Winnipeg

Airport Area West Fiscal and Economic Impact Analysis

Fiscal Net Present Valuation and Long-Term Economic Impact Analysis of Providing Municipal Servicing to the Airport Area West

Economic Research · January 2022

Executive Summary

This report analyzes the municipal fiscal and economic impacts of providing municipal servicing to the Airport Area West (AAW) region on the City of Winnipeg and senior levels of government.

The fiscal analysis contrasts a comprehensive set of municipal revenues and expenditures, while the economic impact considers potential job growth, wages, and government revenues.

Fiscal Impact Net Present Value (NPV) Analysis Key Findings:

1. The total NPV of the investment to the City of Winnipeg is $115M after fifty years, with the NPV to tax-supported operations ($11M) differing from the NPV to utility ($104M) operations.
2. There is uncertainty around both revenue (quality and pace of development) and expense (capital and operating costs).
3. The break-even year for the investment is expected to occur 27 years after development begins. Prior to the break-even year, existing municipal tax and utility ratepayers will be responsible for carrying the capital and operating cost associated with the development. Funding from senior levels of government to help offset infrastructure costs would result in an earlier break-even year.

Economic Impact Analysis Key Findings:

1. The Airport Area West represents a strategic area for the expansion of local employment lands and contains CentrePort Canada South which is located near tri-modal transportation networks and access to Canada's Foreign Trade Zone programs.
2. The land is anticipated to accommodate approximately 16 thousand jobs which in turn will generate up to $787 million in wages (2020 dollars) annually resulting in the following government revenues (at 2020 tax rates):
    - **Federal Government:** $129 Million
    - **Province of Manitoba:** $107 Million
    - **City of Winnipeg:** $80 Million

Due to the significance of this investment, the City of Winnipeg retained a third-party consultant and conducted stakeholder engagement. Watson & Associates Economists was retained to conduct a peer-review of the City's fiscal and economic analysis. The consultant observed that the City's analysis was "*robust and thorough*" and concluded that "*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.*"

Finally, the City of Winnipeg solicited feedback on this analysis from CentrePort Canada Inc., Cushman & Wakefield Stevenson, and Economic Development Winnipeg. Feedback indicated there is strong demand for land in the area once it becomes serviced, implying that the land absorption rates assumed in this analysis are conservative. Feedback also emphasized that the City of Winnipeg should utilize the Inland Port Special Planning Area and streamline zoning and permit approval processes to ensure competitiveness with the R.M. of Rosser.

In summary, the following report demonstrates that the fiscal and economic impact of the Airport Area West is positive for the City of Winnipeg, the Province of Manitoba, and Canada. These conclusions are sensitive to many assumptions; however, the assumptions have been thoroughly tested and reviewed by both a third-party consultant as well as key stakeholders.

Contents

Section I: Background Information 4

Overview of the Airport Area West Region 4

Importance of CentrePort Canada 5

Availability of Serviced Industrial Land in Winnipeg 6

Previous Economic Impact Assessments of CentrePort Canada 6

Section II: Airport Area West Development Overview 7

Development Absorption Rates and Land Use 7

Development Scenarios 8

Airport Area West Municipal Capital Costs 10

Airport Area West Municipal Servicing Revenues 12

Section III: Airport Area West Development Risks 14

Winnipeg's Municipal Tax Competitiveness with the R.M. of Rosser 14

Biosolids Treatment Capacity and Service Sharing Agreements 15

Shallow Bedrock in the Area 16

Transport Canada Regulations on West Side of Airport 16

Section IV: Net Present Value (NPV) Analysis 17

NPV with Offsite and Tax-Supported Operating Costs Included 18

NPV with Offsite and Tax-Supported Operating Costs Included, by Entity 22

NPV with Offsite and Tax-Supported Operating Costs Excluded 23

Section V: Long-Term Economic Impact Analysis 25

Section VI: Concluding Discussion 27

Significance of Net Present Value (NPV) Findings 27

Sensitivity of Net Present Value (NPV) Assumptions 27

Capital Cost Estimate Impact on Net Present Value (NPV) Findings 28

Does Growth Pay for Growth? 29

Analysis Uncertainties and Risks 30

Analysis Limitations 30

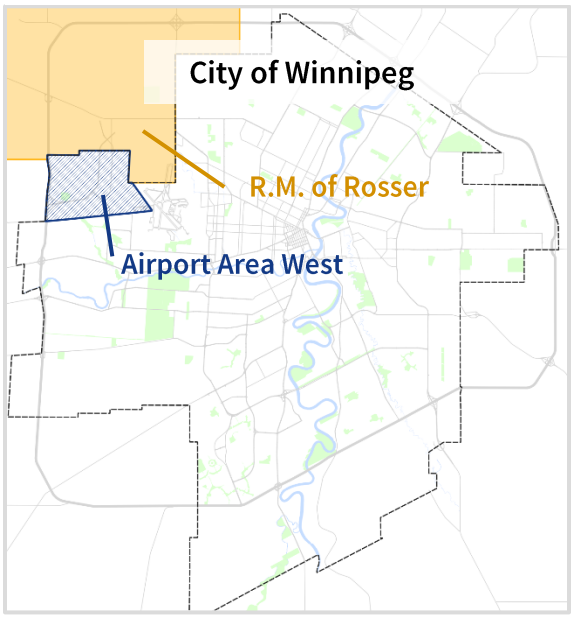
Report Appendicies 32

Section I: Background Information

Overview of the Airport Area West Region

The northwest corner of Winnipeg contains 3,600 acres (1,457 hectares) of unserviced land referred to as the Airport Area West. This region is bounded by the Rural Municipality of Rosser to the North and west, Winnipeg Richardson International Airport to the east, and Saskatchewan Avenue to the south.

Map 1: Airport Area West Region



As shown in map 2 below, currently the land is primarily used for agricultural purposes with a few parcels allocated to light industrial activity. It is estimated that in 2020, this area generated approximately $150,000 in municipal property tax revenue.

Further, the southern part of Canada's first inland port and foreign trade zone (FTS), CentrePort Canada, is located within the Airport Area West region. This area represents a strategic location for transportation-orientated industries as it is located next to major transportation networks such as Winnipeg Richardson International Airport, the CentrePort Canada Way expressway, the Perimeter Highway, and major North American rail lines.

The northern component of CentrePort Canada is located within the Rural Municipality of Rosser which already has municipal servicing in place. Recent major developments in CentrePort Canada North (within the R.M. of Rosser) include Merit Functional Foods (canola and pea processing), Imperial Seed (agricultural seed processing), and Rosenau Transport (trucking and logistics). [1]

Map 2: Current Land Use in Airport Area West (2020)



[1] Source: CentrePort Canada Inc. website. "*Companies On Site*". Accessed March 10, 2021.

Importance of CentrePort Canada

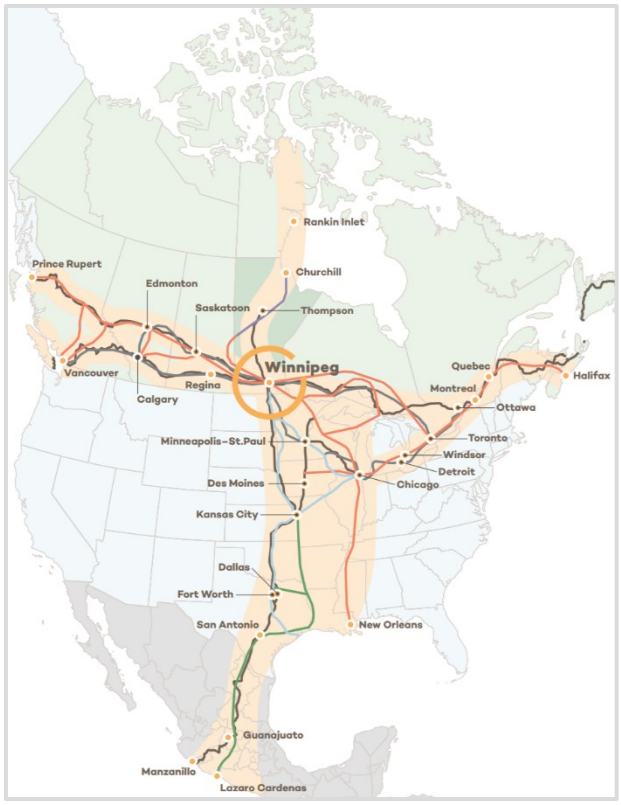
A significant benefit of providing services to the Airport Area West is that the extension of municipal services will enable the development of the southern portion of CentrePort Canada. Without municipal servicing to this area, only the northern portion of CentrePort Canada in the R.M. of Rosser will continue to receive municipal water and wastewater services that will facilitate further development.

CentrePort Canada's location near tri-model transportation networks in the centre of North America and designation as a foreign trade zone grants the area strategic benefits that may be of value to export or transportation-orientated industries.

Maranchuk and Regehr (2015) highlight some of the major aspects that provide value to businesses wishing to locate within CentrePort Canada including: [2]

1. Proximity to transportation and logistics service provides which enable transloading between modes (rail, air, and highway).
2. Access to Foreign Trade Zone (FTZ) benefits which may include duty deferral, sales tax relief, and customs bonded warehouses.
3. Geographically located at the nexus of North American trade corridors including northern (Port of Churchill), eastern (ports in Thunder Bay, Montreal, and Halifax), southern (United States and Mexico), and western (ports in Vancouver and Prince Rupert) trade corridors.
4. Air access to James Armstrong Richardson International Airport which has the advantage of having a later next-day parcel shipping deadline of 7:00 p.m. whereas the deadline is 4:00 p.m. or earlier in most other major cities in North America.

Map 3: CentrePort Canada Access to North American Markets



Map Source: CentrePort Canada Inc.

The geographical location and access to major tri-modal service providers and infrastructure provide significant benefits to businesses who rely on such services. These benefits help provide a business case to the municipality to extend services to the area so businesses can begin to take advantage of the unique benefits located specifically within CentrePort Canada.

[2] Maranchuk, K. and Regeher, J. (2015). *Highway and Rail Network Planning and Design for Inland Ports.* Paper presented at the 2015 Conference of the Transportation Association of Canada, Charlottetown, PEI.

Availability of Serviced Industrial Land in Winnipeg

A key driver in the consideration of servicing the Airport Area West region is the lack of existing serviced and vacant industrial land within the City of Winnipeg. According to the City of Winnipeg Employment Commercial Lands Study, in 2018 there were only 591 acres of serviced vacant industrial land available in Winnipeg, and in total only 14 per cent of industrial land in Winnipeg was vacant.

Given this limited availability of land for industrial and manufacturing purposes within Winnipeg, a growing labour force along with growing demand from businesses for industrial land will necessitate the eventual need for additional employment lands; the Airport Area West and CentrePort Canada area represents a key location for such an expansion.

Previous Economic Impact Assessments of CentrePort Canada

As a part of the CentrePort Canada inland port initiative, several analyses have been undertaken to estimate the economic impact the inland port would have on Winnipeg and Manitoba's economy.

A report done by the Manitoba Bureau of Statistics uses an input-output model to estimate the impact of construction in a full build-out scenario of the CentrePort lands on several macroeconomic indicators. The report concludes that a full build-out of the CentrePort lands would result in $1.26 billion worth of construction, infrastructure, and soft cost expenditures, resulting in a net impact to Manitoba's GDP of $954 million, with $662 million of that being attributed to labour income resulting in 11,700 person years of employment, $140 million in provincial taxes and $155 million in federal taxes collected.

In an analysis prepared by the Winnipeg Airport Lands Corporation (WALC), the findings indicate that once fully developed, the CentrePort South would provide approximately 1,100 net acres of industrial development over 50 years which would generate assessment values worth $1.73 billion to the City of Winnipeg. It should be noted that based on 2020 mill rates and 65 per cent portioning (as is typical for commercial and industrial developments), $1.73 billion in assessment values would yield approximately $14.5 million in additional annual municipal property tax revenue.

Finally, in a presentation prepared by key stakeholders involved in the CentrePort Canada development, the authors estimate that a fully developed CentrePort South would generate 17,600 permanent jobs post-construction and add $22 million annually to the City of Winnipeg's municipal property tax revenues.

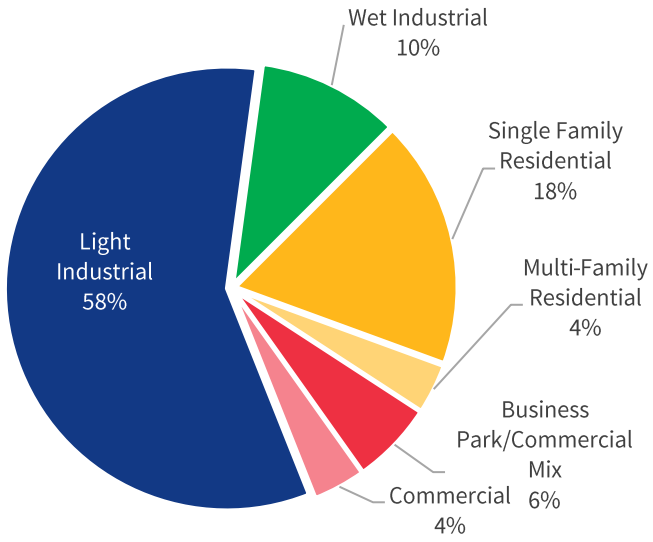
Section II: Airport Area West Development Overview

Development Absorption Rates and Land Use

To estimate both the net present value of servicing the Airport Area West region and the economic impact, the 50-year development phasing schedule defined by KGS Group from their *AAW Regional Water and Wastewater Servicing Preliminary Engineering - Final Report* is used. For a map of the area shadow plan, please see Appendix F.

This report assumes that the initial phase of infrastructure is in-service by 2023 and development begins in that year.

Figure 1: Airport Area Land Use Distribution (1,860 Net Acres Total)



In total there are 1,860 net acres available for development, with over half dedicated to light industrial uses. The distribution of land use is shown in figure 1. Below, table 1 contains the assumed annual net acreage absorption rates by the development type.

