

Peer Review – Airport Area West Financial and Economic Analysis

City of Winnipeg

December 22, 2021

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Dear Tyler Markowsky,

Re: Peer Review – Airport Area West Financial and Economic Analysis

The following provides our letter report regarding our peer review observations of the City's Financial and Economic Analysis of the Airport Area West development area.

1. Introduction

The City of Winnipeg has recently undertaken a financial and economic analysis of the development of the Airport Area West lands. This analysis was presented in the City's report titled "Airport Area West Financial and Economic Analysis – Net Present Valuation (NPV) and Long-term Economic Impact Analysis of Providing Municipal Servicing to the Airport Area West", dated July 2021. The purpose of this analysis was to identify the impacts to the City as a result of developing and servicing this area.

Watson & Associates Economists Ltd. (Watson) has been retained to conduct a peer review of this analysis. With respect to the City's financial and economic analysis, Watson has reviewed the report along with the associated Excel files accompanying the report. These were reviewed to assess and test the validity of the assumptions utilized in preparing the analysis. The following report provides Watson's review and discussion with respect to the study prepared by the City.

Note that the City's analysis overall was comprehensive and undertaken in a similar manner to many financial and economic studies undertaken by Watson. The assumptions were identified and explained throughout the analysis and the report was compiled in well-structured manner. As a result, the following peer review comments and feedback seek to enhance the analysis undertaken to date or provide an alternative perspective for the City to consider.

2. Financial Impact Overview

The purpose of undertaking a financial impact analysis is to provide a municipality with the financial impact of development on their tax-supported and rate-supported budgets.

The approach utilized by Watson was devised by the firm and used for over 39 years to evaluate financial impacts for numerous municipalities across Canada, the Ontario Ministry of Municipal Affairs, the Ontario Land Corporation, Canada Mortgage and Housing Corporation (C.M.H.C.), and more than three dozen developing landowners.

Essentially, the methodology involves an operating and capital cost analysis. The operating cost analysis involves calculating the City's tax and non-tax figures with the addition of the proposed development. The revenues and expenditures attributable to the development would be estimated on an incremental basis.

The capital cost analysis discusses the capital requirements and the associated funding sources. This analysis would include costs for all works required due to the development and include annual lifecycle cost estimates attributable to the development.

Watson's full methodology is provided in Appendix A to this letter report and includes a schematic of the process. The review provided herein assesses whether the City's analysis appropriately addresses the financial impacts of the development with reference/comparison to Watson's approach. At a high-level, the following provides a summary of the components to the analysis:

1. **Development Profile**: Identification/estimation of the population, employment, housing units, and non-residential development to occur in the development area.

2. **Property Assessment & Tax Revenue**: As new residential and non-residential development occurs, additional property assessment will be added to the City. This property assessment is estimated and used to estimate the anticipated tax revenue to be generated by the newly developed properties.

3. **Capital Infrastructure Costs**: To ensure proper servicing for the new development, capital needs are identified such as new roads, watermains, wastewater mains, upgrades to treatment plants, etc. These capital needs can be separated into on-site capital, off-site capital, and lifecycle replacement costs.

4. **Capital Financing**: This section of the analysis describes how the capital needs identified will be financed by the City. This may include grants, developer contributions, and/or funding from reserves, taxes, and water/wastewater rates.

5. **Operating Expenditures**: From the anticipated new population and employment, along with the new capital works (e.g. roads), there will be added operating expenditures for the City to consider.

6. **Operating Revenues (non-tax)**: Arising from the anticipated new population and employment growth there will be new non-tax operating revenues the City may receive such as fees, fares, fines, and other user fees. Additionally, the City would receive additional water and wastewater rate revenues.

7. **Net Financial Impact**: Combining all of the above, will provide for a net financial impact to the City's tax-support and rate-supported budgets.

In general, the City's analysis follows Watson's approach, with some variation. The suggested revisions/refinements provided in the subsequent section of this peer review seek to enhance the City's analysis and are provided for consideration.

3. Development Profile

3.1 Project Parameters

Summary of City of Winnipeg's Analysis

The financial and economic impact analysis prepared by the City relies on a concept and phasing plan for the subject area prepared by KGS.[1] The project is comprised of a mixed-use development of 1,456 acres (590 ha) for non-residential development and 403 acres (163 ha) for residential development by buildout. The analysis assumes the development will accommodate 10,700 population and 16,600 jobs by buildout. The buildout land use mix, and corresponding housing, population and employment yields are summarized in Tables 1 and 2 below.

[1] KGS, AAW Regional Water and Wastewater Servicing Preliminary Engineering 99 percent Design Report

Table 1
Airport Area West Buildout Development Parameters
Residential

Land Use	Net Acres	Units per Acre	Units	Persons per Unit (PPU)	Population
Single Family	336	6	2,017	3.05	6,150
Multi Family	67	30	2,009	2.3	4,620
Total	**403**	**10**	**4,026**	**2.68**	**10,770**

Table 2
Airport Area West Buildout Development Parameters
Non-residential

Land Use	Net Acres	Jobs per net Acres	Employment
Light Industrial	1,081	9	11,340 (industrial)
Wet Industrial	192		
Business Park/Commercial Mix	111	31	3,485 (2,080 office, 1,405 commercial)
Commercial	70	26	1,785 (commercial)
Total	**1,456**	**11**	**16,610**

Observations

Watson's observations on the buildout land use mix and population and employment yields identified in Tables 1 and 2 above are as follows:

- While the overall land use mix appear reasonable, it is noted that institutional land is not considered in the phasing. With a significant residential component, there would be anticipated need for local servicing institutional uses such as schools, libraries, community centres and places of worship. The analysis should consider institutional land and development requirements to support local population growth.

- The analysis assumes housing yields based on densities identified in the KGS report of 6 units per acre (15 units per ha) for single family units and 30 units per acre (74 units per ha for multi family units). While the multi-family density assumption appears reasonable, the single-family density assumption appears low and should be reviewed against recent market trends in Winnipeg for new construction.

- The persons per unit (PPU) for single family units (i.e. 3.05) appears low when compared to the PPUs identified for new single and semi-detached housing construction in the City of Winnipeg Development Charges Study (3.33). The single family PPU used for the fiscal and economic impact analysis should be reviewed.

- The employment density assumptions and employment yields for non-residential land uses appear reasonable.

Impact of Observations

- Potentially higher housing density (units per ha) and PPU assumptions for single family housing development would generate moderately higher overall population yields for subject area.

- A provision for institutional lands would have a moderate impact on the land use mix, with an anticipated reduction in developable residential lands, resulting in a moderate reduction in population potential and a moderate increase in employment.

3.2 Project Phasing

Summary of City of Winnipeg's Analysis

The KGS phasing plan identifies growth and development for residential and non-residential development over a 50-year time horizon starting in 2023.

