Integrated Infrastructure Management Planning
Decoteau ASP

Executive Summary

Integrated Infrastructure Management Planning (IIMP) for the Decoteau Area Structure Plan (ASP) is a high-level analysis that provides Council with information about the infrastructure required for development of the area. The broad-based analysis performed at this stage of the area development provides a general indication of future cost implications and revenue potential and can help inform high-level decision making.

The IIMP review was completed for an ASP area build-out of 39 years, starting in 2016. Based on the information available at this time, the review generally shows that the Decoteau ASP will require a developer infrastructure investment of approximately $803 million as well as a capital investment by the City and/or the Province and/or other sources of approximately $369 million.

As is typical for a residential area, whose primary function is to provide housing and community amenities, the area's anticipated cumulative revenue over a 50 year analysis period is expected to be lower than the required combined capital, operating and life cycle costs the City is expecting to fund. Therefore, the City will need to continue to grow the industrial and commercial sectors and the overall 25% city-wide non-residential tax base. This will help to offset the imbalance resulting from areas where the proportion of residential assessment exceeds 75%.

Purpose

Integrated Infrastructure Management Planning (IIMP) is a process for the gathering, synthesis, presentation and use of data related to the provision of infrastructure to the three remaining Urban Growth Areas. Information in this document is based on information provided by the applicant from October to December 2014.

The intent of the Integrated Infrastructure Management Plan is to provide Council with information about the infrastructure required for the development, how it relates to existing infrastructure, timing, and the implications to the city's operations.

IIMP Background

The tax revenue generated by new residential neighbourhoods is not meant to pay for the municipal programs and services associated with those neighbourhoods. Property taxation is a tax on wealth as represented by the assessment of residential and non-residential properties under regulations set by the Province.

Residential neighbourhoods exist to provide for housing and community amenities. Other areas of the city, such as industrial areas and commercial nodes, exist to provide employment and wealth generation. The amount of revenue the City needs from property taxation is determined for the City as a whole and takes into consideration the balance between residential and non-residential assessment. A residential neighbourhood is not a microcosm of the entire City and property taxes are not calculated on a neighbourhood basis.

It is difficult to capture all of the indirect costs and benefits that are attributable in whole or in part to new residential neighbourhoods. For example, the City collects dividends from EPCOR, earnings from its investments, and a substantial amount of non-residential tax revenue from dense commercial nodes including West Edmonton Mall, the Downtown core, and South Edmonton

Common. These sources all help fund services provided to all neighbourhoods, but are difficult to include in a neighbourhood or area specific analysis. Additionally, secondary benefits accrue from the expenditures of those individuals deriving income directly or indirectly from the development industry. Economic impacts can be estimated by calculating expenditure multipliers. An expenditure multiplier estimates the final value of an incremental dollar spent once the direct and follow-on effects are included. By way of illustration, Alberta's economic multiplier for construction is 1.6(1). This means that a dollar of construction activity generates a gross gain of $1.60 of economic activity for Alberta once direct and follow-on impacts are included. For the Decoteau ASP, this equates to approximately $1.87 billion over the construction time of the development, based on a $1.17 billion investment in public infrastructure (See Tables 2 and 3). Private investment in housing and commercial areas is over and above this.

The challenges facing the City are to balance development costs with the strategic benefits of sustainable growth, to achieve an appropriate balance of residential to commercial/industrial development. Although the City of Edmonton has achieved some success in diversifying its revenue base, property tax remains the largest component of City revenue. The long term sustainability of cities in Canada will depend on a combination of smart, resource efficient growth mixed with a progressive form of revenue generation that provides for the services being enjoyed by the citizenry in the long term, without providing undue burden to any particular stakeholder.

ASP Background

The Decoteau ASP is located in the south-eastern most part of the city. It is bounded by Anthony Henday Drive to the north, the City limits (41 Avenue SW) to the south, 50 Street SW to the west, and the City limits (Meridian Street SW) to the east. The area encompasses approximately 1960 hectares and is expected to have a population of 67,813 people.

The Decoteau ASP area currently includes existing country residential uses, agricultural land, natural areas, public utilities, and active and abandoned oil and gas well sites. All of the existing uses that are being retained as-is, including the existing country residential development, are not included in the ASP land use statistics as developable land and are also not included in the IIMP analysis.

The ASP is proposed to include a business employment area adjacent to Anthony Henday, commercial and mixed use sites, including a town centre mixed use site adjacent to the proposed transit centre in the Southeast ASP area, a district activity park site with a recreation centre, parks and natural areas, a fire station, several schools, as well as a variety of low to high density residential housing.

Methodology

Integrated Infrastructure Management Planning is conducted by working closely with city departments, utilities, and development proponents.

Development projections were determined utilizing demographic data from both development proponents and the City of Edmonton's Sustainable Development Department. In this case, both the proponent and the City project a similar timeline for development build-out of 39 years.

Infrastructure requirements are analyzed using data supplied by proponents and information from city departments and utilities to ensure effective use of infrastructure and alignment with existing and master plans.

(1) Alberta Economic Multipliers 2006, Open Model Direct and Indirect Multipliers, pg 14. Edmonton, 2010

Scenario Analysis

The following provides infrastructure information related to the Decoteau ASP. The IIMP analysis includes a single scenario with a 39-year build-out time horizon. Construction of the area is anticipated to begin in 2016 and be completed by 2054. This build-out timeline was provided by the proponent and matches the City's build-out forecasts for the area.

This section provides data resulting from the analysis of the development build-out scenario. The next section, Building Perspective, provides context to the data.

