed sports and active recreation.

- 3.5.2.6 Open spaces should be integrated into a comprehensive system with linkages to parks, pathways, facilities (where applicable) and the Pilot Butte Creek.
- 3.5.2.7 The City may allow the transition of parcels, which were originally reserved for storm water purposes, to municipal reserve/ parks, or hybrid park/ detention areas, should the intent of the open space policies of this Plan be adhered to and satisfied, and at the City’s discretion.
- 3.5.2.8 Notwithstanding any other policy of this Plan, the City may allow rezoning and development of lands within the identified Residential Area in order to accommodate a dog park or storm water detention pond without a concept plan being required, and prior to Phase II approval.
- 3.5.2.9 The City may require a zone level dog park within the Phase II Residential Area.
- 3.5.2.10 All open space shall be designed to meet accessibility standards.
- 3.5.2.11 The City shall claim municipal reserve or cash in lieu of municipal reserve for all land in the Plan area, in accordance with *The Planning and Development Act, 2007*.
- 3.5.2.12 Notwithstanding Policy 3.5.2.11, the City shall not claim municipal reserve where it can be demonstrated that municipal reserve dedication does not apply (e.g., where existing subdivisions were previously subjected to municipal reserve dedication).

# 4

## SERVICING STRATEGY

### 4.1 TRANSPORTATION

#### 4.1.1 Overview

The Plan area will transition from a development scenario focusing, primarily, on one service road, abutting Victoria Avenue, to a fully integrated urban development framed by a grid, or modified grid, street network. The service road, which, historically, provided primary access, will be phased out over time. The main access into the Plan area will be through the proposed Chuka Boulevard extension, which will connect to Arcola Avenue and eventually extend to lands north of the Plan area and north of Pilot Butte Creek. Chuka Boulevard will assume the form of an arterial roadway, through the commercial area, and should include cycling and pedestrian infrastructure along its full length. A future right-in, right-out intersection will allow access into the Plan area at the interface of Victoria Avenue and Kennedy Street.

Roads and pedestrian infrastructure will be phased-in as needed to support development proposals and utility services, recognizing that the full build-out may depend on the timing of individual landowners and redevelopment proposals. As a component of the concept plan process for the future Residential Area, a circulation Plan will be prepared for the residential portion of the Plan area.

As part of the future regional transportation strategy for the City, Saskatchewan Ministry of Highways and Infrastructure is considering the widening of Tower Road to accommodate a possible 101m right of way, and/or a highway interchange, connecting Victoria Avenue with Tower Road. Until the direction, and location of the potential widening and interchange can be confirmed, development should not occur within the widening and interchange rights-of-way, beyond uses for which it is currently zoned.

Due to the proximity of the future interchange to the Zinkhan Street, it was identified that there might be a weaving concern from the southbound off-ramp of the Victoria Avenue and Tower Road interchange to the westbound left turn lane of Zinkhan Street and Victoria Avenue. Based on a weaving analysis completed by the City, it has been determined that any weaving concerns could be addressed through either ramp design or signal control (i.e. no right turns on red lights). As such, the Zinkhan Street and Victoria Avenue intersection will be permitted to operate as a full intersection.

#### 4.1.2 Policy

4.1.2.1 The location and function of major transportation infrastructure shall generally be in accordance with Figure 6 – Transportation Servicing Network; however, the exact configuration and function of major

transportation infrastructure shall be determined at the concept plan stage and finalized at the subdivision stage and/ or detailed design stage.