- Over a 50-year time horizon, the employment land absorption anticipated on the Airport Area West lands will total 516 net ha (1,275 net acres) according to the City's assumption in the economic modelling and background documentation. On an annual basis, the employment land absorption would total approximately 10 ha (25 acres) annually. Employment land absorption would include a mix of Wet Industrial at 10% and Light Industrial at 90%.

- The anticipated residential development within AAW reflects growth of approximately 200 housing units per year over the initial 20-year period.

Observations

- The anticipated forecast commercial, office and residential development absorption forecast appears reasonable within the context of anticipated residential and non-residential growth in the City.

- Overall, the employment land absorption seems reasonable within the context of broader City-wide anticipated employment land absorption over the initial 20-year period. Based on a review of the analysis prepared in the 2018 City of Winnipeg Employment and Commercial Lands Study[1], the City of Winnipeg overall is anticipated to accommodate 29 ha (72 acres) of employment land absorbed annually over the 2023 to 2035.[2]

- The City of Winnipeg forecast employment land assumption in the City of Winnipeg Employment and Commercial Lands Study is higher than historical levels,[3] as the land absorption forecast assumes that the City of Winnipeg will address its shortage of serviced employment lands and improve its competitiveness within the Winnipeg Capital Region. This is based on embracing the City of Winnipeg Employment and Commercial Lands Study policy recommendations. The northwest area (the location of the Airport West Area) of the City has represented approximately 38% of the City's employment land absorption.[4] Given the market potential of the area, development in this area has represented even greater share of the City's gross floor area development activity with expansion of buildings and other intensification.[5]

- Figure 1 provides a comparison of the anticipated absorption of the Airport Area West versus the absorption of the rest of the City over a 50-year period.[6] Key highlights include:

    - The Airport Area West would represent approximately 47% to 49% of the City's absorption over the first 20-years of development (annual land absorption average for Airport Area West of 15 ha). By the twentieth year, approximately two-thirds of the net land area of the Airport Area West would be absorbed;

    - The remaining phases are anticipated to experience a lower annual absorption of 8 ha (20 acres) annually and would represent less than a third of the City's annual employment land absorption over the years 20 to

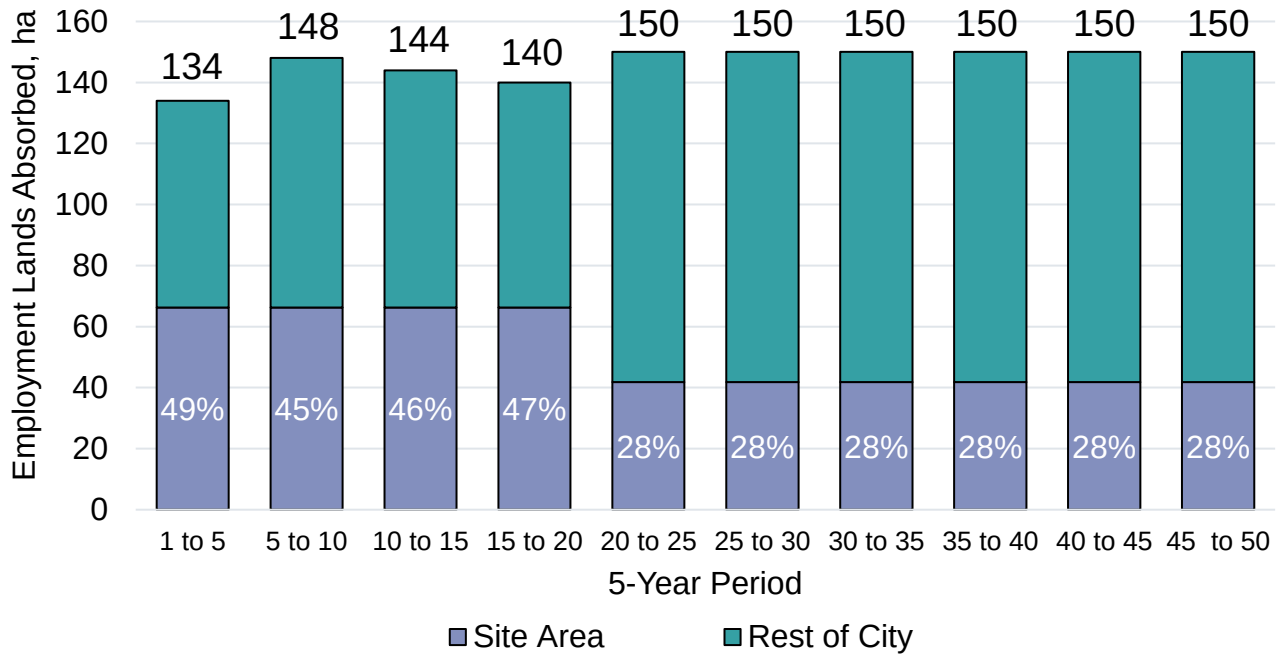
[1] Prepared by Watson & Associates Economists Ltd. in association with Dillon Consulting Limited; MDB Insight; and Meridian Planning Inc., May 16, 2018.
[2] Absorption is defined by Watson as development on vacant parcels. This excludes development on occupied parcels, including those that may have been severed.
[3] Over the 2011 and 2016 period, the City of Winnipeg average 14 ha (35 acres) of employment land absorbed, representing approximately a third of the Winnipeg Capital Region's employment land absorption.
[4] Based on the period over the 2011 and 2016 period as discussed in the City of Winnipeg Employment and Commercial Lands Study, 2018, p.4.23.
[5] Approximately 52% of the City's gross floor area development on existing employment lands occurred in the City's northwest over the 2011 and 2016 period, Ibid., p.4-21.
[6] It should be noted that Watson has extended the City forecast absorption to a 50-year period for comparison based on the forecast average over the 2023 to 2035.

50 horizon. It is unclear why a lower absorption is assumed over the latter part of the forecast period;

- The land absorption represents a reasonable appropriate share of the City's employment land over the first 20 years, as the Airport Area West employment lands will improve the City's competitive position by adding a large tract of serviced employment lands in a desirable area, the northwest area of the Winnipeg Capital Region.

- Employment absorption levels assumed for the site area over years 21 and 50 are considered very conversative given the strong demand for serviced employment lands in the northwest. The City should provide rationale for a lower level of land absorption over this period. If the City were to assume a higher rate of absorption, for example 11 ha starting in year 21 (instead of 8 ha), it is anticipated that the Airport Area West would be developed by year 40 and represent approximately 36% of the City absorption over years 21 to 40 (instead of 28%). It is important that the City consider an appropriate timeframe for development, as it may have implications on the timing of capital needs and the financial impact analysis.