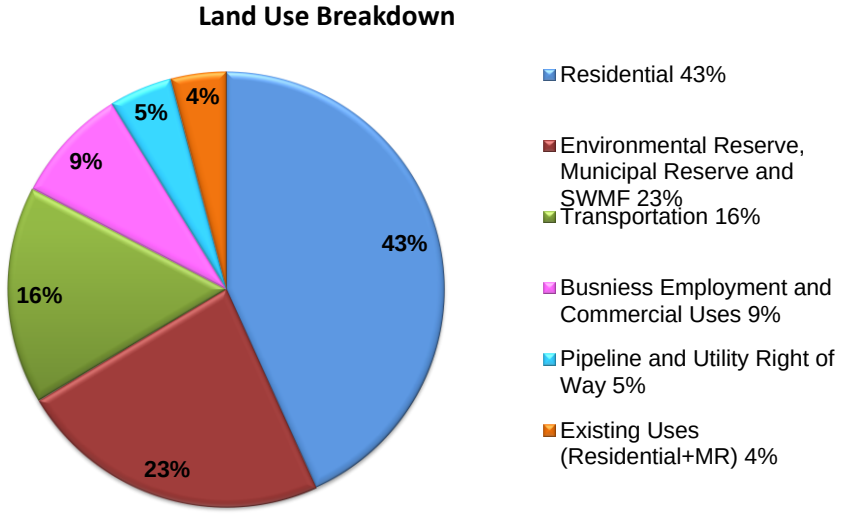
General Area Information

The proponent supplies information with the ASP that is used for Integrated Infrastructure Management Planning. This includes information on land use, population projections and residential units. This information forms the basis for the calculations and justifications for required infrastructure in the proposed communities. Complementing this base data, current service standards in combination with long term planning and consideration for the capacity of existing facilities nearby contribute to the infrastructure projections.

Gross Area Breakdown

The basic breakdown of the proposed Decoteau ASP is shown in Figure 1. Out of a total area of approximately 1960 ha, approximately 43% (847 ha) is allocated for the development of residential units, 23% (455 ha) is allocated to environmental reserve, parks, natural areas and storm water management facilities, 16% (317 ha) is allocated to existing and future roads, 9% (169 ha) is allocated to commercial, business employment and mixed use developments, 5% (92 ha) is allocated to pipeline and utility rights-of-way, and the remaining 4% (80 ha) is allocated to existing residential and municipal reserve.

Figure 1: Land Use Breakdown



Net Residential Area Breakdown

There are four different residential land use types planned for the proposed area structure plan, including: single and semi-detached housing, row housing, low-rise to medium-rise apartments up to 4 stories, and medium to high rise apartments (which includes buildings 5 stories and higher). Figure 2, 3 and 4 provide additional information on the residential breakdown by area of residential types (Figure 2), by the number of units by residential types (Figure 3), and by population (Figure 4).

Figure 2: Residential Split by Land Area

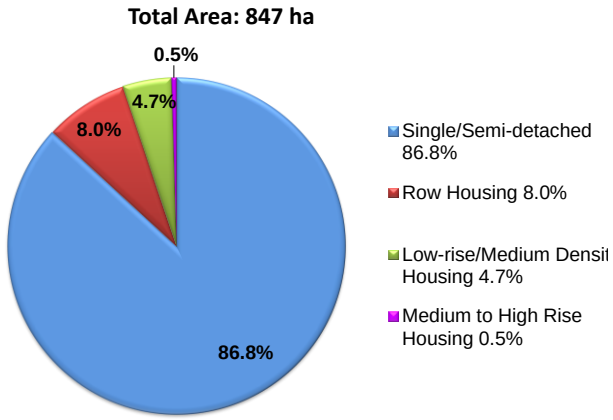


Figure 3: Residential Split by Unit Type

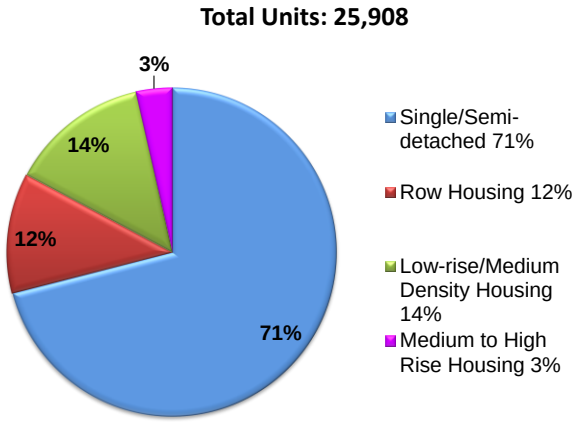


Figure 4: Net Residential Split by Population

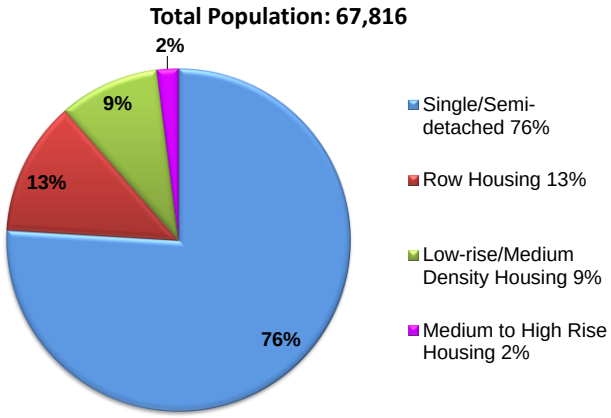


Table 1 includes additional information on the average market value expected for the different residential land use types in the proposed plan. As well, the average residents per unit and average units per hectare are detailed.