Table 1: Estimated Annual Net Acres Absorption Rates in AAW Once Serviced [3]

Land use	Development Phase						
	1A 1-5 Years	1B 6-10 Years	1C 11-15 Years	1D 16-20 Years	2A 21-30 Years	2B 31-40 Years	2C 41-50 Years
Single Family Residential	15.02	18.83	16.13	17.25	*N/A – Fully Developed*		
Multi-Family Residential	2.47	3.16	3.81	3.95	*N/A – Fully Developed*		
Business Park/Commercial Mix	5.57	5.57	5.57	5.57	*N/A – Fully Developed*		
Commercial	2.50	2.50	2.50	2.50	0.69	0.69	0.69
Light Industrial	31.04	31.04	31.04	31.04	15.37	15.37	15.37
Wet Industrial	1.71	1.71	1.71	1.71	5.28	5.28	5.28
Total Annual Absorption Rate	**58.30**	**62.80**	**60.74**	**62.01**	**21.34**	**21.34**	**21.34**

Source: Adapted from KGS Group *Airport Area West Regional Water and Wastewater Servicing Preliminary Engineering - Final Report*

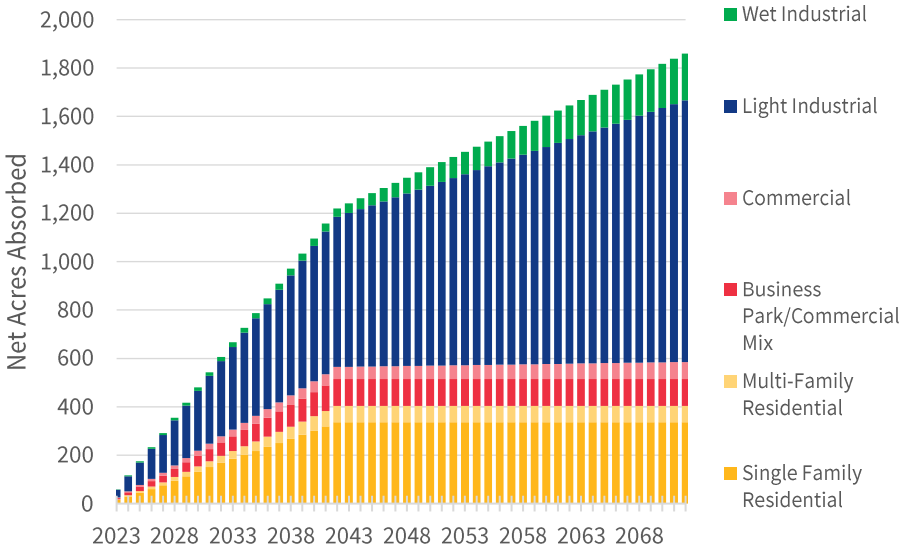
The total amount of net acres absorbed by land use and year under the phasing schedule described by KGS is illustrated in figure 2 on the following page. However, it should be emphasized that the phasing put forth by KGS in the *Airport Area West Regional Water and Wastewater Servicing Preliminary*

[3] It should be noted that for the purposes of this report, land absorption is defined as vacant or industrial land that has been converted to a more intensive and productive use, and contains new structures, housing, or employment space.

Engineering – Final Report is strictly conceptual and actual development may differ from this schedule.

The above absorption rates suggest that residential lands will be absorbed at approximately 20 net acres per year for 20 years and then be completely absorbed, while employment lands will be absorbed at roughly 41 net acres per year for the first twenty years, then decrease to about 22 net acres per year for last 30 years of development until the entire area reaches full build-out.

Figure 2: AAW Total Net Acres Absorbed by Land Use
(50-Year Timeframe)



To put these absorption rates for the employment lands into context, the 2018 City of Winnipeg Employment and Commercial Lands Study produced by Watson & Associates Economists indicated the following:

- Analysis shows that average employment land absorption in the City of Winnipeg averaged 34.5 acres per year from 2011 to 2016.
- Land absorption in the entire Manitoba Capital Region averaged 101 net acres per year from 2011 to 2016.
- Total land absorption on employment lands in the City of Winnipeg is expected to average 67 net acres per year from 2017 to 2035 based on projected employment growth and space needs.

The development phasing schedule from KGS is used to form three build-out scenarios due to the significant amount of uncertainty as to how the area will develop over the next fifty years. While infrastructure costs are assumed to be the same across each scenario, incremental operating costs and revenue streams will vary depending on how quickly the area develops and the type of development that occurs.

Development Scenarios

Three scenarios are examined to provide a range of possible outcomes over the next several decades since the exact distribution of land use, absorption rates, and assessment values are unknown. In each of these three scenarios, two variables are adjusted: the speed at which the area develops and

the type of development that occurs on the land absorbed. Please note that the timing of capital and its costs are assumed to be constant across all scenarios. The three build-out scenarios are as follows:

Scenario 1 – Low Potential

- **Build-out Timeline:** This scenario assumes that annual land absorption rates are reduced by 25 per cent from KGS' original phasing, resulting in full build-out only being achieved 74 years after initial servicing begins, extending the development timeline by 24 years.
- **Assessment Values:** This scenario assumes that the type of development that occurs reflects land uses that occur on parcels valued in the 25th percentile or lower in existing industrial areas in Winnipeg.
- **Development Examples[4]:** Grain elevators, storage compounds, scrap and salvage yards, industrial developments that take up significant open space (e.g., large parking lots or vacant land), gas stations, and small Class C office space.

Scenario 2 – Average Potential (Recommended Scenario)

- **Build-out Timeline:** This scenario assumes that annual land absorption rates follow the phasing schedule provided by KGS Group as presented in table 1 in section II. **This is the recommended scenario to use for financial planning purposes.**
- **Assessment Values:** This scenario assumes that the type of development that occurs reflects land uses that occur on parcels valued around the 50th percentile (± 25%) of existing industrial areas in Winnipeg.
- **Development Examples[4]:** Suburban business parks, metal fabrication facilities, iron works, beverage bottling facilities, clothing production, food production, strip malls, restaurants, vehicle dealerships, medium-sized multi-tenant industrial office buildings, and Class B office space.

Scenario 3 – High Potential

- **Build-out Timeline:** This scenario assumes that annual land absorption rates follow the phasing schedule provided by KGS Group as presented in table 1 in section II. Based on the current proposed phasing of water and wastewater infrastructure, accelerated land absorption rates beyond KGS' phasing is not possible. An accelerated development timeline would require altering the construction timeline of water and wastewater infrastructure, potentially altering the class 3 cost estimate.
- **Assessment Values:** This scenario assumes that the type of development that occurs reflects land uses that occur on parcels valued in the 75th percentile or higher of existing industrial areas in Winnipeg.
- **Development Examples[4]:** Food product suppliers, construction material distributors, flour mills, cold storage facilities, fertilizer production and distributors, specialized manufacturing, beverage production, dairy production, bakeries, banks, hotels, retail outlets, and large multi-tenant office buildings.

[4] Examples of development that may occur in each scenario are gathered from examining a random sample of existing developed parcels within the City of Winnipeg's general industrial/manufacturing areas, based off the parcel's percentile ranking on total assessment value per acre and the business type located on the parcel. Development examples should only be considered illustrative, as there may be crossover between assessment value categories. Further, development examples are not limited only to the examples provided and may span a variety of land uses and business types.

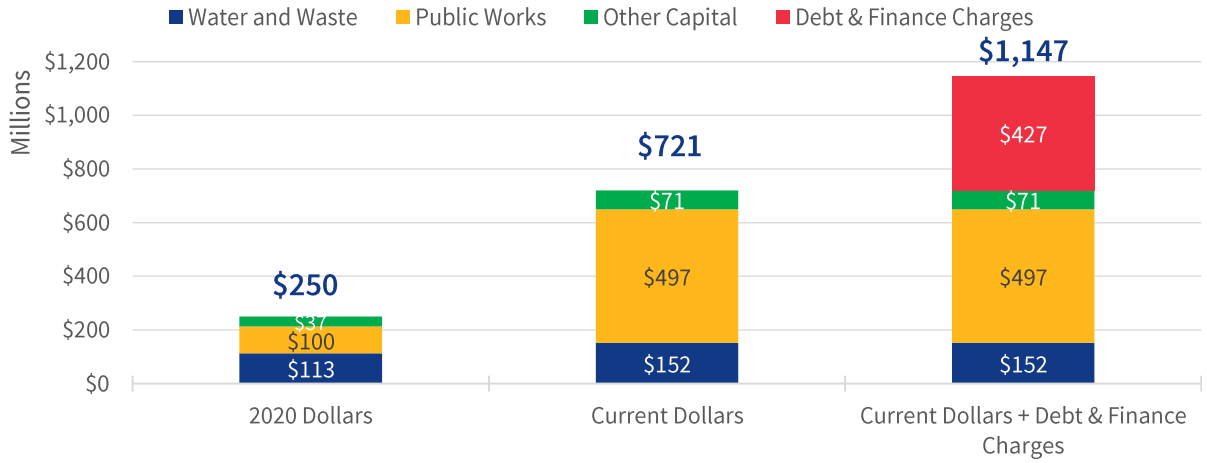
Airport Area West Municipal Capital Costs

To accommodate a full build-out of the Airport Area West, the total estimated cost of providing municipal services to the area (water, wastewater, road, fire paramedic, community services, parks, and transit infrastructure) is $250 million in 2020 dollars. The table 2 below provides a breakdown of the current cost estimates. All directly related capital costs are assumed to be financed 50% through debt and 50% through cash payments at current interest and sinking fund rates based on 30-year external debt issuance.

Currently it is assumed that a portion of the additional public works infrastructure (e.g., roads and sidewalks) needed in the area will be paid for by private developers as per development agreements. As such, the City of Winnipeg would only be responsible for the lifecycle maintenance and replacement cost of that infrastructure, along with three road network grade separations several decades away. However, the final cost and timing of these three road network grade separations is currently uncertain and as such, current best estimates are used on the understanding that timing and financial impact of these three projects could look different in the future when compared to the assumptions used in this report.

As many of these capital projects are costed in 2020 dollars but are only required in future years, figure 3 below shows how costs change once construction inflation is factored in, which is assumed to average 3 per cent annually, along with debt and finance charges for portions of projects that are financed. In summary, capital costs in 2020 dollars are estimated to be $250 million, but once construction inflation is accounted for, costs total $721 million in current dollars excluding debt and finance charges. Total capital costs escalate to $1.1 billion over the next ninety years once estimated debt and finance charges are included.

Figure 3: Airport Area West Capital Costs



Road network lifecycle maintenance, snow removal and ice control, roadway reactive maintenance, city beautification along roadways, water and sewage treatment costs, and new water and waste infrastructure operating costs are also accounted for in this report but are not included in the capital cost estimates provided in table 2.

Finally, the impact of $40 million in total funding from senior levels of government to help offset the cost of the first phase of the Water and Wastewater infrastructure is examined in Appendix B.

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**

Notes:

* Represents estimated cost to the City of Winnipeg net of funding from other levels of government (where applicable).
† Directly Related Capital costs represent capital costs that must be incurred to enable or facilitate development in the Airport Area West and meet current level of service standards. Without incurring these costs, development in the Airport Area West region may not proceed and/or level of service in the area may be below current standards. Indirectly Related Offsite Capital Costs represent the Airport Area West's share of capital costs for capital projects that are primarily offsite and not necessarily induced by the Airport Area West development but will still be used by residents and/or businesses in the Airport Area West. Currently there is uncertainty in estimating the indirect capital costs incurred by the AAW, so the methodology and estimates used should be considered unique to this analysis and may not be applicable to other situations.
‡ This analysis assumes all directly related capital costs are funded 50% with debt and 50% with cash.
§ Class 3 Cost Estimate
‖ Class 5 Cost Estimate
¶ This analysis treats all indirectly related capital costs as a one-time cash payment.

Airport Area West Municipal Servicing Revenues

After providing municipal services to land, the City of Winnipeg will begin to accrue revenue from property tax, business tax, frontage levies, and water and sewer utility fees.

As the exact nature of businesses that will locate on the land is unknown and given the City of Winnipeg's Small Business Tax Credit (SBTC), business tax revenues are not included in this analysis.

The following figures provide a more detailed breakdown on the sources of municipal revenue at 2020 tax and utility rates. Figure 4 shows the estimated annual consumption of water, and therefore production of wastewater, over a 50-year timeframe, and figure 5 below shows the estimated in-year municipal revenue that would be generated in the Airport Area West Region after it becomes serviced in 2023 in the average potential scenario.[5]

It is estimated that once fully built out, the Airport Area West region would generate:

- $24.6 million in municipal property tax revenue
- $2.4 million in frontage levy
- $11.9 million in water utility revenue [6]
- $17.1 million in sewer utility revenue

This adds up to a total of $56 million in municipal revenues at 2020 tax and utility rates.

Figure 4: AAW Estimated Water Demand
(Annual Total, Cubic Metres)

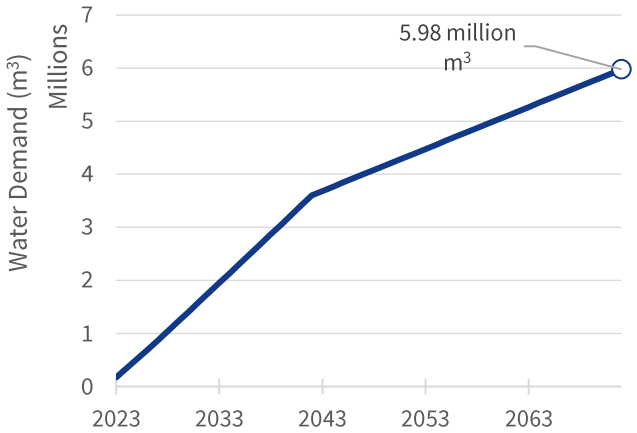
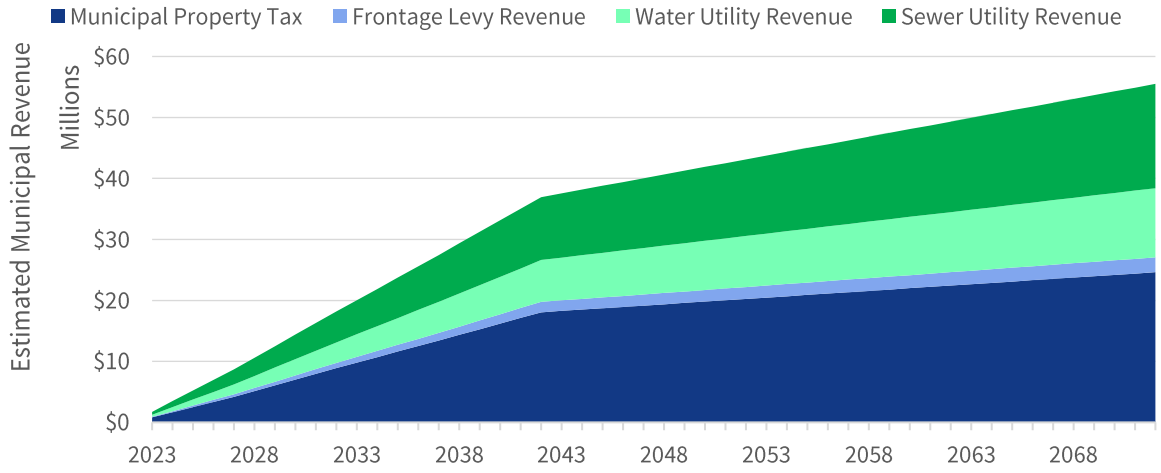


Figure 5: Airport Area West In-Year Revenues
(At 2020 Tax and Utility Rates)



[5] It is assumed that water consumption is equal to wastewater production in this report.
[6] Water utility revenue includes revenue from daily basic charges for city-owned meters.

