

# Bremner & Colchester Growth Management Strategy Key Assumptions

## Enclosure 2

***\*Significant Assumption – relative to other assumptions these bolded items will require further analysis and could have significant cost implications and impacts on future detailed planning\****

### Environmental Assumptions (Bremner and Colchester):

- Only a high level Biophysical Assessment has been completed for both potential growth nodes. **Municipal Reserve (MR) and Environmental Reserve (ER) are conceptual at this level.**
- Both concepts contain density above 30 du/nrha as required by the Capital Region Board (Bremner requires between 30-40 du/nrha and Colchester requires between 30-45+ du/nrha)
- The Biophysical Assessment recommends that a soils study be completed for Bremner at the ACP stage.
- **Due to the moraine landscape in the Colchester area, an additional 10% of land was assumed to be required for ER.**
- It is assumed that lands outside of areas allocated for Environmental Reserve (ER), Municipal Reserve (MR) and pipeline setbacks are developable. Further study will be required at the Area Concept Plan (ACP) stage.
- As per the Municipal Government Act (MGA) it is assumed the County will be able to negotiate additional MR above the 10% given the higher density of **both** the Bremner and Colchester community design concepts.
- It is assumed the current MGA allowance for MR dedication will either remain or increase after the MGA review is complete.
- The Biophysical Assessment indicates a 100 metre setback should be required for Point Aux-Pins creek in **Bremner**. While this setback has been assumed, the distance will fluctuate based on further environmental studies and geotechnical analysis.
- The Potential Environmental Reserves in **both** areas include a buffer around the creeks and some of their tributaries as well as many of the wetlands in the area. GMS reserve allocations in **both** GMS' are currently being assumed based on best practices but will need to be adjusted as a result of ground truthing.
- Strathcona County's Wetland Conservation Policy and provincial policy and legislation strive to conserve every classification of wetland, and, when wetlands cannot be maintained in their original location, to achieve No Net Loss of wetlands through a strict series of mitigation activities.

### Pipelines Assumptions (Bremner and Colchester):

- Utilizing the Cumulative Risk Assessment and  $10^{-6}$  contour, a 250 metre setback on either side of the pipelines has been assumed for sensitive uses. More detail on the implementation of the cumulative risk for pipelines will need to be considered at the ACP stage.

- With respect to **Colchester**, much of the plan area on the east is bisected by pipelines. The 250 metre buffer on either side is assumed to be used for passive recreation.
- More detail on the implementation of the cumulative risk for pipelines will need to be considered at the ACP stage for **both** Colchester and Bremner.

## **Utility Assumptions:**

### **Water (Bremner)**

- **The most likely servicing option comes with some challenges including the requirement of construction of a Strathcona County watermain within the City of Edmonton, which presents jurisdictional challenges to be explored further. Assumption being made that the City will permit the construction.**
- **A future highway interchange is planned at Township Road 534 and Highway 21 which will increase the cost and complexity of the water transmission main crossing. It is assumed the County will be able to secure an alignment and crossing agreement with Alberta Transportation for the water transmission main.**
- **A detailed hydraulic analysis including water modeling will be required at the Area Concept Plan stage.**
- A series of onsite reservoirs will be required to provide potable water storage. A detailed servicing strategy will be required at the ACP stage to investigate the recommend reservoir locations and pressure zone boundaries.
- There's one temporary and three permanent servicing options for delivering potable water to the Bremner area and there are uncertainties and assumption associated with each option. Further studies as well as negotiations with EPCOR and the Capital Region Northwest Water Service Commission (CRNWSC) will be required.

### **Water (Colchester)**

- **It is currently assumed there will be adequate space within the Transportation Utilities Corridor (TUC) to accommodate the water line. Further investigation will be required at the ACP stage.**
- **A detailed hydraulic analysis including water modeling will be required at the Area Concept Plan stage.**
- Water servicing consists of a new transmission line to be constructed from the 34 Street/92 Avenue booster station. The line would be constructed along 92 Avenue to the Transportation Utility Corridor (TUC, Anthony Henday Drive). The transmission line would then follow the municipal services corridor within the TUC south to Highway 628 (assuming approval of Alberta Transportation), and then parallel the Highway 628 right-of-way going east to a potential reservoir located in the northwest part of the Colchester area.