- 4.1.2.2 The location of streets and pedestrian and cycling infrastructure shall be in accordance with an approved concept plan, which is in general accordance with this Secondary Plan.
- 4.1.2.3 The City may require the preparation of a traffic impact assessment to support any proposed rezoning application.
- 4.1.2.4 The east-west arterial, separating the Commercial Area from the Residential Area, shall include street trees, landscaped boulevards/ medians as well as pedestrian and cycling infrastructure.
- 4.1.2.5 Township Road will remain as a local road, however:
  - 4.1.2.5.1 Through the preparation of a secondary plan or concept plan for the applicable lands, Township Road may be re-classified to an alternate road standard.
  - 4.1.2.5.2 Land within the Plan area shall be reserved for a potential Township Road “fly over”, across Tower Road.
- 4.1.2.6 Until the configuration and location of the potential future Tower Road interchange and related road widening can be confirmed, as shown on Figure 6 – Transportation Servicing Network, development cannot occur in the eastern portion of the Plan area, within the potential future road widening rights of way, beyond uses for which it is currently zoned.
- 4.1.2.7 The existing service road in the southern portion of the Plan area shall be decommissioned at such time when it is no longer required to provide access to existing properties within the Phase I area, as determined by the City.
- 4.1.2.8 Access to the Plan area at the intersection of Victoria Avenue and Kennedy Street should be controlled via a right-in/right-out access.
- 4.1.2.9 Access to the Plan area at the intersection of Victoria Avenue and Zinkhan Street should be a controlled full-access intersection.
- 4.1.2.10 Prior to subdivision approval, the City; at its discretion, may require a Transportation Impact Assessment (TIA) for the Phase I area, which provides a solution satisfactory to the City, for internal traffic management, including safe and efficient movement of:
  - 4.1.2.10.1 Vehicles, including lane configuration, intersection design, signalization, and traffic control.
  - 4.1.2.10.2 Pedestrians and cyclists, including traffic calming (where required), pedestrian crossings, sidewalk location and design, etc.
  - 4.1.2.10.3 Transit, including route and stop locations, etc.

## 4.2 WATER

### 4.2.1 Overview

#### **Existing Conditions**

Water servicing near the proposed development site is available via an existing 1961 asbestos cement 300 mm water main. This existing water main is located in Township Road running west to east. Additional water servicing near the proposed development is available via an existing 2002 PVC 300 mm water main, ending at Range Road 2192 running west to east in the north Highway 1 ditch.

#### **Proposed Development**

Water services may be provided to this development as shown in the water servicing concept total development shown on Figure 7. For total development, the following connections to existing water mains are proposed:

1. 400 mm feeder loop connected to the existing 300 mm water main where the proposed Zinkhan Street intersects the existing Township Road.
2. 300 mm feeder main connected to the existing 300 mm water main where the proposed Chuka Boulevard intersects Township Road.
3. The 400 mm feeder loop connection between the existing 300 mm water main on Township Road, and the existing 400 mm water main on Prince of Wales Drive.
4. The 400 mm feeder loop connected to the existing 400 mm water main where the proposed Dewdney Avenue intersects the existing Range Road 2192.
5. 300 mm feeder main connected to the existing 300 mm water main at the intersection of the existing Range Road 2192 and the existing North Service Road.
6. 200 mm distribution main connected to the existing 150 mm water main at the intersection of the proposed Argan Drive and the existing Range Road 2192.

The Tower Crossing water system was modelled in WaterCAD. The model was integrated into the 235,108 Population City of Regina Base Model, provided by the City of Regina. The Tower Crossing water system was modelled in WaterCAD under the Peak Hour, Peak Day, and Peak Day + Fire Flow Scenarios. Within the Tower Crossing development, all nodes satisfy the Level 1, Level 2 and Level 3 City of Regina fire flow design criteria. The addition of the Tower Crossing development to the base City of Regina 235,108 WaterCAD model produces 10 additional nodes, located outside of the proposed development, which fall below the City of Regina fire flow design criteria. This represents a 3.7% increase in nodes that fall below the City of Regina fire flow design

criteria. These nodes are located throughout the central, southern, and eastern quadrants of Regina. The nodes that fall below the City of Regina fire flow design criteria are all supplied by a 150mm or smaller diameter water main. Current standards do not allow fire hydrants to be connected to mains less than 200mm in diameter.

The Peak Day demand and the Peak Hour demand scenario produce pressure deficiencies within the City of Regina, prior to the development of Tower Crossing. Due to pressure deficiencies in the existing City of Regina water system, individual developments in Tower Crossing may require privately owned booster pumps until an eastern water pressure solution is constructed and online. Upon the completion of Tower Crossing, the average pressure drop of nodes that fall below the City of Regina pressure design criteria is within the range of 2.8-4.1 psi. The location and magnitude of the predevelopment vs post development nodes that fall below City of Regina design criteria can be found in the supplemental Servicing Report.