Figure 6: Cumulative Costs versus Revenues, 50-Year View
(Current Dollars, Average Potential)

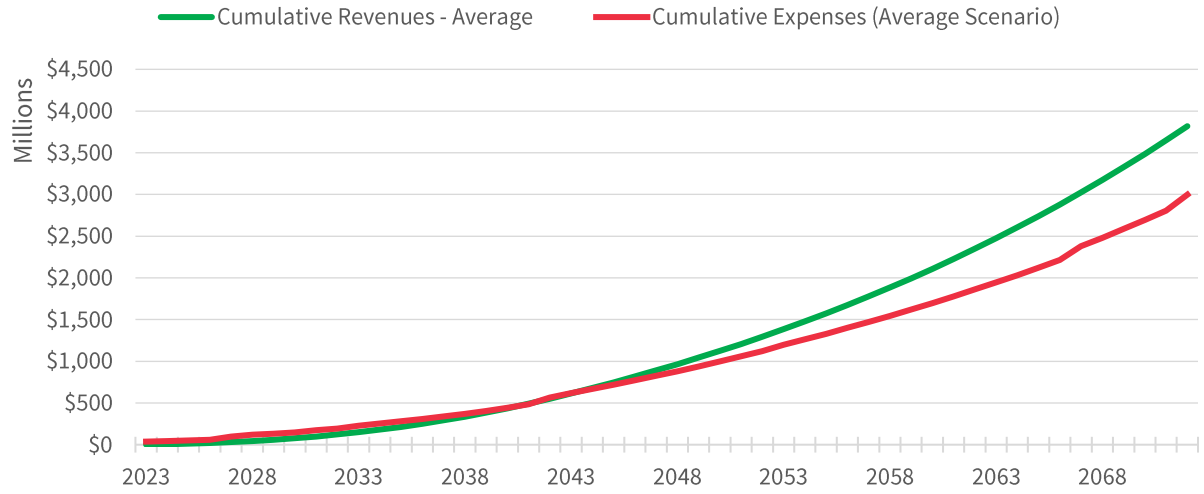


Figure 6 above shows the forecasted cumulative amount of revenue (property tax, frontage levy, and utility fees) and expenditures (directly related capital and associated operating, indirect offsite and tax-supported operating costs) that is estimated to occur over a 50-year timeframe in the Airport Area West under an average potential build-out scenario. For forecast assumptions, please see Appendix D.

Figures 7 and 8 show the sources of municipal tax revenue (at 2020 mill rates) and water demand by land use at full build-out.

Figure 7: Property Tax by Source

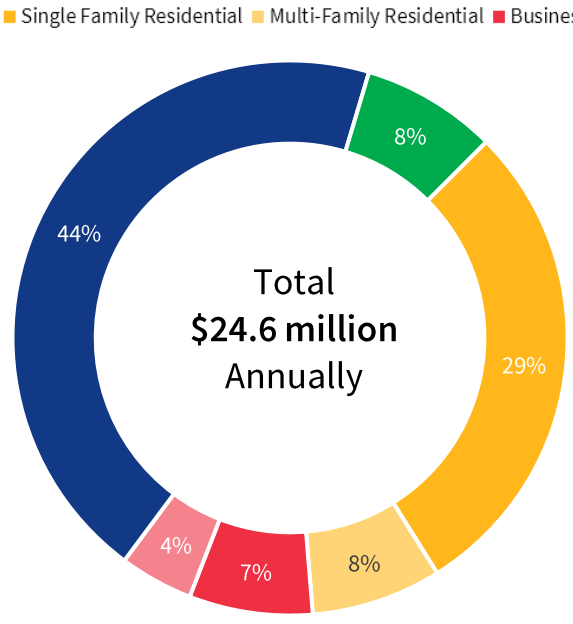
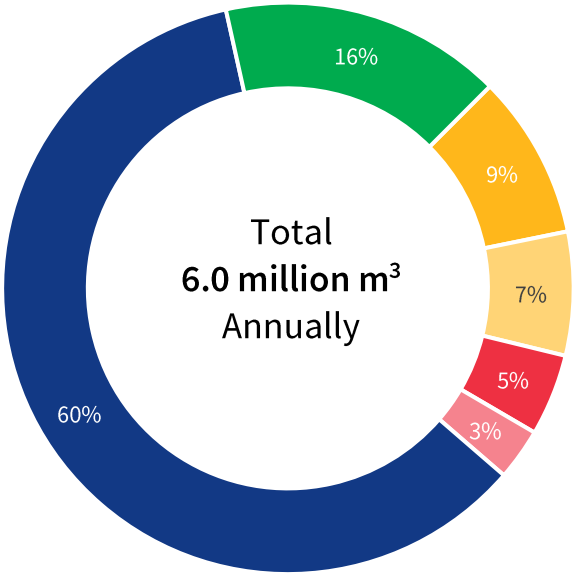


Figure 8: Water Demand by Source



Section III: Airport Area West Development Risks

There are a variety of risks associated with developing Airport Area West which have the potential to reduce the rate at which the land is developed once it has become serviced. Six known risks from an economic development standpoint are identified:

1. The R.M. of Rosser currently has a lower mill rate, and unlike the City of Winnipeg has no business tax, potentially acting as an incentive for commercial and industrial development to occur in Rosser before Winnipeg.
2. The City of Winnipeg's biosolids treatment capacity at the North End Sewage Treatment plant is limited; the ability to develop the Airport Area West region is at risk until biosolids facilities upgrades are complete.
3. The City of Winnipeg has a service sharing agreement with the R.M. of Rosser which allows Rosser to utilize Winnipeg's wastewater treatment and biosolids capacity.
4. The proposed sewer force main required to service the Airport Area West runs north and east through the R.M. of Rosser to connect with the Inkster Interceptor Sewer. Flows from Rosser also connect to the Inkster Interceptor Sewer and may limit available interceptor capacity for Airport Area West.
5. Shallow bedrock in the area may increase construction costs for businesses.
6. Transport Canada regulations may limit industrial development on the west side of airport.

The following sections provide further context on these risks.

Winnipeg's Municipal Tax Competitiveness with the R.M. of Rosser

When considering the pace of development that may occur once the Airport Area West becomes serviced, it's important to highlight the differences in tax rates between the City of Winnipeg and the neighboring Rural Municipality of Rosser as CentrePort Canada spans both jurisdictions.

In 2020, the R.M. of Rosser's mill rate was 8.666 whereas the City of Winnipeg's was 12.861.[7] For an average industrial parcel assessed at $2.8 million, their annual municipal property tax bill would be approximately $15,700 in Rosser and $23,400 in Winnipeg. This $7,700 difference, or 48 per cent higher municipal property tax rate in Winnipeg could put the City at a tax competitiveness disadvantage, and industrial or commercial developments looking to locate specifically in CentrePort Canada may opt to locate in the lower-tax jurisdiction, provided that the required land and services are available to them.

Further, the City of Winnipeg also has a business tax which is not present in the R.M. of Rosser. In 2020, the City of Winnipeg's business tax was 4.84 per cent of a businesses annual rental value (ARV). It should be noted that there is a threshold for the small business tax credit, and in 2021 this means that businesses with an ARV of $44,200 or less (approximately 55 per cent of all businesses in Winnipeg) will receive an offsetting credit equal to their full business taxes for the year. Business tax rates in Winnipeg have been steadily reduced from 9.75 per cent in 2002 to 4.84 per cent in 2020 and 2021.

[7] Source: Rural Municipality of Rosser 2020 Financial Plan, page 8.

While the lower mill rate and absence of a business tax may offset some costs to businesses who locate in Rosser making Winnipeg less competitive in this regard, there also exist benefits for businesses locating within Winnipeg's municipal boundary. In particular, commercial property insurance is likely cheaper in Winnipeg due to fire protection coverage from the Winnipeg Fire Paramedic Service and access to public transit may lower transportation costs for employees.

Biosolids Treatment Capacity and Service Sharing Agreements

Another major risk to developing the Airport Area West, and future development in the City of Winnipeg in general, is that the biosolids treatment capacity at the North End Sewage Treatment Plant is nearing capacity. Currently it is estimated that there is approximately 90,000 people equivalent (five to nine years) of capacity remaining, and once capacity for biosolids treatment is reached, there is a risk of Environment Act License violations and significant delays for any new development within Winnipeg.[8]

Further, the City of Winnipeg has service sharing agreements with the Rural Municipalities of Rosser and West St. Paul, and a Memorandum of Understanding with the Rural Municipality of St. Andrews. These service sharing agreements enable these rural municipalities to utilize sewer services provided by the City of Winnipeg and take up a portion of the biosolids treatment capacity.

Under the development phasing schedule presented in section II above, it is estimated that after 50 years (at full-build-out), the Airport Area West will consume approximately 16.4 million litres of water per day, or 5.98 million cubic metres of water annually, and produce the equivalent amount of waste water that must be treated at the North End Sewage Treatment Plant.[9] Approximately 60 per cent of this amount will be generated by light industrial parcels and 16 per cent by wet industrial parcels.

Given this, a fully serviced and built-out Airport Area West alone would take up more treatment capacity at the North End plant than is available and therefore development is contingent on expanding the plant's capacity. Furthermore, a compounding factor is the service sharing agreement with the R.M. of Rosser. Any development that takes place in both the City of Winnipeg's and the R.M.'s portions of CentrePort Canada will take up wastewater capacity in the City of Winnipeg's system and flows from both Rosser and the Airport Area West will connect to the Inkster Interceptor Sewer, thereby potentially limiting the interceptor's overall capacity available to the Airport Area West.

In summary, numerous risks should be considered when contemplating providing services to the Airport Area West, and these risks may reduce or limit the speed at which the Airport Area West develops over the next fifty-plus years

[8] Source: *Biosolids Treatment Capacity for the City of Winnipeg Administrative Report,* Agenda for City of Winnipeg Council on December 17, 2020.

[9] Based on average water demand guidelines from the City of Winnipeg Water and Waste department and KGS calculations. This only includes water and wastewater from residential, commercial, and industrial development. It does not include other sources of wastewater infiltration (e.g., manhole infiltration or groundwater infiltration).

Shallow Bedrock in the Area

Complex ground conditions, including shallow bedrock, exist in the Airport Area West.[10] This may mean elevated construction costs for some businesses who wish to locate in the area, depending on their location, land use, and structure type. Higher construction costs may result in slower development.

Transport Canada Regulations on West Side of Airport

Winnipeg International Airport Zoning Regulations SOR/81-708 provide a historical allowance for an expansion of runway 13/31 beyond the airport's existing boundaries. These regulations allow for the runway to potentially expand from the current 8,700 feet to 15,200 feet in length.

These regulations mean that if the airport were to expand runway 13/31 to this length, it would allow for the expropriation without compensation of private adjacent development lands on the west side of the airport, between Sturgeon Road and the western limit of the airport and may also restrict the height of structures within vicinity.

These regulations are a risk to the development of the Airport Area West as they have the potential to reduce the amount of serviced industrial land. It is estimated that the zoning regulations may affect approximately 375 gross acres of developable land in the Airport Area West, which are currently identified as having industrial uses according to the shadow plan from the KGS Group *Airport Area West Regional Water and Wastewater Servicing Preliminary Engineering Design – Final Report*.

While this report assumes that the developable land subject to the zoning regulations will be developed as suggested in the KGS report, it is important to note that these financial and economic calculations may be reduced if some or all the 375 gross acres in question would be subject to significant height limitations or development restrictions.

[10] Source: KGS Group, *AAW Regional Water and Wastewater Servicing Preliminary Engineering - Final Report*, pg. 8.

Section IV: Net Present Value (NPV) Analysis

Net Present Value (NPV) analysis attempts to quantify the financial worth of cashflows that result from an investment and is expressed in present value dollars. In general, NPV analysis is used to determine if a stream of cash inflows from an investment is greater than the cost of the investment after factoring in a discount rate. A positive NPV at the end of the specified time suggests the investment will generate a return, whereas a negative NPV suggests a loss.[11]

Within the context of the municipality servicing land, NPV analysis can be used to contrast the future cashflows from property taxes, frontage levies, and utility fees to the cost of investing in infrastructure, maintaining it over the long term, and providing municipal services to the area. For this report, a fifty-year time horizon on revenues and expenses is used.

When considering the costs and revenues to the municipality that accrue over time in a new development, there are some aspects that remain uncertain over the fifty-year time horizon. While there may be some certainty for capital costs with a class 3 estimate, other financial aspects are less clear. Because of this, the NPV of the investment is analyzed across multiple scenarios. While this approach produces multiple results, it adds transparency to an uncertain process while illustrating under what conditions the investment may or may not be financially beneficial to the municipality.

The dots in the chart below show what costs and development potential are analyzed in each of the four NPV scenarios that follow on the pages below.

Net Present Value (NPV) Analysis Scenario	Costs Included			Development Potential		
	Directly Related Capital	Offsite Capital	Tax-Supported Operating Costs	Low Potential	Average Potential	High Potential
Offsite and Tax-Supported Operating Costs Included	●	●	●	●	●	●
Offsite and Tax-Supported Operating Costs Included, by Entity: Tax-Supported Operations	●	●	●		●	
Offsite and Tax-Supported Operating Costs Included, by Entity: Utility Operations	●	●	●		●	
Offsite and Tax-Supported Operating Costs Excluded	●			●	●	●

It should be noted that NPV analysis is most effective as a tool to analyze multiple potential investments which this report does not do. Further, NPV calculations are sensitive to the assumptions used. It is not possible to know the exact cash inflows and outflows several decades in the future, so reasonable assumptions are used for projections, but actual outcomes will differ from those anticipated in this report.

[11] For full details on the methodology and assumptions used for the NPV analysis in this report, please see Appendix D. All NPV calculations represent the net present value in 2023, the assumed start year of development.