### **Wastewater (Bremner)**

- Wastewater servicing can be provided by the Southeast Regional Trunk Sewer (SERTS) located west of Bremner on RR 232, which discharges to the Alberta Capital Region Wastewater Treatment Plant (ACRWTP) on TWP RD 540. One or two offsite wastewater trunks through neighbouring developments would be required to connect

the system to SERTS. Assumption being made that we can secure alignment through neighbouring developments.

- Due to topographical constraints it is not possible to connect to the proposed North of Yellowhead Area Concept Plan (ACP) trunk system. Connections to one or two proposed trunks in the West of 21 ACP are possible. The assumption being that easements can be negotiated and secured with owners of adjacent lands to accommodate the connections.
- A detailed engineering study will be required at the ACP stage to determine location and depth of trunks in addition to the detailed analysis of the onsite wastewater trunk system.

### **Wastewater (Colchester)**

- **Further investigation will be required at the ACP stage to determine whether strictly a gravity system versus constructing a pump station is warranted given the depths of construction required to provide gravity servicing to Colchester which increases the initial capital costs of the system.**
- **Analysis of the lifecycle capital and operating costs will be required to determine if a pump station has significant benefits. It is assumed the most sustainable option in Colchester to reduce long-term operating costs would be a gravity system.**
- **A detailed engineering study will be required at the ACP stage to evaluate and compare the capital and life cycle costs of a gravity system compared to a pumped system, including the impact of grading (fill) requirements and with consideration for storm servicing.**
- Wastewater servicing will be provided by the Southeast Regional Trunk Sewer (SERTS).
- Onsite wastewater servicing will be provided by a series of gravity wastewater sewers and trunks generally following the topography to the offsite trunk connection point. Due to topographical constraints created by Fulton Creek and Mill Creek, and their wetlands, significant engineered fill will be required to facilitate development if a gravity sewer system is desired. Assumptions of costs associated with onsite engineered fill at this time cannot be made and this will fall primarily on the developer at the ASP and subdivision stages.

### **Stormwater (Bremner)**

- The conceptual locations for the stormwater management facilities (SWMFs) were determined based on site topography, creek catchment delineation, and the presence of natural areas (potential ER/MR sites). Assumption being that these identified areas will suffice.
- The actual locations of the SWMFs will be revised and additional SWMF locations will likely be identified through more detailed Storm Water Management Studies at the ACP stage.

### **Stormwater (Colchester)**

- **The impact of developing in this area has the potential to significantly disturb the natural hydrology of Fulton Creek by increasing peak flows and volumes. The County has identified significant ER and MR to protect this sensitive area in Colchester, which will help lessen impacts on Fulton Creek;**

**however, there is assumption the County will be able to work with landowners and developers to dedicate additional MR or that Council would approve the purchase of lands to dedicate as MR in order to facilitate the protection of Fulton Creeks natural hydrology.**

- The conceptual locations for the stormwater management facilities (SWMFs) were determined and assumed based on site topography, creek catchment delineation, and the presence of natural areas (potential ER/MR sites). Assumption being that these identified areas will suffice.
- The actual locations of the SWMFs will be revised and additional SWMF locations will likely be identified through more detailed Storm Water Management Studies at the ACP stage.
- A detailed drainage study is required at the ACP stage to determine the impact of development on Fulton Creek.
- Conservation and management plans will also be required at the ACP stage for both Fulton Creek and Mill Creek.

### **Transportation Assumptions (Bremner):**

- **A series of interchanges and flyovers have been identified to connect Bremner to the surrounding road network. The spacing of the interchanges is consistent with the spacing of interchanges in other urban areas of the Capital Region however further discussions and ultimate approval by Alberta Transportation will be required prior to the Area Concept Plan. Assumption being that AT will support the proposed spacing.**
- The high level transportation analysis for Bremner assumed that almost 60% of the commuters in Bremner will be travelling to and from points west, i.e. Edmonton and Sherwood Park mostly by car (and some transit).
- Regardless of Bremner, the CRB's transportation planning anticipates an important role for Township 540 as a link to the future north-east regional highway connection and bridge across the North Saskatchewan River. Range Roads 224 and 225 will need to be upgraded in order to accommodate anticipated increases in traffic to and from Township Road 540. Further transportation analysis and consultation with Alberta Transportation regarding ultimate bridge location, and impacts to downstream roads will be required at the Area Concept Plan stage.
- It has been assumed that there will be a need for transit centres and park and ride facilities within the area. It has been assumed that transit service would be designed to serve Strathcona County Transit's main destinations, those being Sherwood Park and downtown Edmonton.