The Southeast Serviceability Study (2012) states that the addition of the second pressure zone cannot satisfy the City's design criteria in terms of pressure and fire flow for future growth scenarios in the northeast, south, and southeast areas of the City for a population of 195,000. The report states that the high elevations and long distances from existing pumping stations are the main cause for system deficiencies. Constructing new feeder mains alone is insufficient to address the deficiencies. The recommendation of the Southeast Serviceability Study (2012) and the Second Pressure Zone Hydraulic Study and Preliminary Design Report is to construct an additional pumping station to provide the required third pressure zone. To account for the lack of the third pressure zone, the Secondary Plan zoning strategy will be such that individual "cell" development will be analyzed and approved on a case-by-case basis to ensure the impact on existing neighborhoods are kept to an acceptable level.

### **Timing of Capital Improvements**

The *Southeast Serviceability Study* (2012) recommends two north-south water system connections crossing Victoria Avenue to the south of this development: One at Chuka Boulevard and one at Tower Road. Due to the fact that Tower Road is the location of a potential future interchange the second crossing should occur at Zinkhan Street. As the City will require these connections between Tower Crossing and the proposed development on the south side of Victoria Avenue (Highway 1) it may be the responsibility of the first developer "in the ground" to extend the required stubs to the Victoria Avenue right-of-way and the responsibility of the second developer(s) to construct the crossings and complete the connections.

## 4.2.2 Policy

- 4.2.2.1 The overall water system and Phase 1 water system should be in general accordance with Figure 7: Water Servicing Concept – Total Development and Figure 8: Water Servicing Concept – Phase I respectively, however, the City may accept an alternate solution without an amendment to this Plan being required.
- 4.2.2.2 The Phase II water system shall be determined through the concept plan process pertaining to the identified Residential Area; however, refinements to the water servicing concept may take place at the time of subdivision and/ or detailed design stage without an amendment to the applicable concept plan being required.
- 4.2.2.3 The City may require, as a prerequisite for rezoning or subdivision approval, detailed modelling and analysis for water servicing, which identifies network routing; capital improvements and solutions for providing an appropriate level of service both within the development and beyond.
- 4.2.2.4 Infrastructure shall be sufficiently sized and include the appropriate stubs to accommodate adjacent development outside of the Plan area, as required by the City.
- 4.2.2.5 Existing connections from the 300 mm water main on Township Road to developments within the Plan area should be disconnected via cut and cap at the main. New services will be provided to the existing developments within Tower Crossing via the proposed water distribution network.
- 4.2.2.6 Until such time as the requisite infrastructure improvements is undertaken (e.g., new pressure zone), landowners, within the Plan area, shall be encouraged to register caveats on the titles of new lots, which indicate the existence of potential water pressure deficiencies.
- 4.2.2.7 Level 3 Fire Flow requirements shall be satisfied within all commercial development areas.

## 4.3 WASTEWATER

### 4.3.1 Overview

#### **Existing Conditions**

Wastewater servicing near the proposed development site is available via an existing 525 mm sanitary sewer main. This existing sanitary sewer main is located northwest of Range Road 2192 and Township Road intersection as shown on Figure 9 – Sanitary Servicing Concept Total Development. Wastewater servicing near the proposed development is also available via an existing 375 mm sanitary sewer main, located near the Argan Drive and Range Road 2192 intersection. Both of these trunks discharge to the trunk on Prince of Wales Drive, which ultimately discharges into the Arcola Avenue trunk. However, the 375mm sanitary main was installed with inadequate depth to allow for a gravity connection from Tower Crossing. A pump station is essential to allow for the conveyance of these flows. The 525 mm sanitary sewer main is located closer to the proposed pump station, than the smaller 375mm sanitary main.