Figure 1
City of Winnipeg
Employment Land Absorption
Airport Area West (Site Area) and the Rest of the City



Source: Based on the Winnipeg Employment and Commercial Lands Study, 2018 forecast by Watson & Associates Economists Ltd. and phasing plans in the KGS Report (Wastewater Sewer Design - Flow Calculation Table), p.18.

Impact of Observations

- A higher employment lands absorption forecast over the post 20-year period would result in buildout of the AAW employment area within a shorter time period than initially identified. This would impact the timing of capital needs and the financial impact analysis, with a potentially higher Net Present Value (NPV).

4. Property Assessment & Tax Revenue

4.1 Summary of City of Winnipeg's Analysis

Assessment

As new development is constructed, the City of Winnipeg will receive additional property assessment arising from the construction of residential and non-residential buildings. The City's analysis provides for an estimate of the assessment per net acre based on a

survey of similar types of development elsewhere in the City. As the exact types of development in AAW are unknown at this time, the City developed three different scenarios with respect to the assessment generated (i.e., low, average, and high potential reflecting differences in land uses).

Tax Revenue

The assessment value assumptions were then applied to the various types of development (both residential and non-residential) to estimate the property tax revenue anticipated over the forecast period. The property tax revenue was calculated based on current tax rates, with an escalation of 2.33% per year (based on a Council approved policy).

Frontage Levy

The City imposes a frontage levy on properties to recover funds which are then used for the upgrading, repair, replacement, and maintenance of City streets and sidewalks. The frontage levy is based on a property fronting on a street that contains a sewer or water main and the rates are applied based on the metres of frontage. The frontage levy revenues in this analysis were estimated based on the average frontage per acre of similar properties in the City and then applied to the forecasted types of development for the AAW area.

Summary

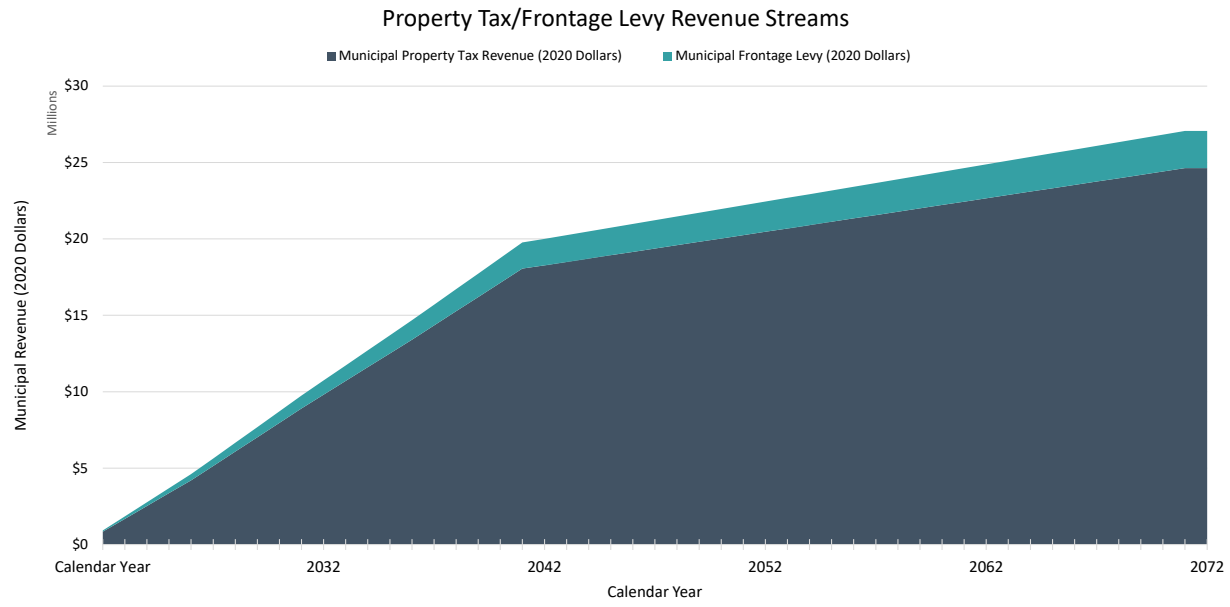
The table below summarizes the average assessment per net acre that was applied in the average scenario along with the associated total assessment, tax revenues, and frontage levy revenues that would be anticipated for the AAW area at buildout.

Table 3
Property Assessment Summary (Average Scenario)

Category	Assessment Value per Net Acre	Total Assessment Generated at Buildout (2020$)	Property Tax Revenue at Buildout (2020$)	Frontage Levy Revenue at Buildout (2020$)
Single Family Residential	$3,620,220	$1,216,976,110	$7,043,188	$638,732
Multi-Family Residential	$4,823,178	$322,985,516	$1,869,263	$143,327
Business Park/ Commercial Mix	$1,904,596	$212,161,769	$1,773,598	$126,509
Commercial	$1,790,676	$126,550,397	$1,057,917	$80,261
Light Industrial	$1,209,399	$1,308,355,694	$10,937,396	$1,228,605
Wet Industrial	$1,209,303	$232,813,844	$1,946,242	$218,640
Total		**$3,419,843,330**	**$24,627,604**	**$2,436,074**

The following graph depicts the revenue streams related to property tax and the frontage levy over the forecast period. Once the area reaches buildout, it is estimated that the AAW lands would provide for an additional $24.6 million in property taxes and $2.4 million in frontage levies annually.

Figure 2
Property Tax/Frontage Levy Revenue Streams (Average Scenario)



In preparing the analysis, the approach taken was consistent with the approach utilized by Watson in similar financial impact analyses and appears to remain consistent with City policies. There are however, three main areas for comment:

1. Property Assessment
2. Property Tax Growth Rate
3. Frontage Levy

4.2 Property Assessment

Observations

To derive the average assessment per net acre by type of development, the City utilized averages of comparable properties across the City. This is consistent with Watson's approach; however, it is suggested that where possible, newer samples could be used to develop these assumptions (e.g. properties constructed in the last five years). Newer construction is a closer comparator of assessment that would be generated from new development in the AAW lands and would provide a more accurate estimate.

Although the analysis is consistent with Watson's approach, adjustments to the methodology used in calculating the average assessment should be made for more accurate forecasting purposes. The survey of applicable properties was utilized to calculate an assessed value per acre. These assessed values per acre were then averaged for each type of development. However, the City may consider totalling the assessed value for all properties in the sample (separated by type) and divide the total assessed value by the total area of the properties. This may provide for a more accurate estimate of the forecasted assessment for the AAW lands.