NPV with Offsite and Tax-Supported Operating Costs Included

This section provides the NPV calculation that considers all currently known cost estimates associated with development in the Airport Area West region. The costs included in this section are:

Directly Related Capital Costs

- Costs that must be incurred to enable or facilitate development in the Airport Area West and meet current level of service standards. Without incurring these costs, development in the Airport Area West region may not proceed and/or level of service in the area may be below current standards.
- Operating costs associated with new capital, such as water and wastewater infrastructure operations and treatment, land drainage, snow removal, ice control, scheduled and reactive road maintenance, and city beautification along roadway are included.

Indirectly Related Offsite Capital Costs

- Costs related to infrastructure elsewhere in the City that is necessitated, in part, by growth occurring in Airport Area West. These costs are shown in table 2 in an earlier section, and further detail is provided in table 4 below.

Tax-supported Operating Costs

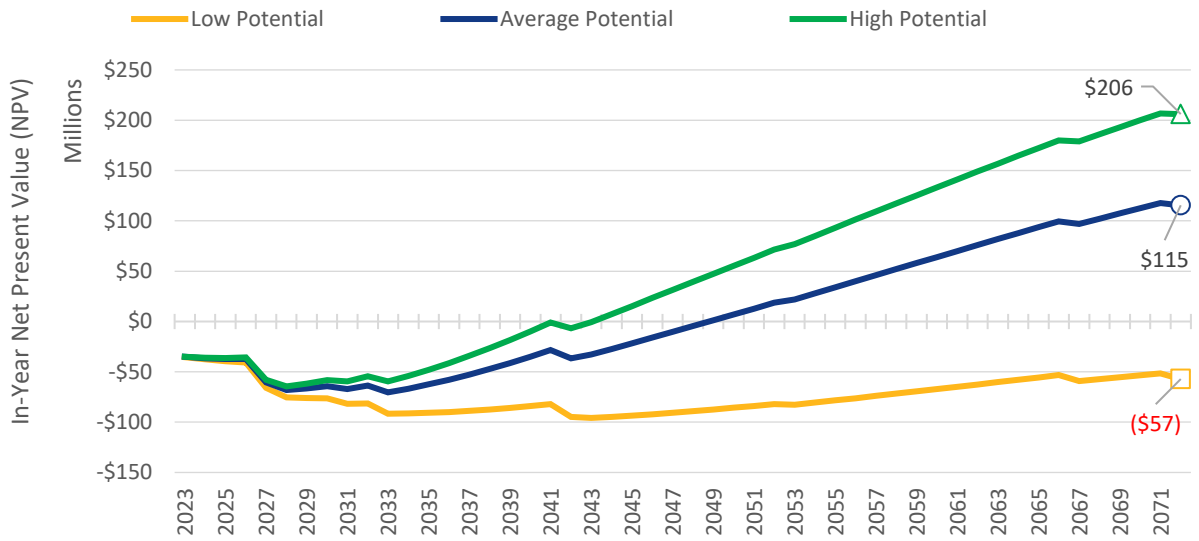
- Costs related to providing general municipal operating services to the area such as police, fire, recreation, planning, and administration.

The results of the NPV analysis are shown in table 3 below.

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	-$65.7	-$60.5	-$57.9
	Year 10	-$81.5	-$63.6	-$54.5
	Year 15	-$88.8	-$52.7	-$34.2
	Year 20	-$94.9	-$36.6	-$6.6
	Year 25	-$90.6	-$10.2	$31.5
	Year 50	-$57.2	$115.5	$206.1
	Years until NPV is Zero or Greater	62	27	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)	$2,725	$3,819	$4,214
	50-Year Total Surplus/Deficit (Current Dollars)	$67	$821	$1,217
	Return on Investment	3%	27%	41%

Figure 9: In-Year Net Present Value of Servicing Airport Area West
(50-Year View, Offsite and Tax-Supported Operating Costs Included)



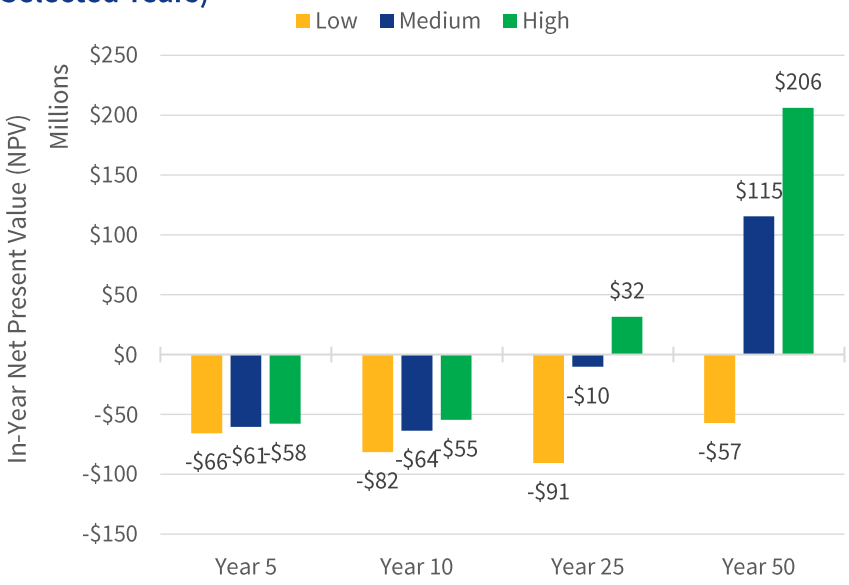
The results indicate that in an average potential development scenario, the break-even year is 27 years after development begins when all costs and revenues are considered.

If the industrial and commercial development has assessment values on the lower end, the present value of the investment remains negative during the entire fifty-year period and becomes positive only after 62 years.

Conversely, if the assessed value of development in the area is on the higher end, then the break-even year occurs 5 years sooner than in the average case, and the present value is $90.6 million higher by year 50.

Figures 9 and 10 illustrate how the net present value of investing in infrastructure and services to service the Airport Area West changes over time. Initially the NPV is negative as infrastructure must be built for development to begin, but over time revenues rise as vacant land becomes productive, assessment values rise, and water and wastewater fees are paid.

Figure 10: Net Present Value by Scenario Comparison
(Selected Years)



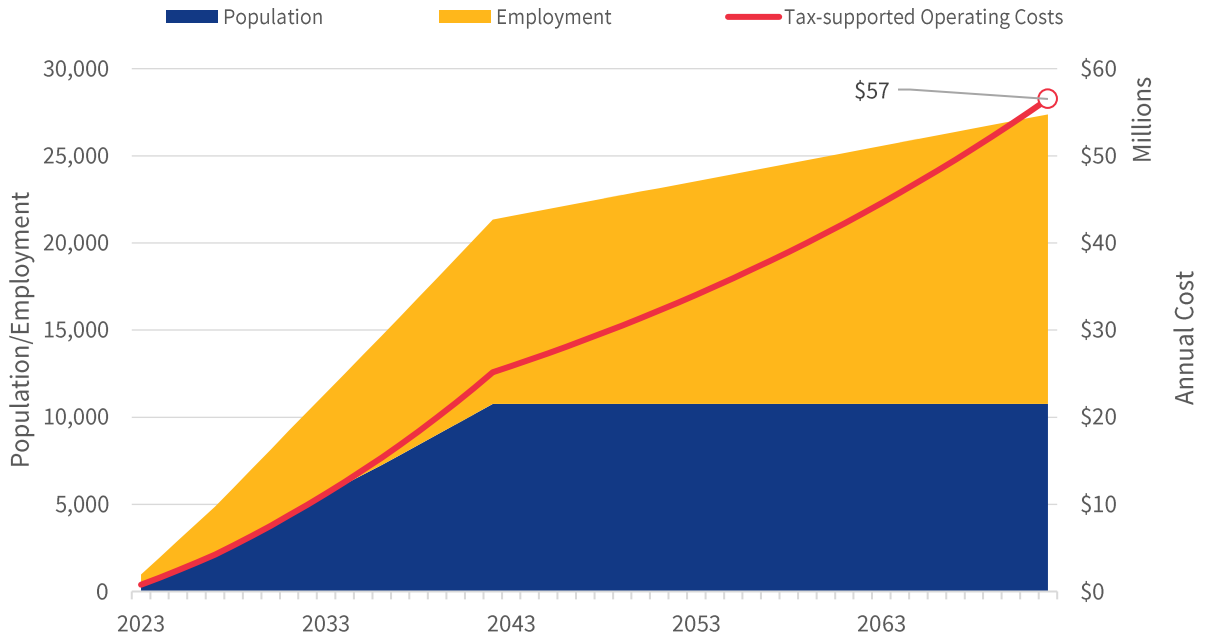
Estimating offsite costs requires anticipating the pressure that growth in population and employment in the Airport Area West will have on regional infrastructure such as external regional roads or wastewater treatment facilities. These estimates are displayed in table 4 to the right.

Table 4: Estimated Offsite Costs Attributed to Airport Area West
(2020 Dollars, Dollar Figures in Millions)

Project	Assumed Project Authorization Year	Estimated AAW Share of Cost [12]
NEWPCC Biosolids	2027	$15.6
Silver Avenue Expansion (Century/Route 90 to Sturgeon)	2031	$5.9
Chief Peguis Trail Extension (Main to Brookside)	2027	$8.1
Total Airport Area West Offsite Cost Estimate		**$29.6**

Estimating tax-supported operating costs involves forecasting the City of Winnipeg's tax-supported operating budget, population, and employment figures fifty years into the future, and then allocating relevant tax-supported budget items on a per-capita basis to both population and employment. These per-capita values must then be allocated to population and employment forecasts specific to the Airport Area West.

Figure 11: AAW Annual Operating Costs
(Tax-Supported, Current Dollars)



[12] Assumes the City of Winnipeg is responsible for 1/3rd of each project's total estimated cost, and the AAW's share of this 1/3rd cost is based on current usage estimates driven by AAW population and employment.

To do this, tax-supported operating budget forecasts are built upon adopted and forecasted values presented in the City of Winnipeg's 2021 Tax Supported Operating Budget, and out-year departmental expenditures are allowed to grow at the rate of forecasted population growth plus inflation, which is the maximum target defined in item six within the City of Winnipeg's current Financial Management Plan.[13]

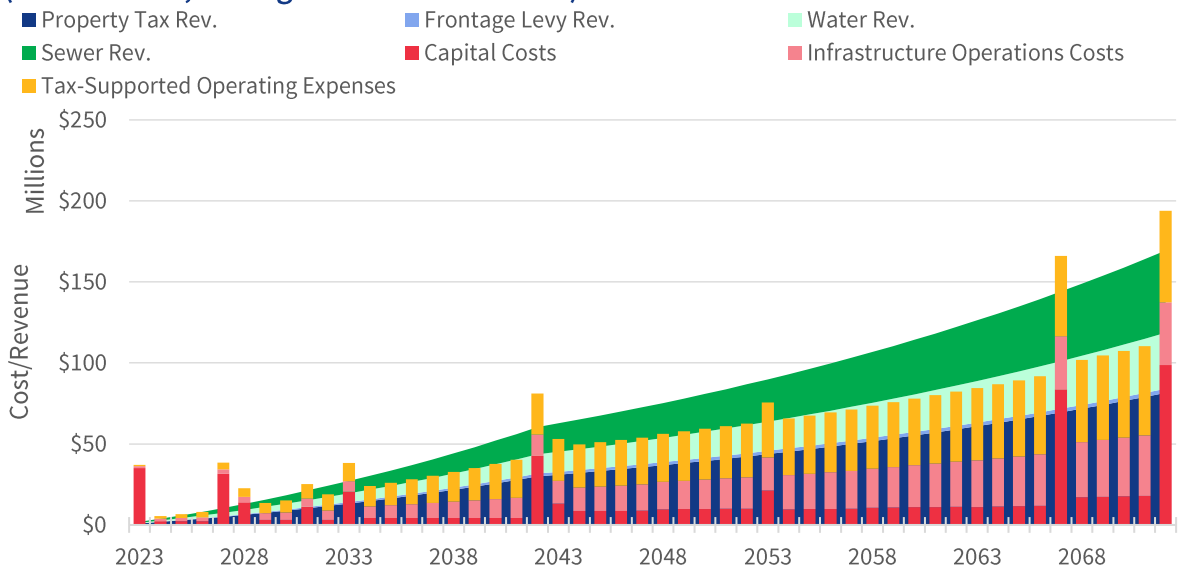
Population and employment figures specific to the Airport Area West are estimated based on the KGS water and wastewater phasing plan and are shown in figure 11 above, along with the estimated annual tax-supported operating cost associated with providing tax-supported municipal services to the area.

It is estimated that at full build-out by 2072, the Airport Area West will require approximately $57 million (current dollars) in tax-supported operating expenditures to provide municipal services such police, fire, recreation, planning, and administration to approximately 10,800 people and 16,600 jobs located in the area.

Figure 12 below provides a schedule of the municipal costs and revenues associated with the Airport Area West development in current dollars. While general costs continue to grow into the future due to inflation and road renewal, revenues also continue to escalate on the assumptions that property tax and utility rates will grow at the rates defined in Appendix D.

Figure 12: In-Year Costs and Revenues (Current Dollars)

(50-Year View, Average Potential Scenario)



It should be noted that the Winnipeg Police Service has indicated there may be additional expenditures beyond per-capita costs associated with the Airport Area West development. These costs and their implications on the NPV analysis are discussed in Appendix C.

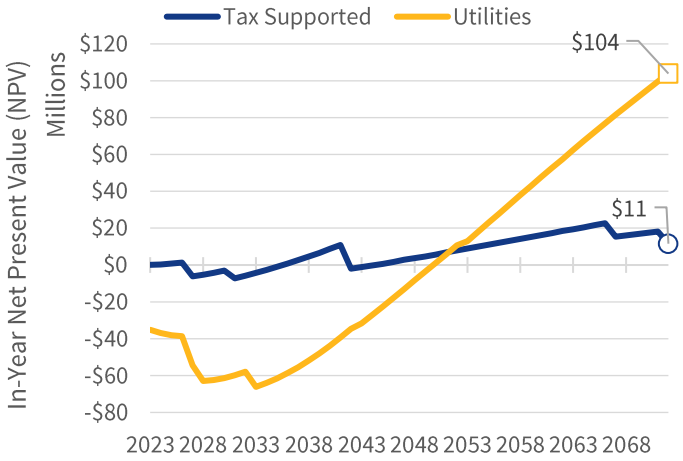
[13] Inflation is assumed to be 2% annually. Population growth rates vary by year based on 2016 forecast. All tax-supported operational expenditures, less roadway snow removal and ice control, are included with community service expenditures being attributed to population only. Does not include tax-supported capital-related expenditures.