#### **Proposed Development**

The preliminary wastewater collection system layout is shown in Figure 9 – Sanitary Servicing Concept Total Development. The Phase I wastewater collection system is shown on Figure 10. In this concept, wastewater flows are conveyed via a gravity collection system to a wastewater storage facility and pump station. The wastewater storage facility will allow for off-peak wastewater pumping preventing overloading the existing City of Regina wastewater system. The pump station would convey the Tower Crossing wastewater to an existing 525 mm sanitary sewer trunk via 250mm force main. The existing 525 mm sanitary sewer trunk is located northwest of Range Road 2192 and Township Road. The storage and pump facility may have to be decommissioned in the future, should downstream upgrades eventually allow for gravity conveyance. A summary of the calculated peak flows is indicated in the table below.

Inflow from weeping tiles and foundation drains will be pumped to the surface, and not to the underground wastewater or stormwater sewer systems. Wet weather inflows will be limited to the 21,000 L/ha/day allowance as stated in the City of Regina Development Standards Manual. As per the City of Regina Development Standards Manual, the wastewater detention volume shall be sized to provide a minimum of 12-hour wet weather flow volume and be designed with odor control measures. To mitigate sanitary system overflows from the storage facility, the storage volume will be calculated during the detail design. During detailed design emergency measures will be established, with the approval of the City and the Government of Saskatchewan, to manage sanitary system overflows.

### Timing of Capital Improvements

Currently there are no sanitary sewer mains within the proposed Tower Crossing development. As a result, the new sanitary sewer pump station, storage facilities, and force main are critical capital improvements that must be completed prior to occupancy of any facilities in the development. The pump station and storage facilities can be designed, constructed, and expanded in phases to meet capacity requirements as phases are completed for the proposed development.

#### Peak Wastewater Flows

| Land Use      | Total Area (ha) | Pop. | Density | Peak Flow Factor | Average Flow (L/cd) | I/I (L/s) | Peak Flow (L/s) |
|---------------|-----------------|------|---------|------------------|---------------------|-----------|-----------------|
| Residential   | 39.7            | 5240 | 132.00  | 3.226            | 225                 | 9.649     | 53.67           |
| Commercial    | 56.1            | 3647 | 65.00   | 3.369            | 454                 | Total:    | 137.07          |
| Institutional | 3.9             | 195  | 50.00   | 4.152            | 454                 |           |                 |

\*Constants used for Harmon equation: F=225(res) 454(commercial) L per capita per day, K=86400 seconds per day.

\*\*Population densities for Residential, Commercial, and Institutional Based on Regina DSM and Regina Zoning Bylaw No. 9250

### 4.3.2 Policy

- 4.3.2.1 The overall wastewater system and Phase I wastewater system should be in general accordance with Figure 9 - Sanitary Servicing Concept Total Development and Figure 10m-mSanitary Servicing Concept Phase I, respectively; however, the City may accept an alternate solution without an amendment to the Plan being required.”
- 4.3.2.2 The Phase II wastewater system shall be determined through the concept plan process pertaining to the identified Residential Area; however, refinements to the wastewater servicing concept may take place at the time of subdivision and/or detailed design stage without an amendment to the applicable concept plan being required.
- 4.3.2.3 The City may require, as a prerequisite for rezoning or subdivision approval, detailed modelling and analysis for wastewater servicing, which identifies network routing; capital improvements and solutions for providing an appropriate level of service both within the development and beyond.
- 4.3.2.4 Infrastructure and land dedicated shall be sufficiently sized and designed to accommodate adjacent development outside of the Plan Area, as required by the City.

- 4.3.2.5 A sanitary stub is to be provided on the west side of Tower Road for future servicing to the existing development to the east of Tower Road.
- 4.3.2.6 Existing private sanitary systems within the Plan area shall be decommissioned and reconnected to the proposed wastewater sewer system, pursuant to City requirements.

## 4.4 STORM WATER

### 4.4.1 Overview

#### **Existing Conditions**

The Plan Area is currently cultivated farmland combined with existing commercial sites. The general topography is such that a gentle slope exists from the northeast to the southwest portion of the site as shown on Figure 11 – Storm Servicing Concept Total Development Major System. A small ridge exists running north to south near the proposed Zinkhan Street. Runoff from the existing site ultimately drains into Pilot Butte Creek.