Table 1 – Residential Land Uses

	Area (ha)	Units per Hectare	Number of Units	% of Net Residential Area	People per Unit	Population	Average Market Value
Single/Semi-detached	735.7	25	18392	86.8	2.8	51,496	$ 383,458.00
Row Housing	68.0	45	3060	8.0	2.8	8,568	$ 263,983.00
Low-rise/Medium Density Housing	39.5	90	3555	4.7	1.8	6,399	$ 275,480.00
Medium to High Rise Housing	4.0	225	900	0.5	1.5	1,350	$ 452,566.00
Business Employment/Cpommercial	17.6	NA	NA	NA	NA	N/A	$ 4,537,263.19
Total (Residential only)	**847.2**	**385**	**25,907**			**67,813**	

General Infrastructure Breakdown

The amount of infrastructure required to be built by the developer, the City of Edmonton and/or the Province is a function of many things, including the design of the community, the service standards provided, the amount and density of population served, and the presence of existing infrastructure. Tables 2 and 3 detail the infrastructure required for the proposed Decoteau area, its approximate cost in 2014 dollars, and the party responsible for its construction.

Table 2 – Developer Funded Infrastructure

Infrastructure Type	Quantity	Cost (2014 Dollars)
Local Road (Lane km)	235	$211,100,000
Collector Road (Lane km)	74	$92,000,000
Arterial Road (Lane KM)	79	$146,200,000
Local Storm Sewer (km)	117	$39,295,000
Local Sanitary Sewer (km)	117	$35,190,000
Collector Storm Sewer (km)	37	$15,850,000
Collector Sanitary Sewer (km)	37	$13,270,000
ArterialLocal Storm Sewer (km)	22	$6,700,000
Arterial Sanitary Sewer (km)		$2,645,000
Service Connections (#)	23,401	$105,300,000
Storwater Management Facilities (#)	41	$123,000,000
Outfalls (#)	3	$4,000,000
Pump Stations (#)	1	$6,000,000
Shared Use Paths not within road ROW (km)	14	$2,600,000
Total		**$803,150,000**

Table 3 – City/Province Funded Infrastructure

Infrastructure Type	Quantity	Cost (2014 Dollars)
Recreation Facilities (#)	1	$125,000,000
Parks (ha)	158	$34,200,000
Fire Station (#)	1	$11,000,000
Police Facilities and Equipment		$18,500,000
Arterial Road Widening (lane km)	31	$58,400,000
Interchange and Flyover Improvements	3	$50,000,000
Buses (#)	63	$29,600,000
Waste Collection		$42,000,000
Total		**$368,700,000**

Qualifications for Tables 2 and 3

The information in Tables 2 and 3 is derived from consultations with the proponent's consultants and the areas responsible for the asset's provision and maintenance. The following additional information is provided to help qualify the quantities and costs in the tables:

Infrastructure with Greater than Area Benefit

For infrastructure that will serve not only this ASP area but other areas of the city and beyond, only the proportional share of the costs attributed to the Decoteau ASP is included in Table 3. The costs of the infrastructure with greater than ASP benefit were apportioned using traffic volumes for transportation facilities and using population for the police station and waste collection.

Community Facilities

It is anticipated that a Community Recreation Facility will be constructed on the District Activity Park site within the Decoteau area. The facility is anticipated to be constructed when area population reaches approximately 50% build-out (33,000 people). The facility may include an aquatic centre, arena and/or indoor sports component, as well as other multi-purpose components. The facility has been identified in the long term plan - Recreation Facility Master Plan; however the actual timing of the construction of the facility is contingent on funding availability, site land assembly, infrastructure, and population.

Drainage Services

The capital costs for the storm and sanitary systems included in Table 2 were provided by the proponent. These costs are expected to be entirely borne by the area developers.

Edmonton Public Library (EPL)

EPL has stated that a library will not be located in the Decoteau area. The area residents will be served by the Meadows Library as well as a future library to be developed west of the Decoteau area in the longer term.

Edmonton Police Service (EPS)

Planning for EPS facilities considers the City as a whole. Divisional stations are typically required to serve area populations of 150,000 to 160,000 people. EPS anticipates that development on the south side of the City will result in the need for an additional divisional station to complement the existing stations. The station is anticipated to be located in the south central area and not within Decoteau. Costs in Table 3 include Decoteau's proportional share of the divisional station as well as the capital costs related to the purchase of police vehicles to service the Decoteau area.

Parks

The Decoteau ASP identifies 158 hectares of park space. It is anticipated that the park spaces includes a District Activity Park, school/park sites, urban village parks, pocket parks, greenways, and natural areas. The city's capital cost for area park space development is anticipated to total approximately $34 million and will include signage, turf establishment, trees, parking, and servicing. The development timing of the park spaces are contingent on several factors including the area development pace, population, funding availability, land assembly, school board prioritization, and community involvement.

For the purpose of IIMP analysis at the ASP level, park amenities such as trails, playground equipment or special facilities (such as washrooms) are not included in the costing. Therefore, the capital expenditures for parks may actually be higher than indicated in Table 3.

Transportation- Roadways

LRT costs were not included in the analysis.

Costs for the interchange and flyover improvements required at Anthony Henday and 17 Street, Anthony Henday and 34 Street, as well as Anthony Henday and 50 Street were provided by Transportation Services. The interchange and flyover improvement costs were assumed to be equally shared between the areas north and south Anthony Henday Drive. The costs for the area south of Anthony Henday Drive was further apportioned to the Decoteau area based on traffic volumes generated by the area. The Decoteau area's proportionate share is included in Table 3. For analysis purposes only, it is assumed that this interchange improvements will be City funded.

Costs for local roads, collector roads, and shared use paths were supplied by the proponent. Unit costs for arterials were supplied by the proponent, with costs assigned between the City and the developers

based on the anticipated future Arterial Road Assessment (ARA) for the Decoteau ASP ARA basin. The ARA for the Decoteau ASP area will be brought forward to Council prior to or concurrent with the first neighbourhood NSP in the plan area and will create a new basin. For analysis purposes only, it is assumed that all arterial costs over and above the costs anticipated to be included in the Decoteau ARA will be City funded.