Impact of Observation

When the methodology is adjusted, the average assessment per net acre is lower for all types of development. A summary of the revised assessment per acre assumptions is provided in the following Table:

Table 4
Revised Approach to Assessment per Acre Calculation

Category	Average of assessed value per acre	Sum of assessment/Sum of acres	Variance (amount per acre)	Variance (%)
Residential	$3,620,220	$3,479,990	-$140,230	-4%
Multiple Family	$4,823,178	$4,658,543	-$164,635	-3%
Office (Business Park)	$2,018,515	$1,856,233	-$162,282	-8%
Commerical	$1,790,676	$1,585,960	-$204,716	-11%
Light Industrial	$1,209,399	$722,384	-$487,015	-40%
Wet Industrial	$1,209,303	$898,415	-$310,888	-26%

These lower assessment values would result in lower property tax revenues anticipated for the City and therefore provide for a lower NPV at buildout.

4.3 Property Tax Growth Rate

Observations

The property tax rates utilized in the analysis have been escalated over the forecast period which follows the Council approved policy of 2.33% annual increases. This assumption provides an annual constraint on property tax increases over the 50-year period and initial findings indicate that revenue generation from this development is not sufficient for cost recovery of the capital required. In order to provide for a higher level of cost recovery, two separate options may be explored further:

1. Raise property taxes; and/or
2. Impose a development levy on new construction.

Impact of Observation

Increasing revenues through either of these two options would provide for a higher level of cost recovery and a more positive NPV, however, an assessment on the City's ability to impose a development levy or to raise property taxes beyond Council's current policy would be required. It is noted that the City did try to impose an Impact Fee in 2016, however, was ordered to remove the fee and refund the money.

4.4 Frontage Levy

Observations

Frontage levy revenue has been calculated by applying the current frontage levy rate to the average frontage feet per acre for the various types of forecasted development. The approach to the calculation is reasonable.

Based on Council's direction, frontage levy rates in the City have not increased. As a result, the frontage levy has not been escalated/inflated in the analysis. It is noted that the expenditures in the analysis are being inflated over the 50-year forecast period; however, this revenue stream has been assumed to remain constant over the same timeframe. It may be more reasonable to assume some sort of inflationary factor for the imposed frontage levy, however, this would require a consideration by City Council.

Impact of Observation

Providing for an inflationary adjustment would lead to increased revenue and a more positive NPV by the end of the 50-year forecast period. This would also provide for alignment of escalating the revenues with the expenditures.

5. Capital Infrastructure Costs

5.1 Summary of City of Winnipeg's Analysis

The City has estimated direct as well as off-site capital costs required for the development of the AAW lands.

Direct Capital Costs

To accommodate growth within this area, approximately $250 million in direct capital costs have been estimated. These costs include water, wastewater, and road infrastructure, as well as facilities, vehicles, and equipment related to community services, fire, paramedics, parks, and transit.

Offsite Capital Costs

Offsite capital costs that are required to support the development of the AAW lands have been estimated and included in the analysis. These projects benefit the City as a whole, however, estimates on the share of the capital costs that could be attributed to the AAW lands have been developed. These costs are in addition to the local roads and sidewalk infrastructure that are assumed to be funded by developing landowners (direct costs noted above). A summary of the capital needs is provided in Table 5.

Lifecycle Replacement Costs

Once an asset is constructed by the City and/or assumed by the City, the asset becomes a liability that the City must replace at the end of its useful life. Lifecycle replacement costs would capture an annual amount that should be saved for the ultimate replacement of the capital infrastructure constructed for this development area. Lifecycle replacement costs were included in the analysis to varying degrees.

Table 5
Summary of Capital Cost Estimates (Excerpt from City report)

Table 2: Current Airport Area West Servicing Capital Cost Estimates

Service	Project Description	Need/Rationale Reference Document	Project In-service Year	Cost Estimate (Millions, 2020 Dollars) *
Directly Related Capital Costs †‡				
Water and Wastewater	Water and wastewater infrastructure §	KGS AAW Regional Water and Wastewater Servicing Preliminary Engineering - Final Report	Various Phases: Year 0 to 30	$112.6
Public Works	Three road network grade separations ‖	Stantec Airport Area West Secondary Plan Amendment Transportation Analysis – May 2020 Rev.	Various Phases: Year 45 to 60	$100.0
Community Services	Community Centres, spray pads, outdoor pools, and libraries ‖	Winnipeg Recreation Strategy/ Recreation, Leisure & Library Facility Policy	Year 10	$17.5
Fire Paramedic Service	Fire and EMS Station ‖	National Fire Protection Association (NFPA) standards	Year 10	$13.0
Parks	Various Amenities ‖	Parks Strategy (Draft)	Year 10	$5.2
Transit	Bus stop platforms, amenities, and fleet addition(s) ‖	Winnipeg Transit Master Plan	Year 10	$1.6
			Total:	**$249.8**
Indirectly Related Offsite Capital Costs † ¶				
Water and Wastewater	AAW Share of NEWPCC Biosolids	N/A - City of Winnipeg Estimate	Year 5	$15.6
Public Works	AAW share of Silver Avenue Expansion and CPT Extension	N/A - City of Winnipeg Estimate	Year 5 and 8	$14.0
			Total:	**$29.6**

Source: Page 12 of Airport Area West Financial and Economic Analysis by City of Winnipeg

5.2 Water & Wastewater Direct Capital Costs

Observations

The direct capital costs related to water and wastewater that are required to service the growth within the AAW lands were identified in the "KGS AAW Regional Water and Wastewater Servicing Preliminary Engineering – Final Report". Through a review of the report and further discussions with staff, the initial capital cost estimates provided appear appropriate to service the growth within development area.

Impact of Observation

As the approach taken by the City appears to be appropriate, there are no suggested refinements to the analysis.

5.3 Public Works (Roads) Direct Capital Costs

Observations

The direct capital costs related to public works that are required to service the growth within the AAW lands (three road network grade separations) were identified in the "Stantec Airport Area West Secondary Plan Amendment Transportation Analysis", dated May 2022. Similar to water and wastewater, through discussions with staff, these cost estimates appear reasonable for the analysis. Further, as the timing of the capital works is at the end of the forecast period (year 45 of 50), the financial impact prior to construction would appear to be minimal.

Impact of Observation

As the approach taken by the City appears to be appropriate, there are no suggested refinements to the analysis.

5.4 Other Direct Capital Costs (Community Services, Paramedics, Parks, Transit)

Observations

Based on Table 5, costs related to these services have been recognized in year 10 of the analysis, which is the midway point of full buildout of the residential development in AAW. Given that it is unlikely that these projects will all be undertaken in one year, it is suggested that these costs could be spread over multiple years to more accurately reflect the timing of these projects.

Observation

The refinement suggested above is unlikely to have a significant impact on the results of the analysis, however, it would provide a more accurate estimation of the NPV during the early years of the forecast period.

5.5 Offsite Capital Costs (NEWPCC Biosolids Facility)

Observations

As this capital project will service growth across the entire City, AAW's share of the capital costs for this facility have been estimated based on an average of AAW's forecasted water consumption and land area relative to the rest of the City (50% based on water consumption and 50% based on land area).