#### **Proposed Development**

The City of Regina's storm water management strategy follows the urban dual drainage concept whereby the minor (piped) system conveys flows generated by the 1 in 5-year storm event and the major (surface) system manages flows generated by the 1 in 100-year event. The City of Regina requires that for all new developments, the storm water management system be designed to manage flows generated by the 24-hour 1:100-year design storm. Storm water flows for this development were modelled using PCSWMM Professional 2D and the 1:100-year 24-hour City of Regina design storm. Based on these simulations, the post development 24 hour 1 in 100-year runoff volume is summarized as follows:

- Catchment Area #1 – 64.8 Hectares, 100-year 24-hour runoff = 70,200m<sup>3</sup>
- Catchment Area #2 – 53.7 Hectares, 100-year 24-hour runoff = 57,600m<sup>3</sup>

Two detention ponds will be required for the proposed development site – one detention pond per catchment area as shown on Figure 11. Both detention ponds will drain north at a controlled release rate to Pilot Butte Creek. As stated in the 2012 Southeast Serviceability Study Final Report prepared by AECOM, the allowable release rate into Pilot Butte Creek shall be limited to 2.3 L/s/ha. The overall minor system is shown on Figure 12, and the Phase I minor system is shown on Figure 13.

#### **Timing of Capital Improvements**

Currently there are no storm sewer mains within the proposed Tower Crossing development. As a result, construction of both detention ponds and outlets to Pilot Butte Creek are critical components that must be constructed in conjunction with the minor storm system.

**4.4.2**      **Policy**

- 4.4.2.1      The overall storm water system and Phase I storm water system should be in general accordance with Figure 11-13; however, the City may accept and alternate solution without an amendment to this Plan being required.
- 4.4.2.2      The Phase II storm water system shall be determined through the concept plan process pertaining to the identified Residential Area; however, refinements to the storm water servicing concept may take place at the time of subdivision and/ or detailed design stage without an amendment to the applicable concept plan being required.
- 4.4.2.3      The City may require, as a prerequisite for rezoning or subdivision approval, detailed modelling and analysis for storm water servicing, which identifies a grading plan, network routing, capital improvements and solutions for providing an appropriate level of service both within the development and beyond.
- 4.4.2.4      Infrastructure shall be sufficiently sized to accommodate adjacent development outside of the Plan area, as required by the City.
- 4.4.2.5      The City may allow the construction of detention ponds within Phase II lands, including an outlet to Pilot Butte Creek, prior to Phase II concept plan approval, in order to accommodate Phase I storm water, with the proviso that the detention ponds be landscaped to the satisfaction of the City and fully funded by the developer.
- 4.4.2.6      All required Federal, Provincial and Municipal regulatory approvals shall be obtained for ponds discharging into Pilot Butte Creek.

## 5

## IMPLEMENTATION

5.1 PHASING/ STAGING5.1.1 Overview

This Secondary Plan contemplates two primary phases: Phase I, which applies to the Commercial Area (including Mixed-Use and Flex Zone areas), and Phase II, which applies to the future Residential Area. The Commercial Area is regarded as the priority area for development and phasing; the Residential Area may be considered for development following conformity with the OCP- Part A (e.g., Growth Plan and applicable policies) and an approved concept plan. Staging of development within Phase I shall generally be in accordance with the redevelopment initiatives prompted by landowners and will be contingent on the provision of services.

5.1.2 Policy

- 5.1.2.1 Phasing within the Plan area shall be in general accordance with Figure 14 - Phasing Plan.
- 5.1.2.2 Pending conformity with the policies and/or growth plan of Part A of the City's OCP, respecting phasing/timing of growth, and concept plan approval, the City may consider approving residential development within the identified Residential Area, Mixed-Use Area, Flex Area and Commercial area, (see Policy 3.2.2.9), as shown on Figure 5 - General Future Land-Use Plan.
- 5.1.2.3 The preferred staging of residential development is from west to east, following a continuous pattern.
- 5.1.2.4 Notwithstanding any other policy of this Plan, the City may allow rezoning and development of lands within the identified Residential Area in order to accommodate public infrastructure and facilities without a concept plan being required, and prior to Phase II approval.
- 5.1.2.5 Notwithstanding any other policy of this Plan, the City will not allow residential development within the identified Cell B Flex zone area until the Mixed-Use Area is substantially built-out, as determined by the City.
- 5.1.2.6 Where a property is known to have, or potentially have, contamination, the City may apply the Holding Zone in order to ensure that the contamination issue is resolved prior to development permit approval.