NPV with Offsite and Tax-Supported Operating Costs Included, by Entity

The above analysis indicates that the NPV to the municipality is $115 million after 50 years in an average potential scenario. However, that represents the consolidated value between two entities: municipal tax-supported operations and utility operations (water and wastewater).

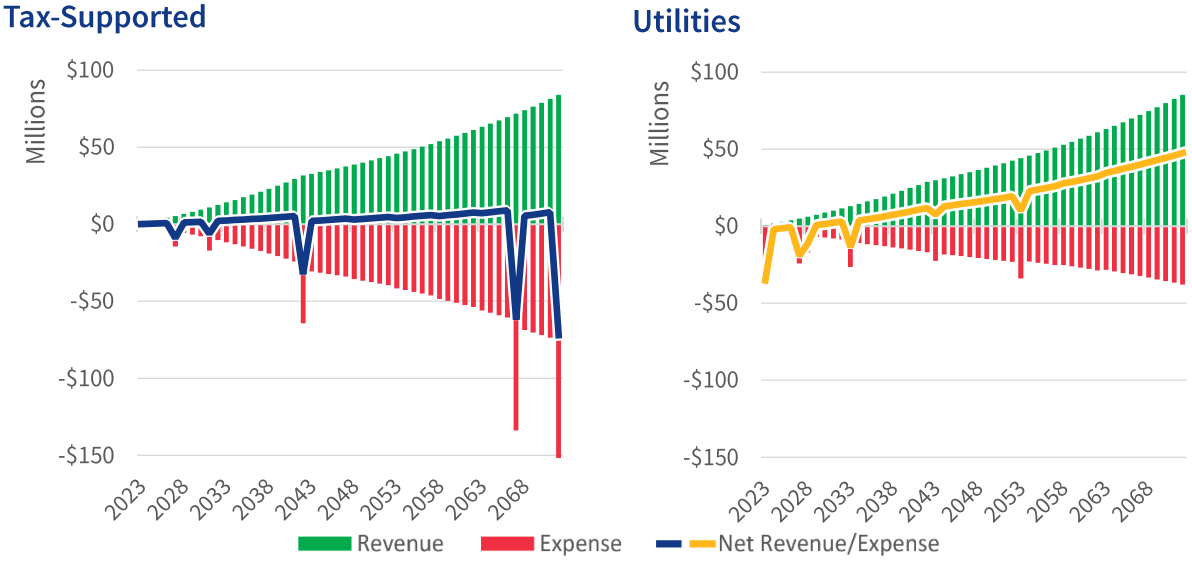
Figure 13 shows that when the analysis is separated between these two entities, the results suggest the value is unequal between them. For utility operations, the present value is significantly lower in early years compared to tax-supported operations due to the significant water and wastewater investment required for development to begin. However, the relatively low maintenance costs of utility infrastructure once in place means the NPV rises significantly after 2052 as the developed area continues to pay utility fees. The result is of the $115 million consolidated NPV by year fifty, $104 million is from utility operations.

Figure 13: In-Year NPV by Entity
(Average Potential Scenario, Offsite and Tax-Supported Operating Costs Included)



Conversely, the NPV on the tax-supported side only makes up roughly $12 million of the NPV by year fifty, and only deviates marginally from $0 in most years. This is due to the increasing cost of providing tax-supported services, road renewal, and grade separations as development in the area expands over time. The annual schedule of revenues and expenses to 2072 by entity are shown in figure 14

Figure 14: Airport Area West Municipal Revenue and Expense by Entity
(Current Dollars)



NPV with Offsite and Tax-Supported Operating Costs Excluded

This section provides the NPV calculation that only considers the cost of directly related capital for the Airport Area West. It excludes the offsite capital and tax-supported operating costs that were included in the previous NPV calculation. Separate scenarios are provided due to the current uncertainty in accurately determining offsite and tax-supported operating costs for a specific area over a fifty-year horizon. The results of this NPV analysis are presented in table 5 below.

Table 5: Net Present Value Analysis Summary
(Offsite and Tax-Supported Operating Costs Excluded; Dollar Figures in Millions)

Metric		Development Scenario by Potential		
		Low	Average (Suggested)	High
In-Year Net Present Value (NPV)	Year 1	-$34.9	-$34.3	-$34.1
	Year 5	-$33.6	-$25.7	-$23.1
	Year 10	-$23.9	$3.3	$12.4
	Year 15	-$2.2	$52.9	$71.4
	Year 20	$27.0	$116.1	$146.1
	Year 25	$70.1	$189.2	$231.0
	Year 50	$257.8	$485.9	$576.6
	Years until NPV is Zero or Greater	16	10	9
Return on Investment (ROI; current dollars)	50-Year Total Investment Cost (Current Dollars)	$1,394	$1,549	$1,549
	50-Year Total Investment Revenue (Current Dollars)	$2,725	$3,819	$4,214
	50-Year Total Surplus/Deficit (Current Dollars)	$1,330	$2,270	$2,666
	Return on Investment	95%	147%	172%

Figure 15: In-Year Net Present Value of Servicing Airport Area West
(50-Year View, Offsite and Tax-Supported Operating Costs Excluded)

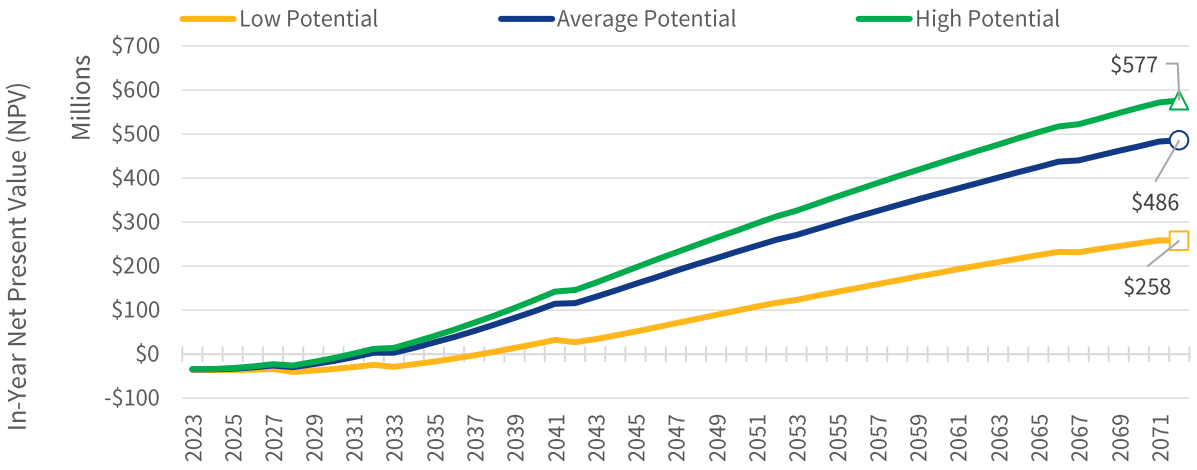
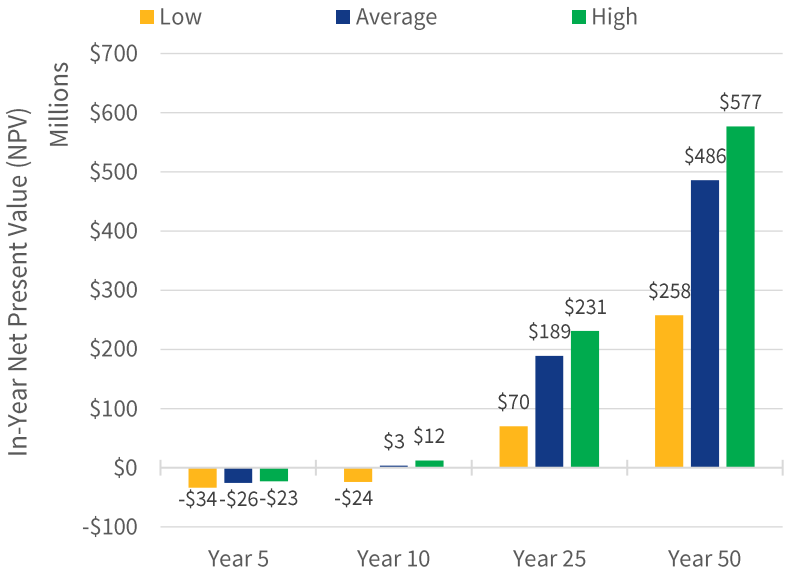


Figure 15 above shows how the NPV evolves over a 50-year timeframe. The further into the future, the higher the NPV. This is because cash inflows from property tax, frontage levies, and utility fees will rise as the area gets built out.

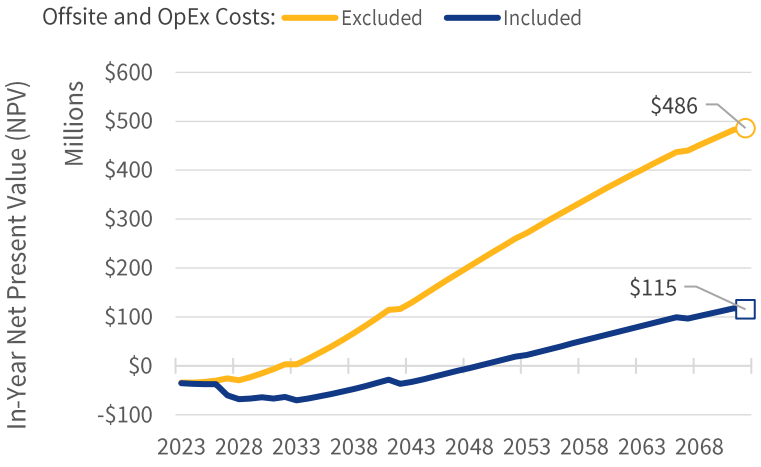
Across all three scenarios, the NPV of servicing the Airport Area West is negative for the first 8 years. This is due to the high capital cost of providing water and wastewater infrastructure to the area, combined with the fact that even once serviced, it will take time for the area to build-out and begin generating additional revenues. A comparison of the NPV at given years, by scenario, is provided in figure 16.

Figure 16: Net Present Value by Scenario Comparison
(Selected Years)



This NPV scenario only includes directly related capital costs and the operating costs associated with that new capital. While these represent a large portion of the costs associated with providing servicing to the region, it does not represent all costs. Costs not accounted for in this section include incremental tax-supported operating costs related to policing, fire, recreation, planning, and administration. These costs are discussed in the previous section.

Figure 17: NPV by Scenario Comparison
(50-Year View, Average Potential Scenario)

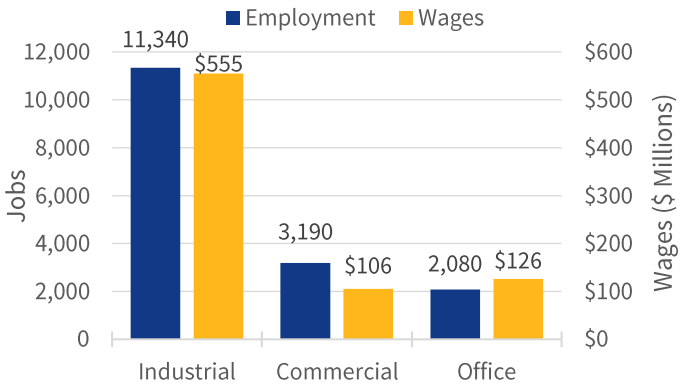


As expected, excluding offsite and tax-supported operating costs significantly increases the present value of the investment, with it increasing from $115 million to $486 million, or 323 per cent. However, this does not mean offsite and tax-supported operating costs *shouldn't* be included, but rather calculating those costs relies on fluid and high-level estimates. As such, scenarios with and without those costs are presented to provide upper and lower ranges for consideration.

Section V: Long-Term Economic Impact Analysis

Long-term economic impact analysis in the context of the Airport Area West region means understanding what impact servicing this land will have on the local economy. In particular, this means understanding the quantity and type of jobs that will locate there, the wages they will generate, the dwellings that will be needed to accommodate new workers, and the resulting government revenues from this economic activity.

Figure 18: Employment and Wages

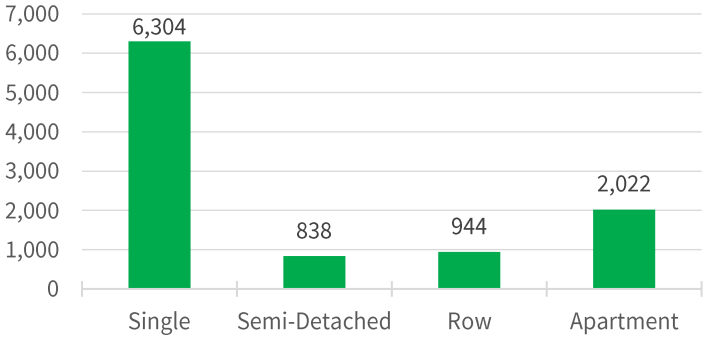


To quantify the long-term economic impacts of servicing land, an employment-based perspective is taken.[14] To summarize, once the municipality provides infrastructure and services to vacant land, businesses can then locate there. This, in turn, generates new employment which leads to new wages and demand for housing. New businesses pay corporate income tax, new business structures and housing add property taxes, and new wages add consumption and income tax.

These results assume that employment growth that occurs in the Airport Area West after it is serviced is net new to the regional economy and isn't simply a re-allocation of employment from one area to another within the metropolitan region. While this is a major assumption, it is difficult to estimate how much of the employment on non-residential lands would be relocation of existing businesses and their employees versus expansion or attraction of new businesses and new employees.

Using current employees per net acre figures, along with historical relationships between employment growth and housing demand, figures 18 and 19 show the estimated number of jobs and wages the fully developed non-residential portion of Airport Area West could accommodate, and the number of dwellings built to accommodate the additional employment.

Figure 19: Estimated Dwellings Required to House New Employees



In total, it is estimated that based on the current land use assumptions shown in figure 1, the Airport Area West could accommodate approximately 16,600 new jobs which would drive demand for 10,100 dwellings in Winnipeg.

[14] Long-term economic impacts do not include the short-term economic impacts to employment, GDP, and taxation that results from construction activity that will take place in the Airport Area West region during the build-out.

Based on the jobs accommodated on the land, the dwellings required to house employees and their families, and average wage data, government revenues resulting from a fully built out development can be estimated at 2020 tax rates. It should be noted that the figures below assume the provincial government has completely phased out education property taxes by the time the Airport Area West has been fully developed, as reaffirmed in the 2021 Manitoba Budget Address.[15] If this is not the case, then provincial revenues and their resulting share of total revenue would be higher than stated.