### **Transportation Assumptions (Colchester):**

- **Current access to/from the Colchester area is by way of at-grade intersections on Highway 628 at Range Roads 233, 232 and 231, as well as by way of at-grade intersections on Highway 21 at Township Road 520 and Township Road 521. The at-grade intersections on Highway 628 are controlled by traffic signals at Range Road 233 and at Highway 21; all other at-grade intersections are unsignalized but have stop signs on the minor road approaches to the highway.**
- **The Colchester area is entirely surrounded by provincial highways and will be subject to provincial guidelines and regulations with respect to access. Based on discussions with Strathcona County, the Province intends to**

**maintain strict access control on all highways surrounding Colchester. The current plans for future access to/from Colchester are very limited: one access point to the south (interchange on Highway 14 at Range Road 232), one access point to the west (flyover Highway 216), one access point to the east (flyover Highway 21).**

- **The existing AT functional plans did not contemplate urban development in Colchester therefore further transportation analysis and consultation with Alberta Transportation regarding ultimate intersection treatment and ownership of Highway 628 will be required at the Area Concept Plan stage.**
- The assumption has been made that as traffic conditions warrant, traffic signals would be considered for the Range Road 232 and 231 intersections on Highway 628 (similar to the existing 233 signaled intersection). Alberta Transportation has completed a functional plan for the widening of Highway 628, but these plans did not contemplate urban development within Colchester.
- Highway 21 is a major provincial highway which runs in a north-south direction along Colchester's eastern boundary and along the east edge of Sherwood Park. It provides an important high capacity linkage to Alberta's Industrial Heartland to the north and the Fort McMurray region through connection to other highways. Highway 21 is currently a two lane paved highway along the east edge of Colchester but widens to four lanes from just south of Highway 628 to the north through Fort Saskatchewan. Regardless of Colchester, it is being assumed that Highway 21 will be upgraded to four lanes at some point in the future at the cost of Alberta Transportation.
- It has been assumed that there will be a need for transit centres and park and ride facilities within the area. It has been assumed that transit service would be designed to serve Strathcona County Transit's main destinations, those being Sherwood Park and downtown Edmonton.

### **Financial Assumptions (Bremner and Colchester):**

- **An analysis has not been conducted in regard to the County's or developer's ability to finance either development. In this regard the Fiscal Impact Analysis (FIA) is not a feasibility analysis.**
- **The final FIA assumes that developers would front end all hard infrastructure. A feasibility analysis would be required to review the reasonability of this assumption including alternative funding scenarios and their impacts.**
- **The effect on the financial requirements on future capital plan projects and financing has not been considered (i.e. growth node vs. existing demand).**
- **There has been no consideration for changes to the economic environment and that the grant environment won't change.**
- **FIA results could be significantly impacted by requirements to address environmental conditions as determined by a geotechnical analysis.**
- **The FIA assumes North of Yellowhead (Cambrian) completion as part of the analysis.**
- That development in either area would not commence until 2020.
- All projections of revenues, expenditures and assessment, along with corresponding impacts are presented in the base year (2013 dollars).
- Base year (2013) municipal tax rates were used in the analysis. It was assumed that the current splits in municipal mill rates would remain in place over the forecast period.
- That approximately 55% of the County's operating costs are fixed with the remaining 45% of operating costs varying with changes to population.

- The FIA assumes that industrial growth would continue at an average annualized rate in line with industrial growth in the County over the past 30 years.
- There would continue to be some residential development in the county outside of either Bremner or Colchester and the FIA considers the impacts of this growth as well as the impacts of continuing to service existing development.
- Regarding the inputs for the FIA based on the community design concepts, estimates were given with respect to pipe length and costs, reservoir sizing and costs, storm water management facility sizing and costs, transmission pipe sizing and costs, trunk sizing and costs, road length as well as number of lanes and costs, interchange and flyover sizing and costs.
- The timeline projection also assumes developer interest in building in the area and assembly of land for development.

***\*While every effort has been made to list all assumptions, it is possible that not every scenario has been accounted for in this document.\****