# 6

## APPENDICES

### 6.1 APPENDIX A – NON-BINDING INFORMATION

Appendix A.1 – Potential Transit Route Plan

Appendix A.2 – Potential Street Cross Sections

Appendix A.3 – Potential Chuka Boulevard and Dewdney Avenue Intersection

# Appendix A- Non-Binding Information



**LEGEND**

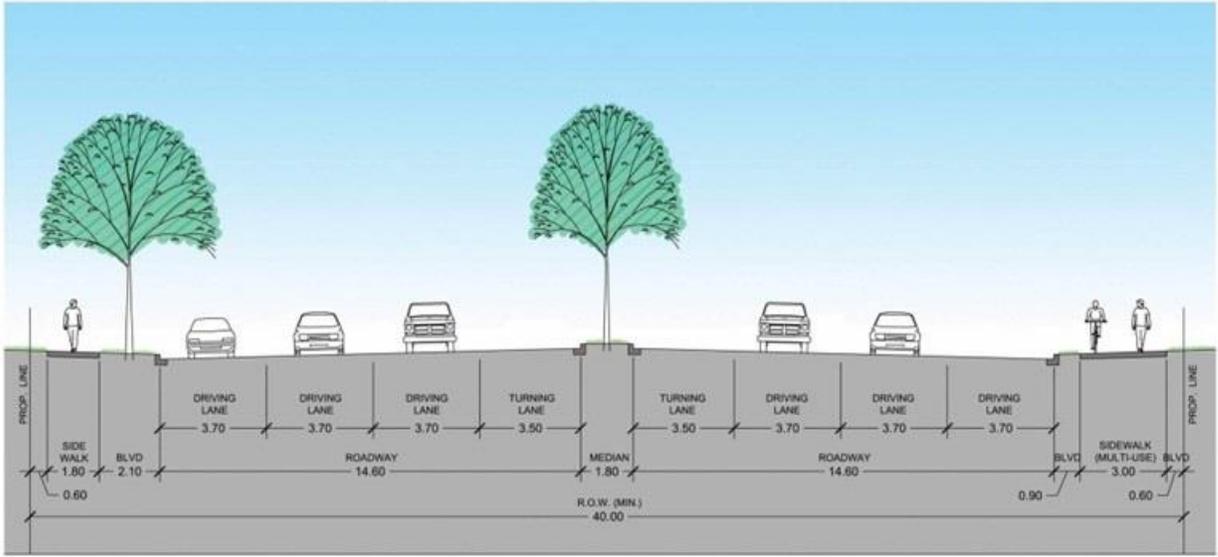
- Plan Area Boundary
- Proposed Commercial
- Proposed Residential
- Proposed Mixed Use
- Proposed Flex
- Proposed Arterial Road - 40m ROW
- Proposed Arterial Road - 30m ROW
- Proposed Collector Road - 24m ROW
- Potential Wetland (ER)
- Future Potential Stormwater Pond
- Future Highway ROW
- Proposed Phase 1 Transit Route
- Proposed Phase 2 Transit Route
- Temporary Bus Stop (Phase 1 only)
- Transit Stop (Phase 2 Completion)