50 Street is a highway penetrator south of Anthony Henday Drive and a roadway of regional significance. In the current Arterial Roads for Development Bylaw 14380, 2 lanes of 50 Street (Transportation Utility Corridor to 41 Avenue SW) are included in the South East ASP ARA basin to be cost shared 50%/50% between the South East area and the future Decoteau ASP ARA basin. Therefore, under the current bylaw a total of 2 lanes of 50 Street (Transportation Utility Corridor to 41 Avenue SW) will be funded by the developers. The City and/or other sources will be required to fund the remaining lanes. 50 Street is anticipated to be an 8-lane facility from Anthony Henday Drive to south of Ellerslie Road and a 6 lane facility from south of Ellerslie to 41 Avenue SW.

Transportation- Transit

Bus service requirements have been identified for the Decoteau area. These include the requirements for the provision of bus service within Decoteau as well as the transport of passengers to an existing or future transit/LRT hub to provide access to all areas of the city. No transit centres are planned for the Decoteau area, it is anticipated that the transit centre / park and ride facility in the Walker Neighbourhood, located at corner of Ellerslie Road and 50 Street, will service the Decoteau area. This transit facility may also potentially include an LRT station in the future, with an extension of the Valley Line LRT.

Waste Management

The cost of additional infrastructure for Waste Management Collection Services is included in Table 3. The cost includes processing services, collection services, and the area's proportional share of an Eco-Station. Waste Services has identified that a new Eco-Station is not required in Decoteau. The Ambleside Eco-Station is anticipated to accommodate the population growth. In the future, if needed an additional Eco-Station may be constructed on the south side but it's location and the timing of construction is not yet known. This additional facility would not be located in the Decoteau area.

Demographic Based Cost and Revenue Projections

Forecasting financial impacts into the future is a speculative exercise. The following analysis projects costs and revenues for the proposed development out for 50 years. These projections are based on assumptions, which in a large part consist of what is known of the development at the present time, the current costs for the provision of service and infrastructure, and the length of time required to build both the overall development, as well as the individual components (commercial centres, high density residential projects, etc.) that make it up. The use of the results of this analysis should take this, and the context of the City as a whole, into consideration. The major assumptions used on the analysis are detailed in the end of this report.

The analysis completed considers one build-out development scenario. Both the proponent provided population build-out scenario and the City forecasted population scenario were similar and included a build-out of the neighbourhood in an approximate 39 year time-frame.

As any projection is just that, a projection based on defendable assumptions, it is important to consider that the eventual build-out of the neighbourhood may well be different than that shown in this analysis. The analysis examines the Decoteau area build-out according to the proposed Area Structure Plan and does not consider alternative land use concepts, different development guidelines or patterns, or different densities.

Scenario Demographics

Under the proposed development scenario, the total population of the proposed development of over 67,816 people would be achieved in approximately 39 years as is shown in Figure 5.

Figure 5 – Decoteau ASP Population Build-Out

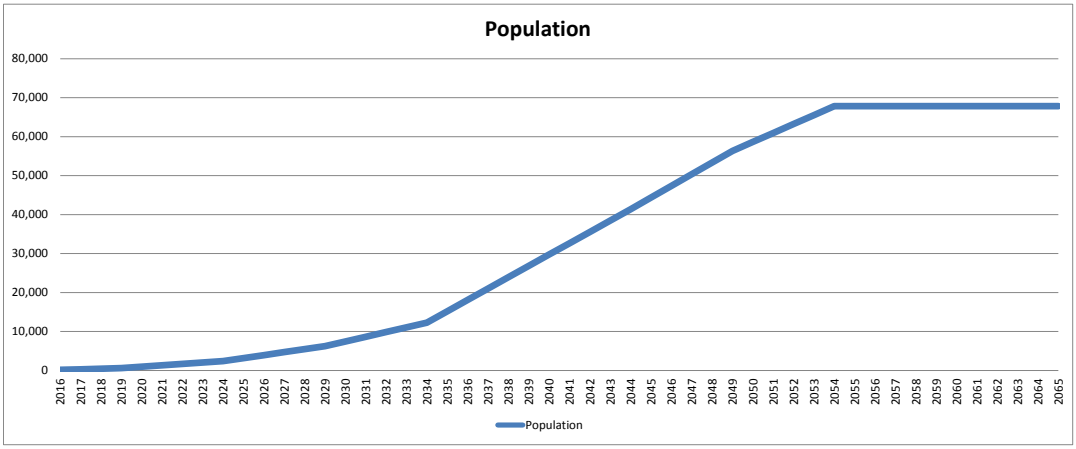
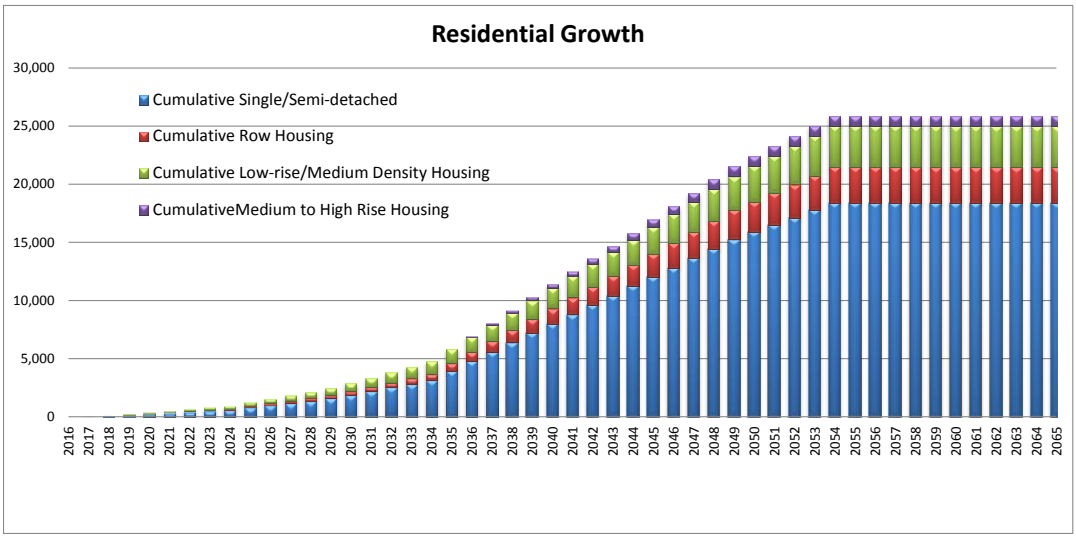