Figure 20 shows the estimated distribution of tax revenue to all three levels of government once the non-residential portion of the Airport Area West is fully built out, and figure 21 provides additional detail on the sources of those revenues.

Overall, at full build-out, the area is estimated to generate directly and indirectly $316 million annually in government revenues at 2020 tax rates, utility rates, and wages, with the City of Winnipeg receiving 25 per cent, or $80 million.[16]

Figure 20: Distribution of Government Revenue

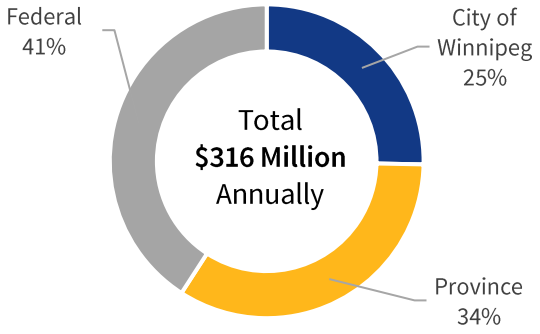
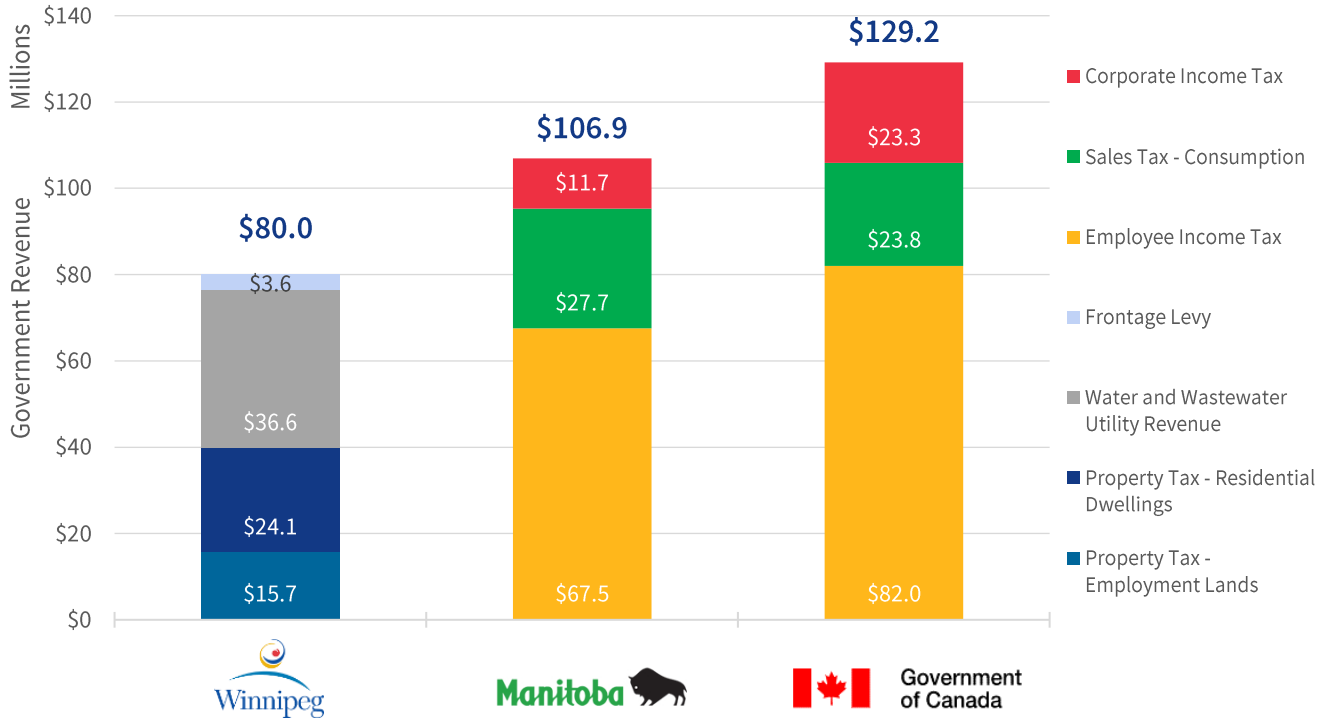


Figure 21: AAW Annual Tax Revenue Estimates by Level of Government
(At 2020 Wages, Prices, Tax Rates, and Full Build-Out)



[15] Source: Manitoba. (2021, April 7). *The 2021 Manitoba Budget Address.* Winnipeg: Government of Manitoba.
[16] For full details on the methodology and assumptions used to produce these estimates, please see Appendix E.

Section VI: Concluding Discussion

Significance of Net Present Value (NPV) Findings

The NPV analysis in section IV estimates that in an average potential buildout scenario (with indirect offsite capital and tax-supported operating costs included), the present value of servicing the Airport Area West over fifty years is $115.5 million to the municipality. Of this positive net present value, $11.6 million can be attributed to the property tax revenue and frontage levy that will be generated from the area over the fifty-year period and $103.9 million attributed to utility revenues. While these figures sound significant, in the absence of revenue analysis connected to other growth-related projects, it is important to contextualize their magnitude relative to other financial comparisons.

To compare against municipal revenues, at current growth rates the net present value of all municipal property tax is estimated to be $23.3 billion over the same fifty-year period, so the $11.6 million from AAW represents 0.05% of this amount.[17]

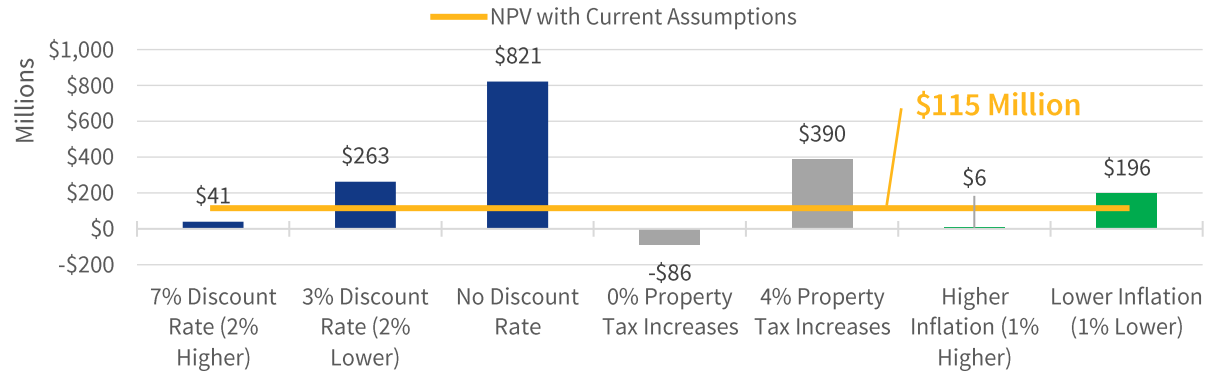
To compare against one of the largest municipal operating expenses – the police service – at current growth rates the net present value of all future police operating budget expenditures is estimated to be $8 billion over the same fifty-year period, so the $11.6 million from AAW represents 0.15% of this amount.[18]

These comparisons suggest that while the current NPV analysis indicates positive returns two to three decades from the project's beginning, the present value of incremental revenue on the city's overall budget is small compared to other major items and is insufficient to address the existing infrastructure deficit.

Sensitivity of Net Present Value (NPV) Assumptions

This report attempts to quantify costs and revenues that will occur over the next fifty years. Doing so requires making strong but hopefully reasonable assumptions about the future, but it is certain that the future will deviate from these assumptions.

Year 50 Average Potential NPV Under Different Assumptions



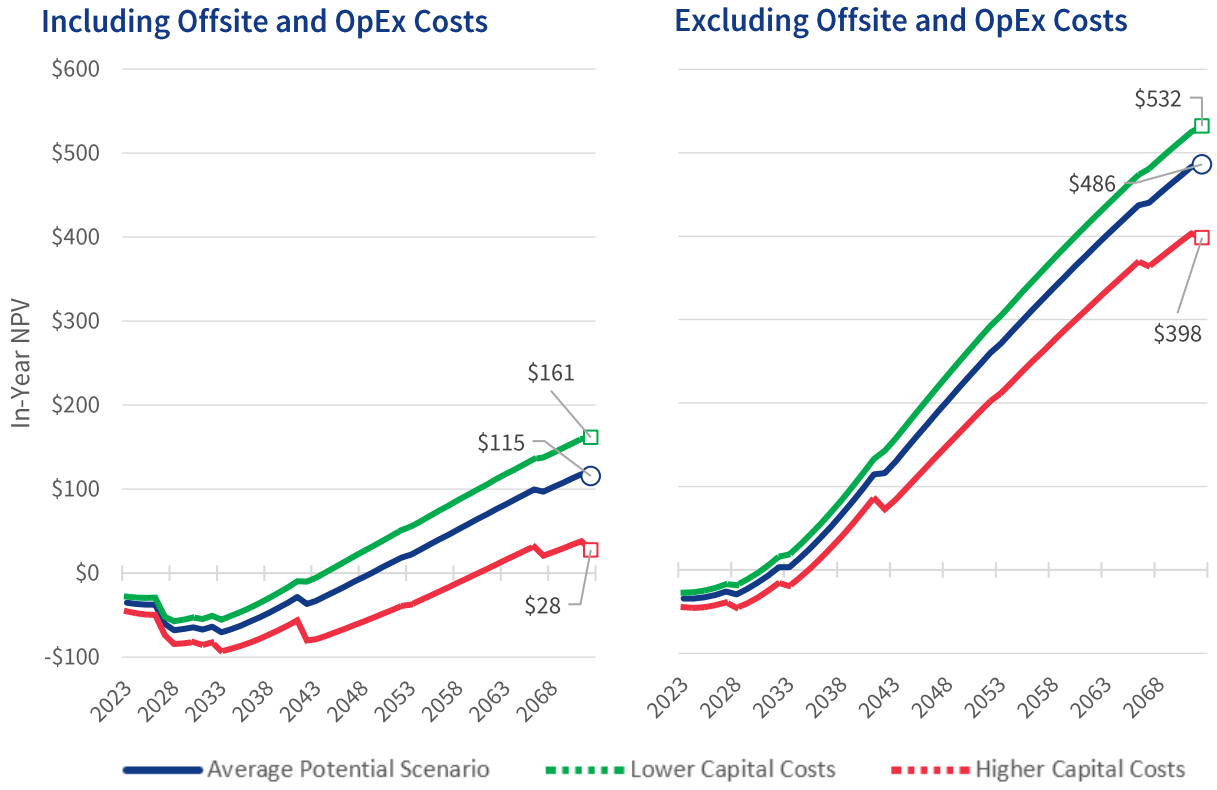
[17] Based on figures from the 2021 Adopted Operating and Capital Budget, Tax Supported Summary. Assumes 2.33% property tax increases, 1% natural property tax revenue growth, and 5% discount rate.
[18] Based on figures from the 2021 Adopted Operating and Capital Budget, Tax Supported Summary. Assumes 2% annual growth in police service operating expenditure and 5% discount rate.

To highlight how sensitive such a long-range NPV scenario is to any minor change in assumptions, the chart on the previous page shows how the average potential build-out scenario including indirect offsite capital and tax-supported operating cost NPV changes under different assumptions.

The NPV analysis is sensitive to many of the primary assumptions used and may become positive or negative depending on how these factors change over the next fifty years.

Capital Cost Estimate Impact on Net Present Value (NPV) Findings

The directly related capital costs that are required for the Airport Area West buildout outlined in table 2 are class 3 and class 5 cost estimates. This means that while these capital costs are estimated to be $250 million in 2020 dollars, the accuracy of the cost estimate means total capital costs could range from $159 million (-36%) to $421 million (68%). Given this range and the fact that it is made more significant when construction inflation is added in, the charts below illustrate how the NPV analysis changes if all projects come in at the higher or lower end of their cost estimate ranges.



The charts above indicate that the net present value of servicing the Airport Area West could be substantially reduced if all project costs are at the higher end of their cost estimate; if indirect offsite capital costs and tax-supported operating costs are included, the NPV falls from $115 million to $28 million, which is a reduction of 76 per cent. Conversely, if all projects come in at the lower end of their cost estimate, the NPV rises from $115 million to $161 million, representing a 40 per cent increase.

This indicates that the NPV of the investment is sensitive to the final cost of capital required to service the Airport Area West.

Does Growth Pay for Growth?

According to Hemson Consulting's *Review of Municipal Growth Financing Mechanisms* report for council consideration produced for the City of Winnipeg, the term "growth pays for growth" in the broadest sense means that "*over time as a community develops it is able to provide municipal services on a sustainable basis without the need to increase rates and taxes because of growth*".[19]

In their report, Hemson noted that in Winnipeg in general, growth did not pay for growth and instead the city has underinvested in "first-round" infrastructure to keep property tax rates low; if the City instead had decided to sustainably invest in infrastructure to match the pace and demand from growth, property tax rates in Winnipeg would have to be higher. Evidence of this underinvestment is indicated by the current $6.9 billion infrastructure deficit that is estimated for the 2018 to 2027 time period.[20]

With respect to this analysis, the NPV is positive by year 50 across most scenarios. Moreover, the analysis suggests that doing the project not only pays for itself over the long run, but also produces a marginal surplus that could potentially be used to fund other initiatives or developments in the City. To this end, the following three points should be considered:

1. **Estimated revenue "Surplus" from AAW is marginal:** In the average potential scenario where estimated indirect offsite and tax-supported operating costs are included, the net present value of the investment for tax-supported operations is $11.6 million after fifty years. While the in-year NPV fluctuates between negative and positive over that timeframe, on average this represents an annual surplus of $232,000 in present valued dollars. This amount is likely insufficient to significantly help address infrastructure or servicing issues in other regions of Winnipeg. Further, as shown in the sensitivity analysis, this amount can easily vary with any change in assumptions.
2. **Not all offsite costs from AAW's development are known and considered in this analysis:** As more information becomes known over the next fifty years, it could be the case that additional municipal assets must be added or expanded, and existing assets may depreciate at a faster rate as a result. These are not accounted for in this report because these effects are currently unknown.
3. **Not all growth is equal:** It *may* be the case that a largely industrial development in the north-west corner of Winnipeg does generate more revenue than incremental cost added. However, this does not mean the same can be said for all new developments. Whether or not a development generates more revenue than costs will depend on many factors such as final assessment values, on-site and off-site infrastructure and servicing requirements, and spillover effects to other regions of the city.

Therefore, caution should be applied when evaluating whether "growth pays for growth", both in general and in the case of the Airport Area West region.