Scale 1:10,000  
 0 50 m 100 m 200 m



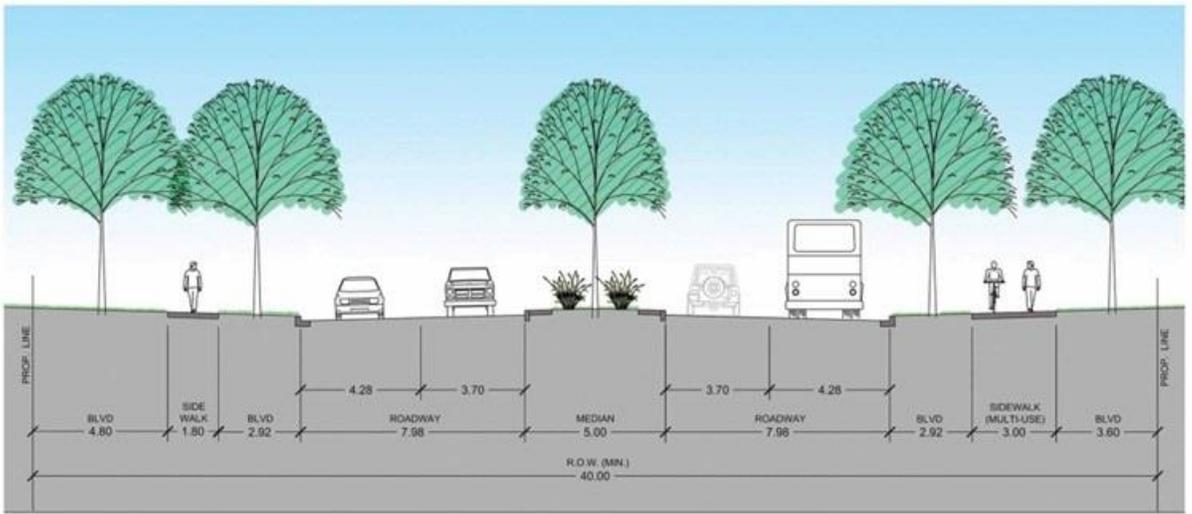
Appendix A.2

Chuka Boulevard (Commercial Area Near Intersection)



PRELIMINARY

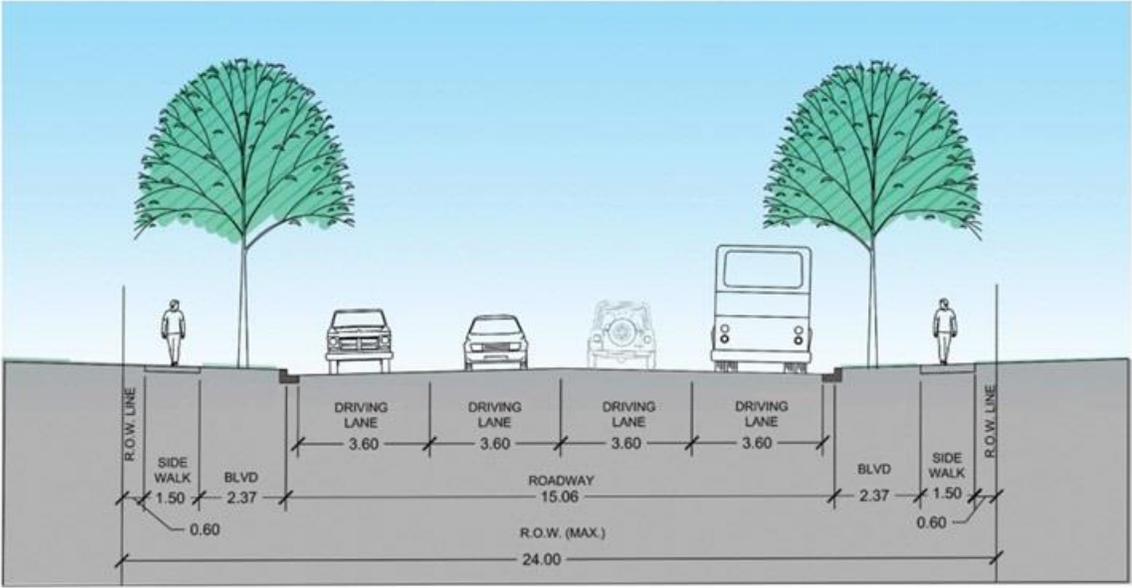
Appendix 2: Chuka Boulevard (Residential Area)