Figure 6 depicts how the projected population growth in Figure 5 translates into housing units of different types. It is cumulative, and shows the relative distribution over time.

Figure 6 – Decoteau ASP Residential Unit Build-Out



Revenue Expectations

City revenues come from a variety of sources. In this analysis, those revenues resulting from the proposed community directly were considered. Indirect revenues, such as EPCOR dividends are not included in this analysis. Figure 7 depicts the expected revenues over 50 years and identifies revenues by one of five sources:

1. Utility Charges: The City Waste and Drainage utilities receive revenue resulting from the use of their services. This revenue is included in the analysis.

2. Franchise Fees: The City receives revenue from Atco Gas and EPCOR Electric customers for the use of public road allowances for their distribution networks.

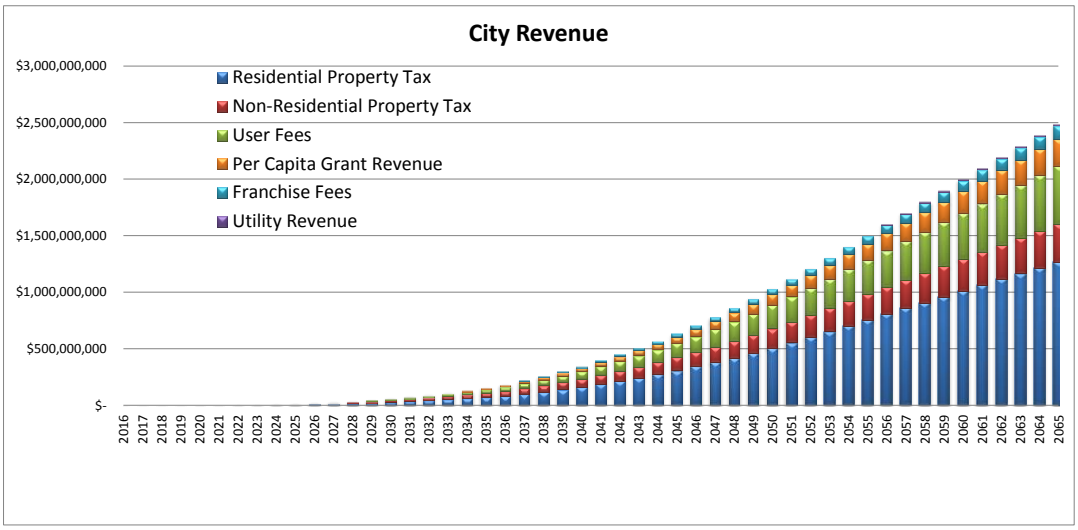
3. Per Capita Grant Revenue: The City of Edmonton relies on provincial and federal grants for a portion of its capital program. Without them, the City is not sustainable given its limited revenue generation options and increasing obligations and service expectations. Although it is difficult to model Grant funding as it varies by program, a general observation is that it increases proportionately with population. A per capita revenue allocation was developed based on existing grants and applied in to the model.

4. User Fees: Individual City Departments and business units may charge fees for the service they provide. Examples include transit fees, recreation centre fees, and parking meters.

5. Non-Residential Property Tax: Commercially zoned areas like strip malls, convenience stores, and grocery stores help form complete communities and provide employment and critical services. They also contribute to the City's tax base, and therefore projected revenues from these areas are included.

6. Residential Property Tax: All residential units pay municipal tax based on the current year's mill rate and the assessed value of the property. As residential units are created in the model based on population growth, the taxes paid by these units are accounted for.

Figure 7 – Decoteau ASP Cumulative Revenues



City Expenditure Expectations

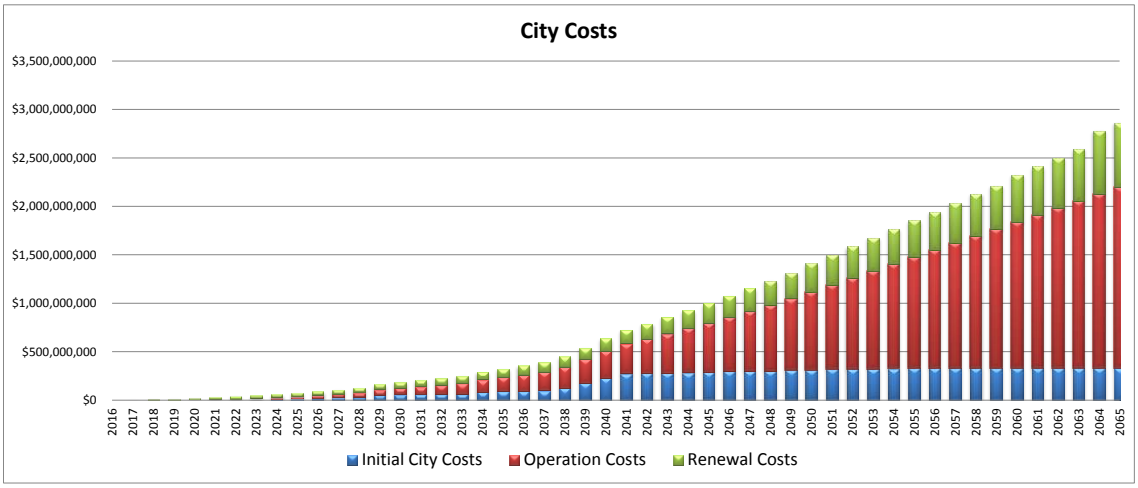
City expenditures are attributable to the provision of a mix of services in the community, building new infrastructure required to provide that service, and maintaining and renewing infrastructure in the community that provides the service the community needs, and enjoys. Figure 8 depicts city costs over a 50 year time span. The expenditure is attributed to three categories:

1. Initial City Costs: This represents infrastructure built and funded by the City, and includes police and fire stations and equipment, community facilities, parks, as well as transportation and transit facilities. Initial City Costs are funded via the City's capital budget.

2. Renewal Costs: Renewal costs represent the reinvestment required to keep the community's infrastructure to an accepted physical standard. These costs are derived from the infrastructure built by both the developer and the City, and include rehabilitative actions throughout the life of the assets, as well as replacement costs at the end of the expected life of the asset. The costs shown calculate the renewal costs at the expected time of expenditure (i.e. not amortized throughout the life of the asset), and therefore some replacement costs for long lived infrastructure such as sewers are not represented in the scope of the analysis. Renewal Costs are funded via the City's capital budget.

3. Operating Costs: Operating costs represent the set of on-going activities and expenses that allow the use of an asset for its intended function. These costs include those required for the use of the asset (e.g. electricity, fuel) and those costs required for the provision of the service provided (e.g. labour). Operating Costs are funded via the City's operating budget.

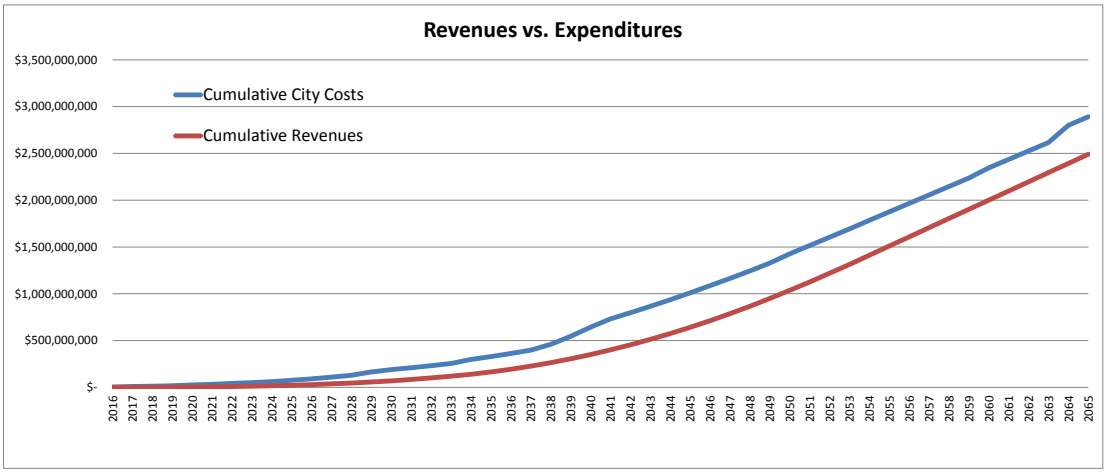
Figure 8 – Cumulative City Costs of Decoteau ASP Build-Out



Summary of Revenues and Expenditures

Figure 9 shows the difference between the City's revenues and expenditures for the proposed Decoteau Area Structure Plan over a projected 50 year period, highlighting the total net fiscal costs and revenues expected from the proposed community.

Figure 9 – Decoteau ASP Revenues and Expenditures



Building Perspective

Infrastructure Planning

Decoteau ASP area is anticipated to require approximately $369 million in capital investment by the City. Major infrastructure needs to be carefully planned and timed to meet the needs of the development.

Bounded on three sides by Anthony Henday Drive and the City's boundary, the area will require special consideration and collaboration with the adjacent County and the Province for the timely upgrade of transportation infrastructure required to access the area.

The town centre and district park site present unique opportunities for planners to take advantage of and benefit from the concentration and density of infrastructure and people to provide more effective and efficient services.

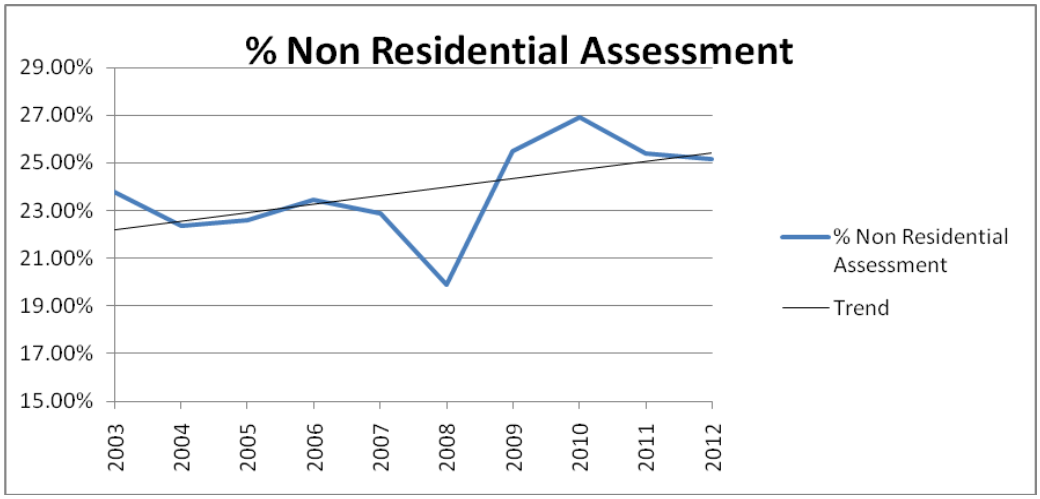
As the Decoteau ASP is a high level plan, some assumptions were made that will be tested and perhaps reworked at the Neighbourhood Structure Plan Stage. It is anticipated that the information presented in this report will change as planning in the ASP progresses and more is known. The Integrated Infrastructure Management Planning Framework calls for further analysis at the neighbourhood structure plan level, presenting more refined information while placing the proposed neighbourhood in context with the rest of the Area Structure Plan and surrounding City development.