[19] Source: Hemson Consulting Ltd. 2016. *Review of Municipal Growth Financing Mechanisms, City of Winnipeg, Report for Council Consideration.*
[20] Source: City of Winnipeg. 2018. *2018 State of Infrastructure Report.*

Analysis Uncertainties and Risks

The conclusion of this analysis is subject to a variety of risks, most of which depend on the assumptions used as documented in the following appendices. The most significant uncertainties and risks that would alter the conclusion of this report include deviations from assumptions on:

- The year development in Airport Area West begins
- Infrastructure, maintenance, and operating cost estimates
- Land use distribution
- Development assessment values and absorption rates
- General inflation and construction inflation
- Government tax policies and rates
- Utility rates
- Water consumption and wastewater production patterns
- Jobs per net acre figures

While every effort has been made to determine reasonable assumptions on what these values may take over the next fifty-plus years, it is likely that one or more of these assumptions will deviate from reality at some point in the future, ultimately altering the true net present value of servicing the area.

Both the net present value and long-term economic impact estimates provided in this report should be treated as general estimates only and never as absolutes. Therefore, because of these uncertainties and risks, sensitivity analysis is conducted and reported in an earlier section.

Analysis Limitations

In general, net present value (NPV) analysis is most useful when being used to contemplate and prioritize a variety of investment options. If there are multiple options for investing a fixed amount of capital, the option that yields the highest NPV is the one that will be selected.

In the present case of analyzing the NPV of the Airport Area West region, similar NPV calculations have not been conducted for any other growth-related projects being considered by the City of Winnipeg. Therefore, there may be projects or proposals that yield better financial results, but the outcomes of those projects are currently unknown. This limits the usefulness of the NPV analysis.

Finally, this analysis attempts to quantify the financial costs and revenues of a long-term infrastructure and land servicing project. The actual costs and revenues are unknown until they are realized. Readers should familiarize themselves with the assumptions used in the modelling for this report in the following appendices as any deviation from these assumptions could result in outcomes different from those projected.

Report Appendices

Appendix A: Methodology Peer Review and Stakeholder Feedback Summary

Methodology Peer Review

As a part of this analysis, the City of Winnipeg engaged a third-party consultant, Watson & Associates Economists Ltd., to conduct a peer review of the fiscal and economic framework and assumptions utilized by this report. This was done to ensure that the methods used in this report aligned with industry standards and best practices for similar types of analysis across Canada, and that the assumptions presented were fair and reasonable.

Overall, the peer review process indicated that much of the methodology is consistent with industry-wide standards. However, it also provided the following key suggestions for methodological improvements:

- Calculate and include daily basic charges from city-owned water meters.
- Adjust calculation method for average assessment parcels.
- Allow for revenue increases beyond current City Council policies.
- Adjust timing of non-utility and non-public works capital projects.
- Adjust methodology for attributing off-site capital costs to the Airport Area West.
- Account for non-tax and non-utility revenue sources (e.g., traffic enforcement revenue, community centre fees, etc.).
- Employ a lower discount rate in the Net Present Value (NPV) analysis.
- Adjust job density counts to better reflect industrial developments as opposed to city-wide averages that are currently employed.

Where feasible, the City of Winnipeg has incorporated this feedback into the analysis provided the adjustment aligned with institutional needs.

Stakeholder Feedback

Another component of the analysis involved soliciting the feedback from relevant stakeholders. In this process, feedback was solicited from CentrePort Canada Inc., Cushman & Wakefield Stevenson, and Economic Development Winnipeg. From this discussion, stakeholders provided feedback on several topics related to this fiscal impact analysis.

Below is a high-level summary of this feedback that should be taken into consideration when evaluating the assumptions used in this fiscal impact study:

Land Absorption Rate

- The absorption rate assumed in the City's fiscal analysis is conservative, and not necessarily reflective of the high rate of development observed in the R.M. of Rosser from 2018 onwards.
- Absorption rates observed in the Winnipeg Capital Region from 2011 to 2016 are lower than current rates.

- Stakeholders have indicated there is strong demand for serviced industrial land in the Winnipeg Capital Region, and the Airport Area West represents a key opportunity for the development of commercial and industrial employment lands.

Quality and Type of Development

- The quality of non-residential development that is anticipated to occur in the Airport Area West is expected to be of good quality with medium land use intensity, and attract transportation, logistical, and manufacturing-orientated industries.
- It is anticipated that the Airport Area West will not only attract new industries to the region, but also enable expansion of existing businesses within Winnipeg.

Business Environment and Competitiveness

- The stakeholders have suggested that while the City of Winnipeg does have a business tax and higher mill rate relative to the R.M. of Rosser, it is not the only deciding factor for business location. Proximity to higher levels of municipal services such as fire protection and transit, along with proximity to Winnipeg's labour market, are positive benefits to those locating in the City of Winnipeg.
- A key consideration for the City of Winnipeg to provide a competitive business environment is ensuring ease of development and being responsive to development needs (i.e., guaranteed and responsive zoning and permit approval timelines), which adds certainty to private industry and reduces transaction costs.
- The City of Winnipeg should endeavor to provide clear and transparent information to potential developers regarding development costs in the Airport Area West, similar to current practices employed by the R.M. of Rosser.
- The City of Winnipeg allowing the Inland Port Special Planning Area to facilitate development in CentrePort Canada South represents one such policy that would help ensure timely development and competitiveness with the R.M. of Rosser.
- The City of Winnipeg should ensure that infrastructure requirements (i.e., road and drainage standards) for the Airport Area West should remain competitive. This means development standards should be realistic and cost-effective for the level of industry expected to locate in the area (e.g., transport-oriented industries), while still enabling the safe and efficient movement of goods and services and meeting national transportation standards.

Appendix B: Impact of Government Funding to offset Water and Wastewater Infrastructure Costs

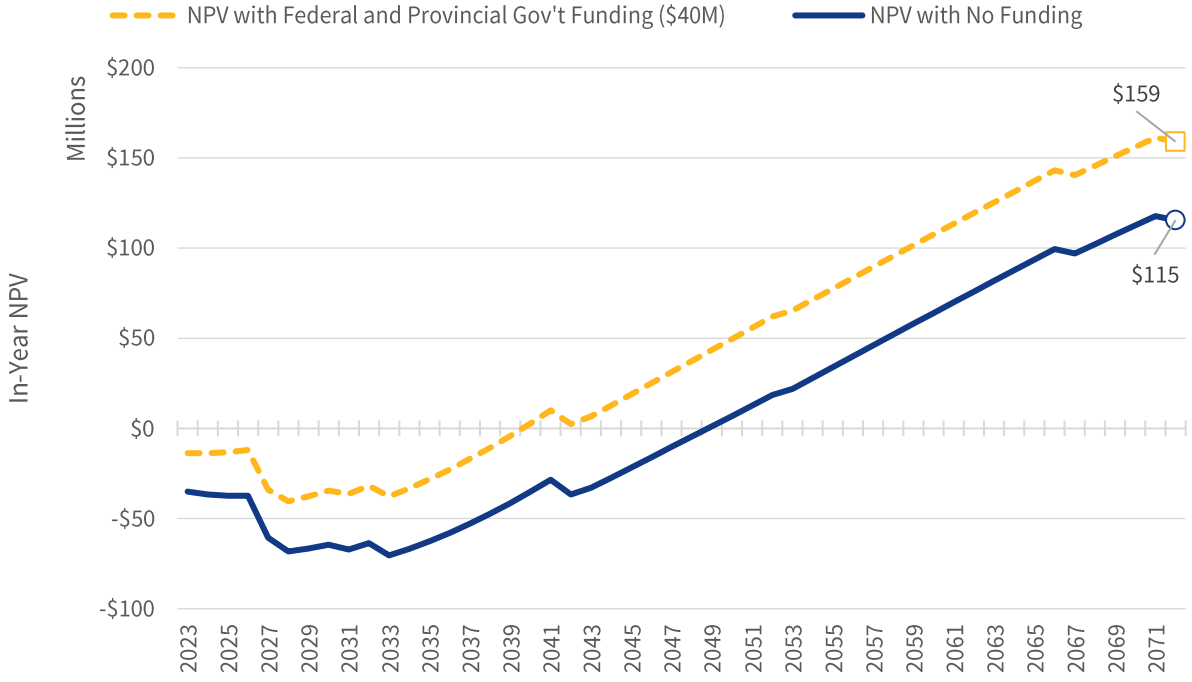
The City of Winnipeg's 2022 Preliminary Operating and Capital budget earmarks $20 million in City funds for the first phase of water and wastewater infrastructure to service the Airport Area West beginning in 2022. However, this proposal is subject to equal partnership with the Provincial and Federal Governments.

Assuming a total of $40 million in funding is provided to the City of Winnipeg from senior levels of government (i.e., $20 million from the Provincial Government and $20 million from the Federal Government), the impact on the fiscal net present value (NPV) of servicing the Airport Area West is significantly improved.

The chart below illustrates that if the City of Winnipeg receives $40 million in funding to help offset the costs of the first phase of the Water and Wastewater infrastructure, the net present value of the investment to the municipality improves by $44 million, or 38 per cent, by year fifty.

The $44 million improvement is greater than the $40 million investment from other levels of government because the reduced cost of Phase 1A to the City of Winnipeg means less borrowing is needed for the City's portion of costs, netting an additional $4 million in savings from reduced debt and finance charges over the fifty-year period.

In-Year NPV with and without Tri-Level Government Funding for Phase 1A of Water and Wastewater Infrastructure



Appendix C: Impact of Additional Policing Costs

In addition to allocating tax-supported policing costs to the Airport Area West on a population and employment per-capita basis, the Winnipeg Police Service (WPS) has indicated that there may be additional costs associated with the development beyond per-capita cost allocations. As the AAW region contains the southern portion of CentrePort Canada, it is estimated that the increase in international trade and commercial activity will require additional police resources. The Winnipeg Police Service estimates that it would need additional resources not included in the main NPV analysis above:

Increased Commercial Traffic

- The City of Winnipeg Public Works department projects a 28 per cent increase in commercial vehicle traffic activity within the city by 2050, and assuming a constant rate of change beyond 2050, would mean a 48% increase by 2072. Assuming relative increases in commercial vehicle collisions and inspections, the Winnipeg Police Service would require an additional five Commercial Vehicle Safety Alliance (CVSA) certified officers and an additional six Traffic Collision Investigators by 2072 to maintain current levels of service.

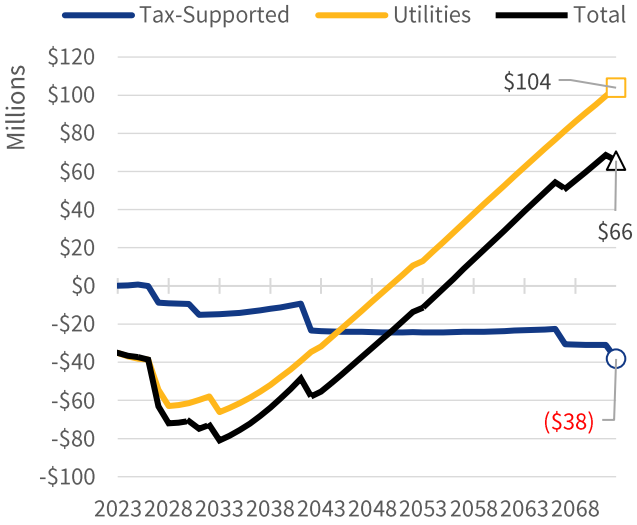
Organized Crime

- Assuming relative increases in the demand for investigative and intelligence resources, the Winnipeg Police Service would require an additional six investigative officers by 2072 along with one Crime Analyst, one Firearms Investigative Analysis Section (FIAS) Technician, and one Drug Exhibit Technician to appropriately address organized crime activity related to the CentrePort Canada development in the Airport Area West.

The Winnipeg Police Service estimates that these additional costs will total $7.8 million (in current dollars) by 2072, which is in addition to the $17.8 million in per-capita costs allocated in the main NPV analysis.

Once factored into the NPV calculation, these additional policing costs change the overall outcome by impacting the tax supported NPV. The overall NPV by year fifty is reduced from $115 million to $66 million, which is a reduction of $49 million, or 43 per cent. As policing costs are factored in on the tax-supported side only, this reduces the tax-supported NPV from $12 million to -$38 million, which represents a reduction of 417%.

In-Year NPV by Entity with Additional Policing Costs



This suggests that if policing resources are expanded as per the recommendations provided by the Winnipeg Police Service, the present value of the investment on the tax-supported side will be negative even after fifty years. In other words, the total cost to the tax-supported side of the municipality over the fifty-year period is more than the revenue received when measured in present valued dollars.

Appendix D: Net Present Value (NPV) Methodology and Assumptions

The Net Present Value (NPV) methodology represents the current value of future net cashflows to the City of Winnipeg from adding services to the Airport Area West that would enable it to grow. However, NPV calculations are highly sensitive to the assumptions used, and while every attempt is made to use reasonable assumptions, it is important to be transparent about what they are. The following tables indicate the assumptions used in this report to produce the NPV estimates.

Other general assumptions include the assumption that the build-out and subsequent maintenance schedule of road infrastructure in the area follows the development schedule outlined in the KGS Water and Wastewater infrastructure report.

All sources of data and assumptions are internal to the City of Winnipeg unless otherwise stated.

General NPV Calculation Assumptions

Metric	Value
Calendar Start Year	2023
Project Dollar Estimate Year	2020
Discount Rate	5.00%
Municipal Property Tax Growth Rate	2.33%
Water Utility Rate Adjustment beyond 2029 [21]	2.00%
Sewer Utility Rate Adjustment beyond 2029 [21]	2.00%
Capital Inflation Rate	3.00%
Operating Inflation Rate	2.00%
Capital Financing Period (Years)	30
Debt Interest Repayment Rate (Annual)	5.00%
Principal/Sinking Fund Repayment Rate (Annual)	2.28%

Public Works Operating Cost Assumptions
(All Financial Costs in 2020 dollars)

Metric	Value
Lane Kilometers of Road Added in Airport Area West	106
Annual Snow Clearing, Ice Control, Reactive Maintenance, and City Beautification Cost per Lane Kilometer	$6,439
Lifecycle Maintenance Cost of Local/Collector Roads per m^2 of pavement [22]	$240
Lifecycle Maintenance Cost of Regional Roads per m^2 of pavement [23]	$360
Local Roads Lifecycle in Years	50
Regional Roads Lifecycle in Years	50
Years after initial construction until road lifecycle maintenance begins	20

[21] Rates from the City of Winnipeg Water and Waste Department's rate projections as of March 2021 used up to and including 2029.
[22] Total lifecycle costs smoothed over 30 years.
[23] Total lifecycle costs smoothed over 30 years.