Industrial uses, specifically wet industrial uses, produce significantly more biosolids than other types of development (e.g. residential). As a result, it may be noted that the wet industrial development that is planned for this area may have a larger requirement for biosolids treatment than what would be attributed based on water consumption or land area. The City may consider undertaking a review of the types of uses in AAW relative to the rest of the City. If the proportion of industrial use in AAW is relatively similar to the rest of the City, the approach undertaken would be reasonable. If not, a higher share of the costs may need to be attributed to AAW for the biosolids facility.

Consideration for a review of specific industrial areas in the City that would be similar to AAW to determine their usage of biosolids treatment may provide varied assumptions for consideration by the City.

Impact of Observation

Should a higher share of the Biosolids facility cost be allocated to the AAW lands, the NPV of the analysis would be lowered.

5.6 Offsite Capital Costs (Chief Peguis Trail Extension and Silver Avenue Expansion)

Observations

The Chief Peguis Trail Extension and Silver Avenue Expansion projects are required to support the development of AAW, as well as other growth in the City. The share of capital costs attributable to AAW for these road projects is based on traffic modeling by City staff. An estimate of 5 to 15% of the total costs of these roads are attributed to AAW based on the proportionate share of traffic flows to the year 2041. Given that the construction of these roads is required to support development in AAW (i.e. if these

works are not completed, development in AAW cannot occur), a higher attribution could be made for AAW's share of these costs. In addition, the traffic modelling data is based on information to 2041. The AAW lands are not fully built out by this time (2051), and as a result, a higher share of the traffic may be expected by full buildout of AAW.

Impact of Observation

A higher share of these capital costs would lead to more expenditures included in the analysis and a lower NPV.

5.7 Lifecycle Replacement Costs

Observations

When new infrastructure is constructed/installed, a future liability is assumed for the eventual replacement of these assets. To recognize this liability, funds are typically allocated on an annual basis to replace the infrastructure at the end of its useful life.

Lifecycle replacement costs have been included in the analysis for roads infrastructure based on an annualized amount that would be required for the eventual replacement. This amount reflects a City benchmark for replacement costs. The inclusion of annualized lifecycle costs is consistent with Watson's approach.

Lifecycle replacement costs have also been included for water and wastewater infrastructure; however, this has been based on amortization costs. The approach of utilizing amortization as a proxy for replacement costs tends to understate the true cost of eventual replacement as it is based on historical cost. This understatement is exacerbated for water and wastewater infrastructure which tends to have a longer useful life. It is suggested that a method utilizing future replacement costs, rather than amortization costs be used to approximate these lifecycle amounts.

It is also suggested that lifecycle costs be included for all other infrastructure requirements (e.g., transit, community services, paramedics, parks) as lifecycle costs have not been included for these capital works.

Observation

The inclusion of additional lifecycle replacement costs would increase the overall expenditures and lower the NPV over the forecast period.

6. Capital Infrastructure Financing

6.1 Summary of City of Winnipeg's Analysis

All direct capital costs are assumed to be financed as follows; 50% through debt and 50% through cash payments. Debt has been assumed over a 30-year term at an interest rate of 5%.

With regard to offsite capital costs, it has been assumed that the City would only be responsible for 33% of the total costs. It is assumed that more senior levels of government would provide the remaining funding, based on experience with similar types of projects.

6.2 General Financing Assumptions

Observations

Based on discussions with City staff from Treasury and Water/Wastewater, the City should have sufficient reserve funds and debt available to finance these expenditures in the years they are required. It is noted that the assumed interest rate may be higher than current market rates, however, it is not unreasonable over the short to medium term to assume this higher interest rate.

Impact of Observation

There are no suggested revisions for the analysis.

6.3 Financing for Offsite Costs

Observations

The assumption that other levels of government would be responsible for majority of the costs for offsite capital is based on the City's experience in undertaking similar projects. It is not guaranteed that this funding would be secured. If funding is not provided by senior levels of government, the City would be required to fund these projects, posing a major impact to this analysis.

It is suggested than an additional NPV scenario be undertaken with the assumption that the City is responsible for funding 100% of the capital costs. This will assist in demonstrating the importance of grant funding to senior levels of government while also providing the City with an understanding of the level of risk that it is assuming should grant funding not be secured.

Impact of Observation

Undertake an additional NPV scenario to remove the funding assistance for offsite capital. Removing this external funding in the scenario analysis would have a negative impact on the NPV.

7. Operating Expenditures

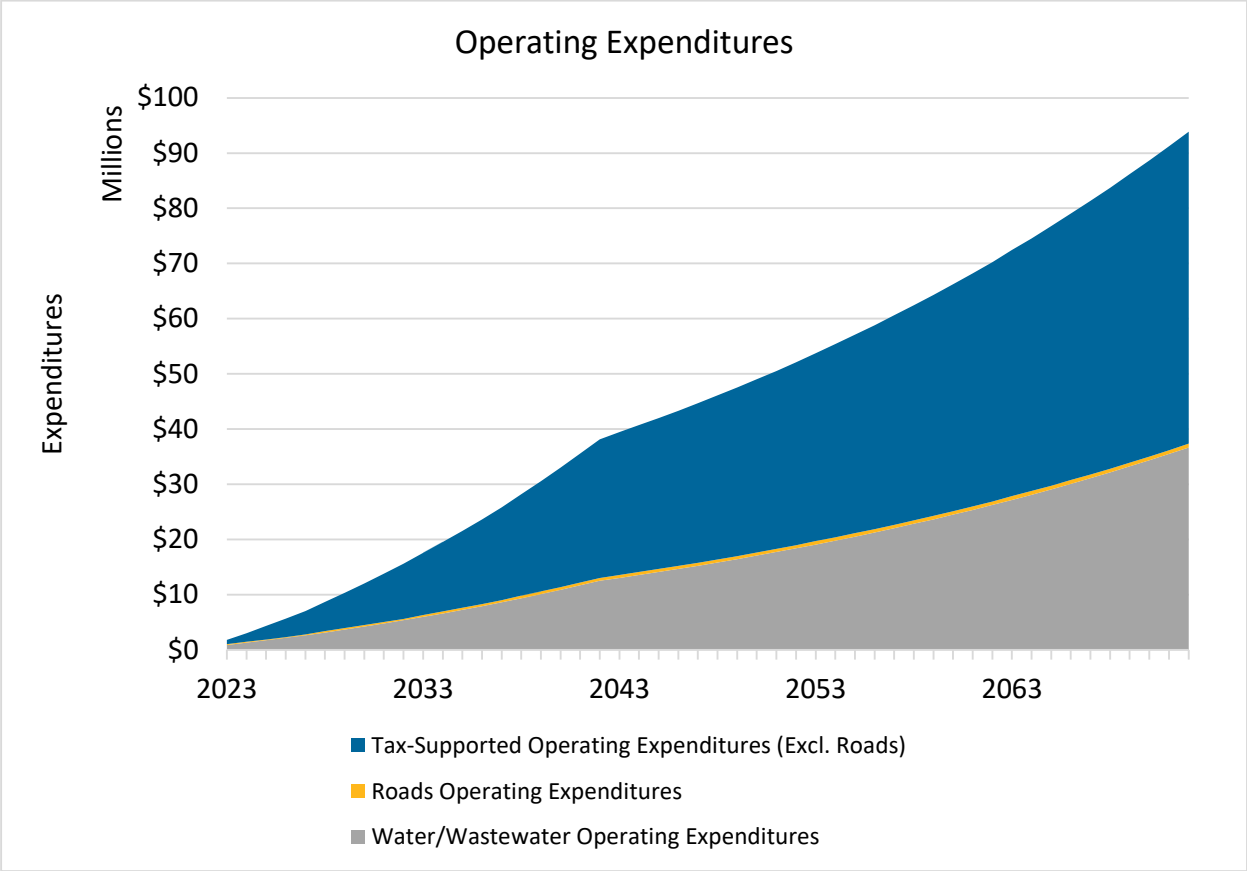
7.1 Summary of City of Winnipeg's Analysis