Sustainability through Balanced Growth

The overall balance of residential and non-residential land in the City of Edmonton is important in a number of ways. Residential areas provide places for people to live and build community. Non-residential areas provide employment, services, and amenities among other things. Both contribute to and are an essential part of the fabric of the City. Maintaining a healthy balance between them is critical.

It is therefore important to consider how proposed development, in any form, contributes to the overall balanced growth of the City of Edmonton. Figure 10 indicates the percentage of non-residential assessment out of the total assessment value of all property in the City since 2003. It shows that non-residential assessment made up approximately 25% of the total assessment base of the City in 2012.

Figure 10 – Non-Residential Assessment

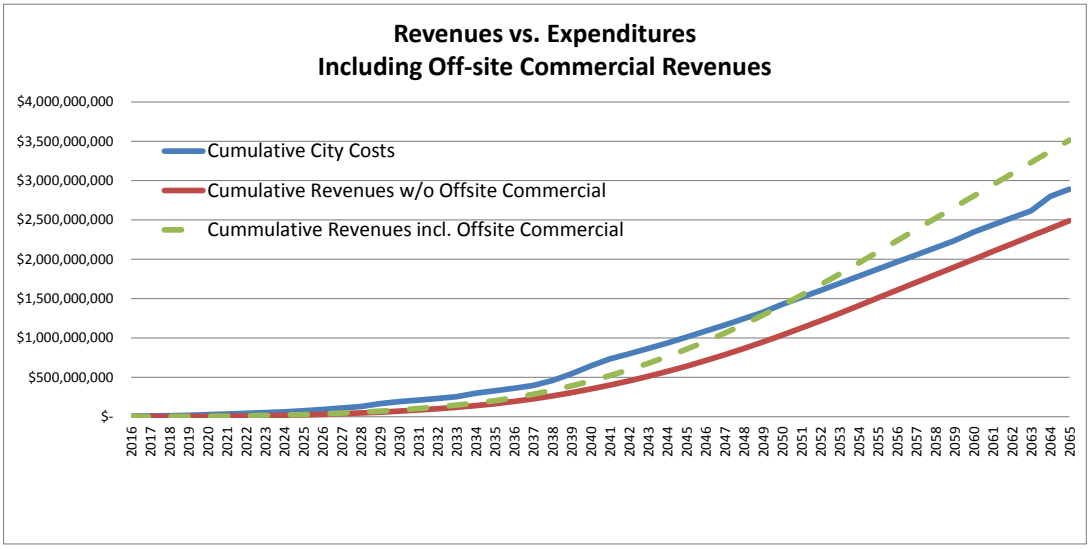


How does the proposed development affect this balance? Generally, residential neighbourhoods have less than 25 % of their assessment base as non-residential, and the proposed Decoteau Area Structure Plan is projected to have 7.6% of its assessment as non-residential. So as the City grows this and other residential areas, it must also grow its non-residential areas to maintain balanced growth.

Conversely, the City must grow its residential areas to balance growth in non-residential areas. In other words, for the City as a whole to maintain the current ratio, there needs to be approximately $5 billion of non-residential assessment for every $20 billion in residential assessment growth. Not considered here are what the overall ratio should be, and the effects of changing it.

Consider Figure 11 – Revenues vs. Expenditures including Off-site Commercial Revenues for Decoteau, which illustrates the importance of balanced growth and the benefit of maintaining the current non-residential assessment ratio.

Figure 11 – Decoteau ASP Revenues and Expenditures (including off-site commercial revenues)



The figure is identical to Figure 9; however it also shows the effect on revenue outlook by including off-site commercial assessment. The premise in this figure is that if the City maintains its current balance of 25% non-residential assessment, by developing commercial areas throughout the City, this additional revenue helps to offset the fiscal imbalance indicated by looking at the Decoteau area by itself.

Growth in the City's assessment base has a significant impact on tax revenues. In the last ten years, the accumulated tax revenue from growth is approximately $1.2 billion.

Committed Infrastructure

With both an aging and growing city, balancing investment choices between renewal and growth is a significant challenge. As infrastructure ages, more maintenance and rehabilitation is required to ensure that infrastructure is performing well and continuing to meet the needs of citizens. At the same time, demands arise for new infrastructure to support growth. The 2012-2014 Capital Budget allocated 54% to growth projects and 46% to renewal projects. The proposed split between renewal and growth in the proposed 2015-2018 Capital Budget is 55% per cent for growth and 45% per cent for renewal.

Table 4 shows the existing city wide commitment and financial obligations to already existing neighbourhoods in approved Area Structure Plans by sector. The Capital Cost indicated in Table 4 is for funding new infrastructure and does not include renewal or operations.