PRELIMINARY

Appendix A.2

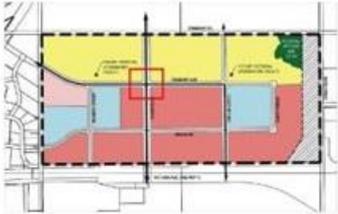
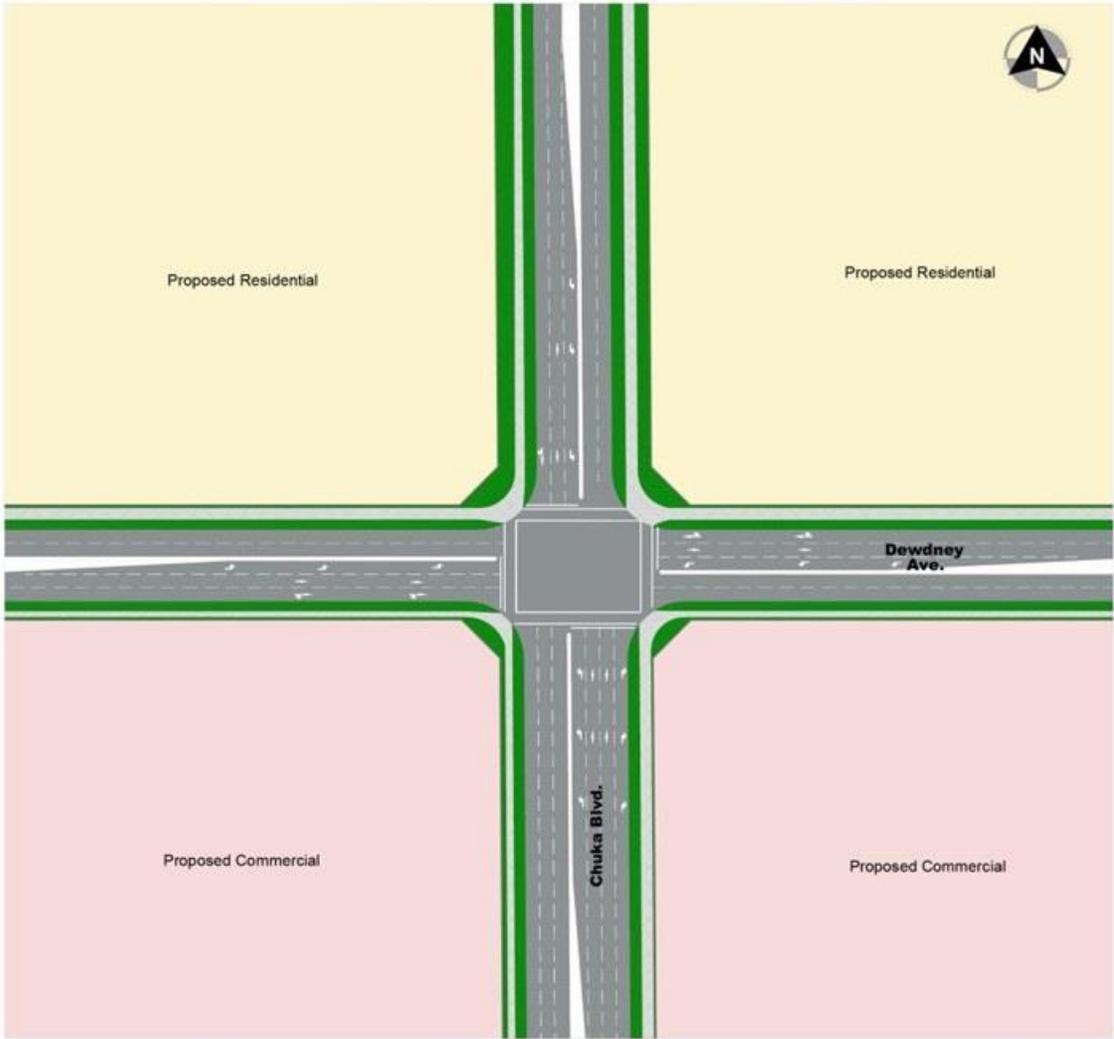
Collector Roads



PRELIMINARY

Appendix A.3

Potential Chuka Boulevard and Dewdney Avenue Intersection



-  Plan Area Boundary
-  Proposed Commercial
-  Proposed Residential
-  Landscaping
-  Potential Pathway