The additional operating expenditures resulting from growth in population and employment within AAW were analyzed based on the following:

- Tax-Supported Expenditures (excluding roads): population/employment basis;
- Roads Expenditures: per lane km basis; and
- Water/Wastewater Expenditures: per megaliter of treated water.

The graph below provides the forecasted operating expenditures attributable to development within AAW. By the time the area reaches full buildout, an additional $94 million in annual operating expenditures is forecasted. Further details on the approach used for each category of expenditures is provided in the sections that follow.

Figure 3
Summary of Operating Expenditures



7.2 Population/Employment Based Operating Expenditures (Excluding Roads, Water, and Wastewater)

Tax-supported operating costs are based on the City's 2021 operating budget. The costs by services were divided by the current population and employment to estimate the current per capita and per employee operating costs in the City. These per capita and per employee costs were allocated based on the current ratio of population vs. employment in the City for all services except Community Services (allocated entirely to the residential sector). These per capita/per employee costs were then applied to the forecasted population and employment within AAW to determine operating budget impacts.

Observations

The approach of allocating expenditures to growth based on per capita and per employee costs is consistent with Watson's approach. It is noted that a minor

attribution of Community Services to the non-residential sector could be made to recognize some level of utilization of these services.

Impact of Observation

Although the change in the allocation of Community Services would more accurately reflect potential use, it is not likely to have a significant impact on the analysis.

7.3 Roads Operating Expenditures

Operating costs related to roads maintenance (e.g., snow clearing, reactive maintenance, etc.) have been calculated on a per lane km basis (total operating cost for roads in the budget divided by the current number of lane km in the City). This per lane km cost was applied to the km of roads to be developed within AAW.

Observations

The approach utilized to calculate the ongoing operating costs for roads is consistent with Watson's approach. Calculating operating costs for roads on a per lane km basis is more appropriate than using a population/employment-based approach as expenditures for these services are generally related to the infrastructure constructed, more than the population and employment in the City.

Impact of Observation

As the analysis is consistent with the approach that is utilized by Watson, there are no additional suggestions to refine the analysis.

7.4 Water/Wastewater Expenditures

To determine incremental operating costs (i.e., day-to-day expenditures) from the development of AAW, benchmark data on treatment costs per unit of treatment were utilized. This information was obtained through Municipal Benchmark Network Canada. The City provides information to this organization annually. The per unit costs were then applied to the anticipated water volume from the AAW properties. The assumption on water volume was based on information utilized in the City for comparative purposes.

Observations

Through discussions with staff, it was observed that the benchmark data utilized in the analysis provides for both operating and amortization expenditures (as a proxy for lifecycle replacement costs). As mentioned previously, utilizing amortization tends to understate the true costs of eventual replacement. The approach of determining

incremental operating costs based on treatment costs per unit is a reasonable approach.

The assumptions for water volume per user are reasonable.

Impact of Observation

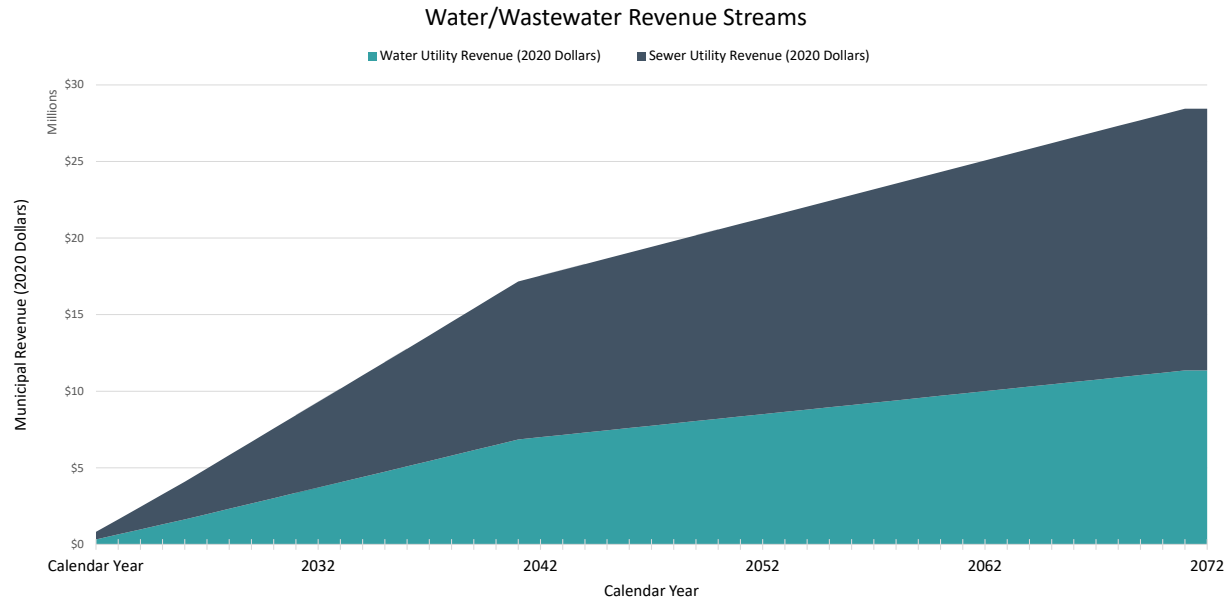
There are no suggestions related to the day-to-day operating costs included, however, it is suggested to include a measure that is more indicative of future replacement costs than amortization.