Table 4 - Approved Neighbourhoods and Area Structure Plans - 2013

Sectors	Capital Construction Costs ($ million)		Population Demographics		
	Current Funded	Future Funded	NSP Projected	2012 Population	% Complete
North	$244.40	$616.60	226,020	70,763	31.3%
South*	$159.60	$1,337.80	320,537	60,602	18.9%
West	$32.40	$556.20	177,987	25,344	14.2%
TOTAL	**$436.30**	**$2,510.50**	**724,544**	**156,709**	**21.6%**

Note (*) Does not contain the SE Urban Growth Areas

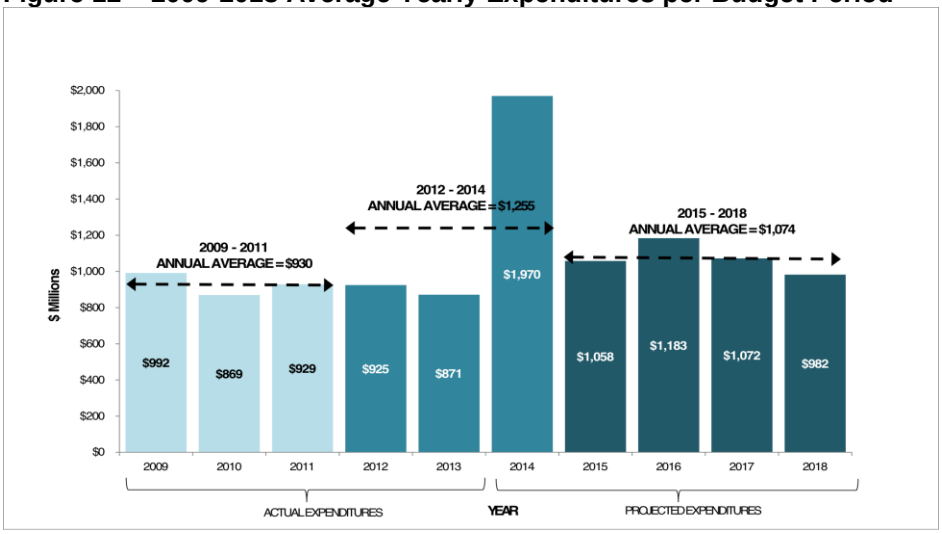
The infrastructure represented in the current funded column is either currently under construction, or will be in the not too distant future. The future funded column represents the balance of infrastructure required to complete the neighbourhoods analyzed.

In some cases, the neighbourhoods may take between 20 and 30 years to complete. This should be considered when putting these costs into context. Both columns are in 2013 dollars. Long term planning for the infrastructure requirements in new growth areas involves understanding how the area will build out and how quickly it will build out, giving planners an idea of what is required now versus what will be required in the future.

During the capital budgeting process, City departments evaluate infrastructure needs in new areas and make recommendations for funding to Council.

The figures in Table 4 are significant, but the City commitment to its capital expenditure is even more significant. Funding for both growth and renewal infrastructure comes in different forms. Figure 12, from the proposed 2015-2018 Capital Budget, shows historical and projected funding levels/breakdowns from 2009 to 2018. Administration makes funding and budget recommendations on a City-wide basis. Prioritization considers all capital requirements throughout the City, and incorporates the strategy and objectives of The Way Ahead.

Figure 12 – 2009-2018 Average Yearly Expenditures per Budget Period



Assumptions

The analysis presented in this report involves the combination of modelling using the Development Infrastructure Impact Model, coupled with area and sector specific analysis performed by the business units responsible for both the infrastructure and the provision of service. The gathering and analysis was performed by the Infrastructure and Funding Strategies Section with assistance from Sustainable Development (City wide planning and the growth analysis unit).

Area Specific Assumptions

With respect to the area being analyzed, the following was assumed:

1. The population was modeled to fill out independently of neighbourhoods. The model started in in year 2016.

2. Assessment averages were calculated using 2014 residential and commercial data. Assessment values from southeast Edmonton (specifically Ward 12) were chosen as the best representation of the type (and relative age with respect to the rest of the City) of development currently expected in the Decoteau ASP.

3. Other assumptions are identified in the qualifications following Tables 2 and 3 in the report.

Assumptions for the Development Infrastructure Impact Model

As with any analytical procedure, the results of a model are dependent on the accuracy of the input data, and the strength of its underlying assumptions. In order to achieve a consistent corporate approach, certain assumptions were made to ensure that all neighbourhood development-related infrastructure is compared on the same basis. The following describes some of the assumptions used in the Development Infrastructure Impact Model:

1. ASPs do not typically include specific infrastructure quantities, rather general land areas for road right-of-ways and municipal reserve. Administration worked with the developer's consultants to ascertain certain quantities in addition to those typically found in ASP document. Given that the ASP represents a high level design for the area and is subject to change, the resulting quantities, costs and revenues are also subject to change. It is expected that more detail and accuracy can be achieved as the neighbourhood planning progresses within the plan area.

2. The Consultant supplied the timing for the neighbourhood's residential, business employment and commercial developments.

3. An assumption was made with respect to when all of the required infrastructure within a neighbourhood would be completed and in service. For modelling purposes, it was assumed that when the neighbourhood structure plan reaches 100% of its ultimate population, all City and developer built infrastructure would be in place.

4. Operation and Maintenance as well as Service Delivery Costs are calculated based on the City of Edmonton 2014 Operating Budget specific to each Asset as follows:

    i. Linear assets (roads and drainage) - $ per kilometre
    ii. Parks - $ per hectare
    iii. All Others - $ per capita

5. Major rehabilitation and renewal costs are asset specific and are based on typical lifecycle costs and timetables.

6. Tax rates and average assessments for both residential and commercial uses are based on the 2014 tax year.

Prepared by: Infrastructure and Funding Strategies
December 19, 2014