8. Non-Tax Operating Revenues

8.1 Summary of City of Winnipeg's Analysis

Additional water and wastewater revenues as a result of growth were calculated in the City's analysis. Volumetric-based revenue has been calculated for the AAW area based on average consumption patterns of similar types of development. Given the uncertainty on the types/density of development, base charge revenues were not calculated as part of this analysis. The graph below provides the volumetric revenue streams for both water and wastewater. By the time the area reaches buildout, an additional $29 million in revenue would be generated annually.

Figure 4
Water/Wastewater Volumetric Revenue Forecast



Other non-tax revenues such as user fees, fines, grants, etc. were not incorporated into the City's analysis.

8.2 Water/Wastewater Revenue

Observations

The approach of calculating incremental volumetric revenue based on average consumption patterns of existing development is consistent with Watson's approach.

Although base charge revenue has not been calculated, an assumption on the revenue generated from both residential and non-residential development could be derived based on existing development. This may provide for an additional amount of revenues in the range of $800,000 to $1,000,000 per year at full buildout.

Impact of Observation

The inclusion of base charge revenue in the analysis would provide for a more positive NPV analysis.

8.3 Other Non-Tax Revenue

Observations

Other revenue sources such as user fees, fines, fares, grants, etc. were not incorporated into the City's revenue analysis. These other non-tax revenues represent approximately 29% of the City's total revenues (excluding water/wastewater). Although these revenue sources were not identified as part of this analysis, they represent a large portion of the City's total revenues and should be incorporated to provide a more accurate net financial impact. It is noted that 12% of the 29% of revenues are grants and may not grow at the same extent as other sources.

Impact of Observation

The inclusion of these additional revenues would result in a more positive NPV.

9. Net Financial Impact

9.1 Summary of City of Winnipeg's Analysis

The following bar graph and table summary provide the NPV results over the forecast period. By year 50, the in-year NPV reaches approximately $105.4 million under the average scenario. These results are based on a 5% discount rate and cashflow calculation of the expenditures and revenues identified above.

Figure 5
In-Year NPV Summary over Forecast Period (Excerpt from City Report)

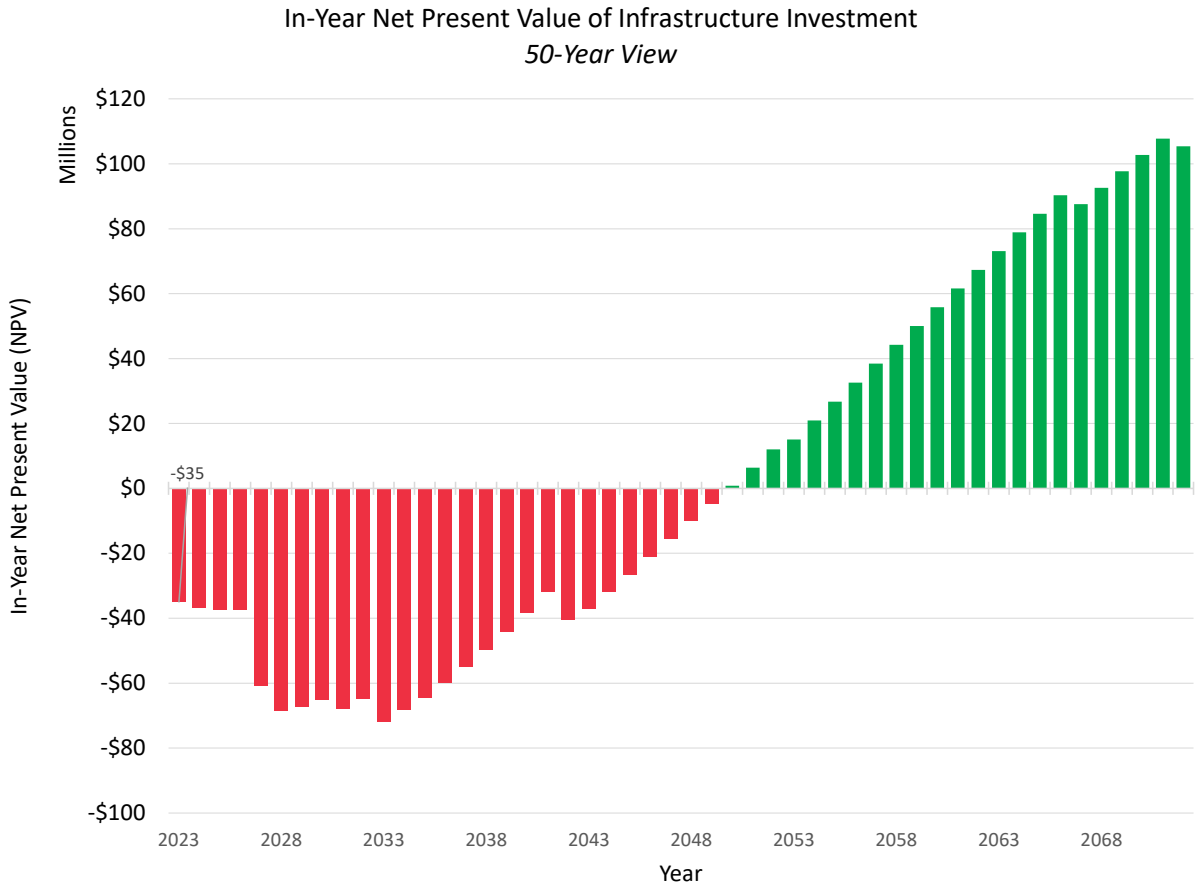


Table 6
NPV Summary (Excerpt from City Report)

Table 3: Net Present Value Analysis Summary
(Offsite and Tax-Supported Operating Costs Included; Dollar Figures in Millions)

Metric		Development Scenario by Potential		
		Low	Average (Suggested)	High
In-Year Net Present Value (NPV)	Year 1	-$35.5	-$35.1	-$34.9
	Year 5	-$66.0	-$60.9	-$58.2
	Year 10	-$82.4	-$64.8	-$55.7
	Year 15	-$90.6	-$55.1	-$36.6
	Year 20	-$97.8	-$40.5	-$10.5
	Year 25	-$94.7	-$15.5	$26.2
	Year 50	-$66.0	$105.4	$196.1
	Years until NPV is Zero or Greater	64	28	22
Return on Investment (ROI; current dollars)	50-Year Total Investment Cost (Current Dollars)	$2,658	$2,998	$2,998
	50-Year Total Investment Revenue (Current Dollars)	$2,687	$3,779	$4,174
	50-Year Total Surplus/Deficit (Current Dollars)	$29	$781	$1,177
	Return on Investment	1%	26%	39%

Source: Page 19 of Airport Area West Financial and Economic Analysis by City of Winnipeg

The City's study also provides for a return on investment (ROI) calculation which compares the inflated revenues to be generated relative to the inflated capital and operating costs. The average scenario provides a ROI of 26%.

9.2 Discount Rate

Observations

As mentioned above, a 5% discount rate was applied in the NPV analysis based on the City's asset management policies. This rate is consistent with the City's past practices with similar analyses. The analysis may also be considered using inflation (i.e., 2%) as a discount rate to estimate the findings in today's dollars. By analysing the results in today's dollars, additional perspective would be provided on the expenditures and revenues generated by this development.

Impact of Observation

Utilizing a lower discount rate would provide a perspective in uninflated dollars and potentially move the analysis into a more positive position.

9.3 Return on Investment (ROI) Calculation

Observations

Public sector definitions for ROI differ when compared to private sector definitions, however, the main question to be answered is whether over fifty years, the upfront investment and operating costs to provide services will be less than the overall revenues to be generated over the long-term. The ROI analysis was undertaken in inflated (current) dollars but could also be reviewed in uninflated (2020) dollars to provide a varied perspective on the results of the analysis.

Impact of Observation

Analysing the outputs of the modeling with different metrics will not alter the analysis, but rather provide additional perspective on the results. Additional scenarios may be undertaken to review these impacts.

10. Economic Impact

Summary of City of Winnipeg's Analysis

The non-residential land uses, and corresponding employment identified in the NPV model, are adapted to the Economic Impact Model to generate a range of economic outputs including employment type, Income, and taxes.

The Economic Impact Model is also used to identify potential housing demand induced by the employment generated from the AAW and the corresponding economic impacts of this residential growth.

Observations

While the overall employment yields identified in the Economic Impact Model is consistent with the NPV model, the Economic Impact model is somewhat limited in how narrowly it classifies employment by ICI sector. For example, institutional employment may be accommodated on commercial lands and while industrial employment is the primary employment sector accommodated in light industrial land use, some commercial, office and institutional employment is also typically observed. As such, the mix of potential employment by sector within the AAW is likely broader than what is currently reflected in the analysis. A more comprehensive assessment of potential

employment by sector within the proposed land uses could be completed to strengthen the analysis, including providing estimates by two-digit NAICS.

The input assumptions used in generating employment yields in the Economic Impact Model appear unreasonable with respect to coverage (FSI) and job density (per acre) assumptions. For example, the Economic Impact Model has unreasonably high assumptions regarding job density for office and commercial sectors (150 jobs per acre and 101 jobs per acres, respectively) and coverage factor for industrial development also appears unreasonably high (1.00). The inputs used to generate the employment yields in the Economic Impact Model should be reviewed and revised to better reflect market trends.

The Economic Impact Analysis should consider employment multipliers to assess the indirect economic effect or "shock" from income and/or employment generated by each employment sector. This includes identifying corresponding indirect and induced (i.e. spinoff) employment potential from the project.

The Economic Impact model identifies an estimate of induced housing demand from direct employment generated from development based on historical employment and housing growth trends observed in Winnipeg CMA. Key observations:

- Approach to estimating demand growth for housing from employment generated from the subject area could be refined to consider a broader range of demographic and socioeconomic considerations to more accurately reflect anticipated household formation patterns and demand growth for housing. At a minimum, the approach should be grounded to the forecast employment and housing growth for the City of Winnipeg, not historical trends based on the Winnipeg CMA.
- The PPUs used to generate population from the induced housing demand should also be reviewed and should be consistent with the NPV model. For example, the PPUs used for semi-detached, townhouses and apartments should differ, with higher density housing exhibiting lower PPUs.

Impact of Observations

The potential underestimating of commercial and institutional employment may impact the economic impacts related to employment type (i.e. full-time, part-time), income, and taxes.

Identification of potential spinoff employment will generate additional economic impacts related to wages, and taxes which may impact the City's observations.

Current approach to identifying housing and population growth induced by the AAW is likely over reporting housing and population outputs which has potential implications on the economic impacts identified.

11. Concluding Remarks

The analysis undertaken by the City represents a robust and thorough analysis that is largely consistent with the methodology utilized by Watson. Although there are some areas where the analysis could be refined, the study represents a well thought-out and robust analysis. The observations and suggestions provided in this peer review represent minor refinements to the analysis. Although certain observations would increase the NPV and others would decrease the NPV, it is expected that these refinements, in total, may provide a more positive NPV than what the initial analysis has concluded.

Yours very truly,

WATSON & ASSOCIATES ECONOMISTS LTD.



Gary Scandlan
Managing Partner

Appendix A

Conceptual Overview of Watson's Methodology for Fiscal Impact Analyses

Appendix A: Conceptual Overview of Watson's Methodology for Financial Impact Analyses

The ability to model development patterns and related costs and revenues is a key step in supporting more informed and better decision-making in relation to the long-term financial planning of a municipality. Generally, this analysis starts with the forecast of the anticipated development. It then allows for the estimation of population and employment to be generated as a result of this development and the amount of operating and capital needs.

The capital needs forecast is analyzed further to determine lifecycle costs to be borne by the municipality. Operating expenses and revenues are forecast for the period based on current per capita/per employee program costs, based on information from the current operating budget. The result of this assessment is the forecast of the net fiscal impact on the tax-supported budget and the rate-supported budget.

Figure A-1 provides a high-level schematic overview of the fiscal impact methodology along with development implications, which are described as follows:

Green Boxes – the upper green box denotes the anticipated development to be analyzed within the municipality. The lower green box denotes the forecast provided for the residential and non-residential growth components.

Light Blue Boxes – denote the capital infrastructure needs to service the anticipated development and existing residents/businesses. Capital needs may be developed from engineering reports, master plans, historic levels of service, etc. Lifecycle costs associated with the capital works required are estimated for both direct and indirect lifecycle costs.

Yellow/Light-Orange Box – denotes the additional operating expenditures anticipated over time. These costs can be assessed on two different bases, operating costs related to infrastructure and/or operating costs related to population/employment. The former identifies the specific operating costs anticipated to be incurred as additional infrastructure (i.e. roads, pipes, etc.). The latter identifies program expenditures which are linked to population and employment growth and are not area specific (e.g. fire services, police services, etc.). These cost estimates are obtained from the municipality's most recent operating budget.

Dark Orange Boxes – denote anticipated operating revenues commensurate with development. The upper box identifies the additional assessment (and hence property taxation) anticipated as residential, commercial and industrial building activity occurs over the forecast period. The assessment forecast is based on current assessed values of anticipated development types, which are applied to the growth forecast projections.

Weighted market value assessment is determined based on the municipality's current tax classifications and tax ratios. This new assessment gives rise to additional property tax revenue. The lower box identifies non-tax revenues such as user fees, permits, licences, etc., which are anticipated to grow in concert with population and employment growth.

Dark Blue Box – denotes the overall financial implications for property taxes (and water/wastewater rates) over the forecast period. The real property tax and water/wastewater budget impacts are determined by applying the incremental increase in anticipated revenues less the incremental increase in anticipated expenditures.

Figure A-1
Financial Impact Analysis Methodology