Water and Waste Operating Cost Assumptions
(All Financial Costs in 2020 dollars)

Metric	Value
People per Dwelling: Single Family	3.05
People per Dwelling: Multi-Family	2.30
Water Consumption: Single and Multi-Family, litres per-capita, per day	248
Water Consumption: Business Park/Commercial Mix (litres per hectare per day)	16,800
Water Consumption: Commercial (litres per hectare per day)	16,800
Water Consumption: Light Industrial (litres per hectare per day)	22,500
Water Consumption: Wet Industrial (litres per hectare per day)	33,600
Water Treatment cost per Megalitre [24]	$1,147
Wastewater Treatment cost per Megalitre [24]	$962
Water and Wastewater AAW Infrastructure Operating Costs (annual)	$488,062
Land Drainage Operating Costs (annual)	$1,542

Tax-Supported Operating Cost Assumptions

Metric	Value
City of Winnipeg Population by 2072 [25]	1,140,093
Airport Area West Population by 2072 [25]	10,795
City of Winnipeg Employment by 2072 [25]	675,765
Airport Area West Employment by 2072 [25]	16,615
Population: per-capita tax-supported departmental operating costs in 2072	$2,291
Employment: per-capita tax-supported departmental operating costs in 2072	$1,919

Frontage Levy Assumptions

Metric	Value
Combined Frontage Levy Rate per Foot	$5.46
Combined Frontage Levy Rate per Foot Annual Rate Increase	0.00%
Residential – Single Detached Frontage Feet per Net Acre	348
Residential – Multi-Family Frontage Feet per Net Acre	392
Business Park/Commercial mix Frontage Feet per Net Acre	208
Commercial Frontage Feet per Net Acre	208
Light Industrial Frontage Feet per Net Acre	208
Wet Industrial Frontage Feet per Net Acre	208

[24] Source: Municipal Benchmarking Network Canada. 2019 Service Area Reports.
[25] Source: 2016 City of Winnipeg Population, Housing and Economic Forecast (for values to 2040); City of Winnipeg Calculations (for values beyond 2040)

Assessment Values per Net Acre by Scenario

Development Type	Assessment Value per Net Acre		
	Average Potential	Low Potential	High Potential
Residential - Single Detached [26]	$3,620,220	$3,255,351	$4,050,581
Residential - Multi-Family [26]	$4,823,178	$4,301,442	$5,500,846
Business Park/Commercial Mix [27]	$1,904,596	$1,086,500	$2,443,420
Commercial [27]	$1,790,676	$977,611	$2,168,254
Light Industrial [27]	$1,209,399	$692,473	$1,573,255
Wet Industrial [27]	$1,209,303	$809,495	$1,397,958

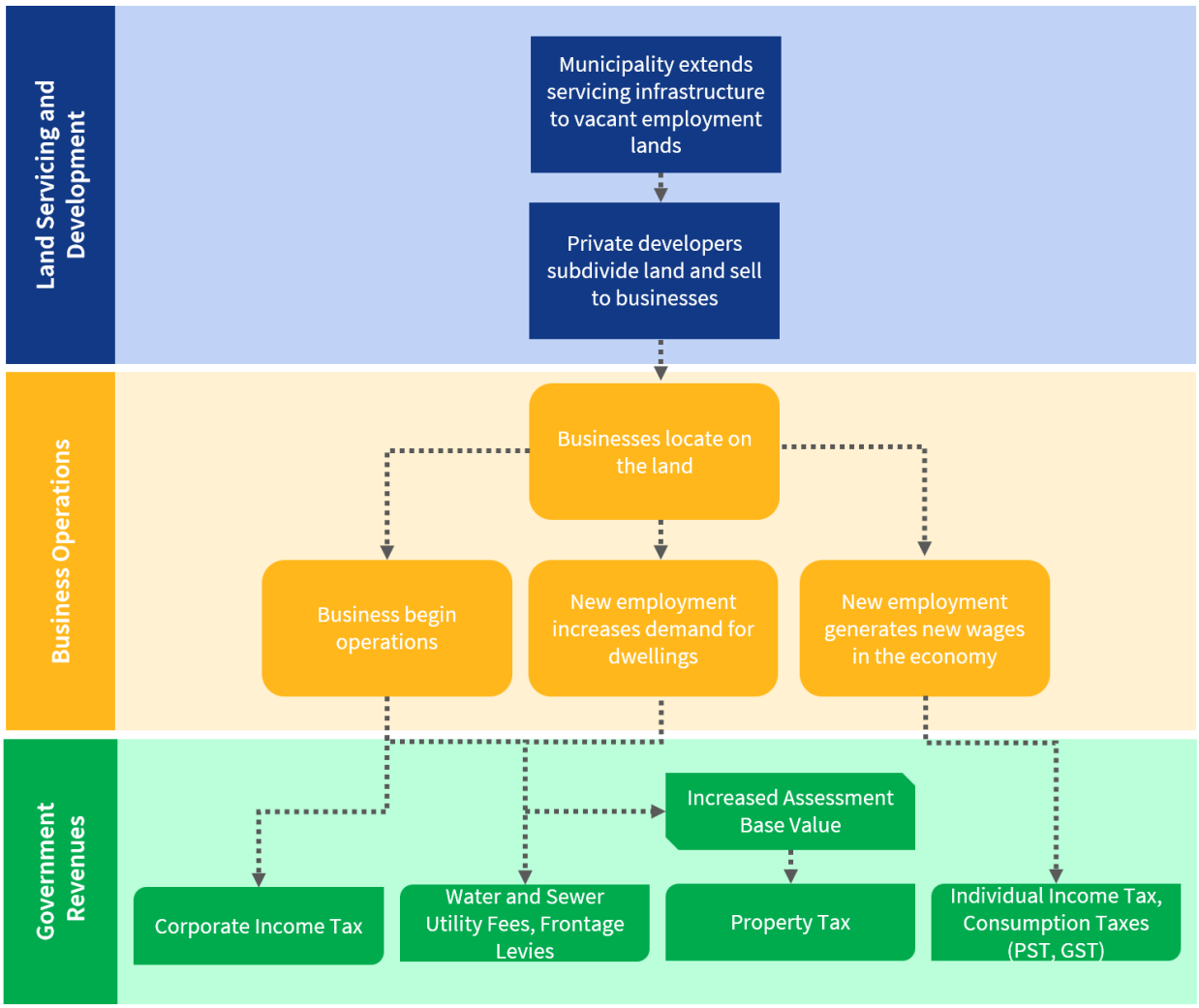
[26] Assessment values per acre for single detached and multi-family dwellings derived by gathering statistics from the following nearby neighborhoods: Amber Trails, Inkster Gardens, Leila North, Mandaly West, North Inkster Industrial, Ridgewood South, Rosser-old Kildonan, and The Maples.

[27] For a map of the sample of assessment parcels used to derive these values, please see Appendix G.

Appendix E: Long-Term Economic Impact Methodology and Assumptions

To estimate the long-term economic impacts and resulting revenues to all three levels of government, the following diagram shows the general model used. Assumptions used in the model are also provided. A significant caveat for this model is that it assumes all jobs locating to the newly serviced land is net-new to the regional economy from either the expansion of existing businesses or the addition of new businesses. Therefore, these jobs represent new wages, new dwelling demand, and new government revenues that would not have otherwise existed. In reality, this may not be the case, and employers who choose to locate on the lands may be a mix of new and relocating businesses.

Long-term Economic Impact Model Methodology



For the long-term economic impact, values are estimated in 2020 dollars and are not directly comparable to the values presented in the net present value (NPV) analysis. This is due to the uncertain nature of how tax regimes across all three levels of government, home values, job density, wages, and dwelling demand will change over the next 50 years. Therefore 2020 values are utilized to evaluate the economic impact at full build-out.

Long-term Economic Impact Model General Assumptions
(All Financial Metrics in 2020 dollars)

Metric	Value
Industrial jobs per net acre	8.90
Commercial jobs per net acre	101.00
Office jobs per net acre	149.70
Federal and Provincial Tax Brackets	2020 Tax Brackets
PST Rate	7.00%
GST Rate	5.00%
% of average annual income that is paid to PST [28]	3.52%
% of average annual income that is paid to GST [28]	3.03%
Ratio of individual income tax to federal corporate income tax [29]	28.4%
Ratio of individual income tax to provincial corporate income tax [29]	17.3%
Ratio of job creation to single-detached home demand [30]	0.38
Ratio of job creation to semi-detached home demand [30]	0.05
Ratio of job creation to row home demand [30]	0.06
Ratio of job creation to apartment unit demand [30]	0.12
Average single-detached home assessment value [31]	$503,589
Average semi-detached home assessment value [31]	$348,839
Average row home assessment value [31]	$348,839
Average apartment unit assessment value [32]	$184,642
City of Winnipeg Municipal Mill Rate	12.861
Provincial Education Mill Rate [33]	0.00
Water Utility Rate (per Cubic Metre)	$1.90
Sewer Utility Rate (per Cubic Metre)	$2.86

[28] City of Winnipeg author's calculations using Statistics Canada Table 36-10-0221-01 Gross domestic product, income-based, provincial, and territorial, annual; Statistics Canada. Table 36-10-0224-01 Household sector, current accounts, provincial and territorial, annual; and Statistics Canada Table 36-10-0432-01 Detailed household final consumption expenditure- sales taxes and expenditure excluding sales taxes, provincial and territorial, annual

[29] City of Winnipeg's author's calculations using Statistics Canada Table 31-10-0450-01 Revenue, expenditure, and budgetary balance – General governments, provincial and territorial economic accounts; values represent five-year average from 2015 to 2019.

[30] City of Winnipeg author's calculations using CMHC Starts and Completion Survey for housing absorptions, and Statistics Canada Table 14-10-0384-01, Employment by industry, census metropolitan areas, annual. 2015 to 2019 data used.

[31] Source: CMHC, Market Absorption Survey

[32] Source: City of Winnipeg data

[33] Model assumes provincial education property tax has been completely phased out.

Long-term Economic Impact Model Employment Assumptions [34]

Share of Total Employment by Land use, Employment Status, and Duration

Land Use	Worked Full Year		Worked Part Year		Total
	Full Time	Part Time	Full Time	Part Time	
Commercial	41%	13%	22%	24%	100%
Industrial	56%	2%	34%	7%	100%
Institutional	55%	9%	21%	16%	100%
Office	65%	5%	21%	8%	100%

Long-term Economic Impact Model Employment Assumptions [35]

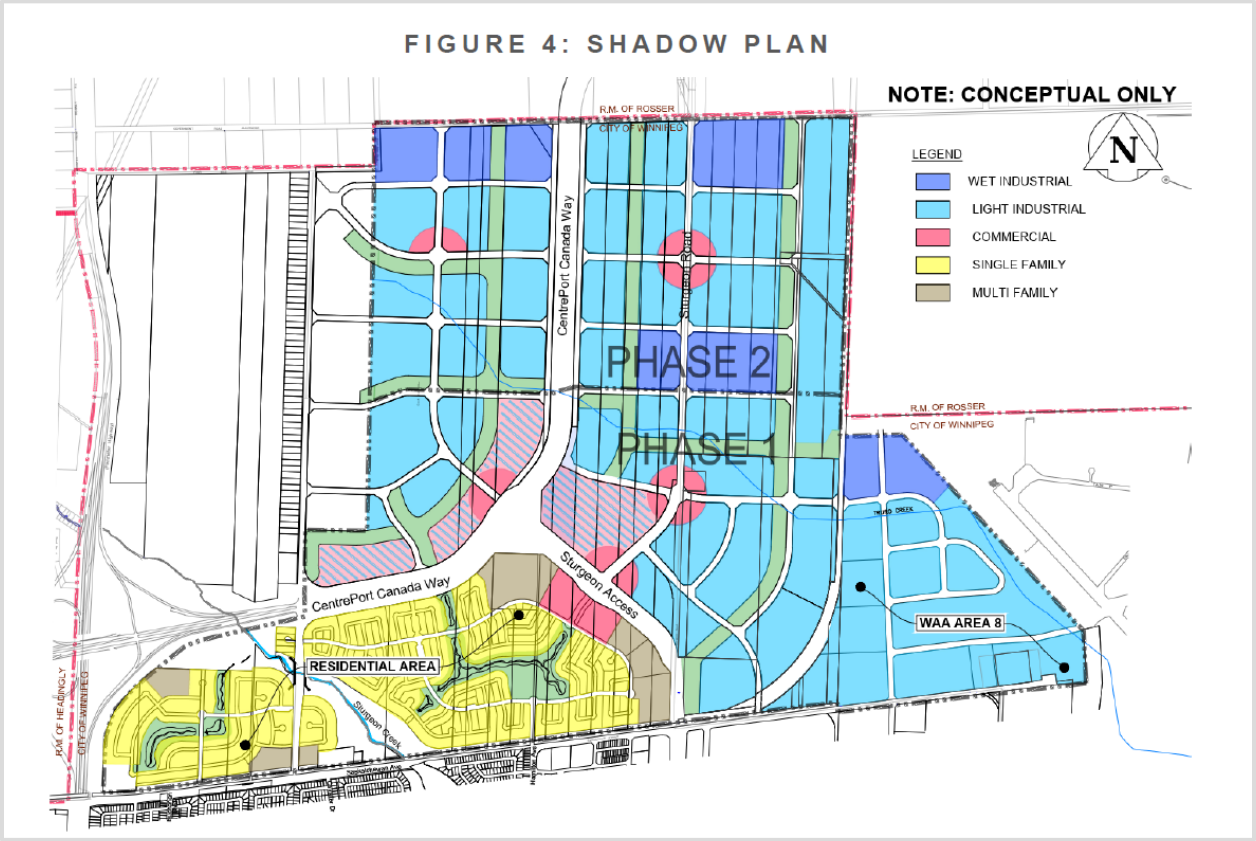
Weighted Average Wages (2020 dollars) by Land Use, Employment Status, and Duration

Land Use	Worked Full Year		Worked Part Year	
	Full Time	Part Time	Full Time	Part Time
Commercial	$51,154	$18,604	$32,776	$11,072
Industrial	$60,909	$16,192	$39,774	$10,916
Institutional	$101,258	$42,584	$72,111	$22,452
Office	$73,279	$27,214	$48,058	$14,483

[34] City of Winnipeg author's calculations using Statistics Canada 2016 Census, Catalogue no. 98-400-X2016304 for City of Winnipeg

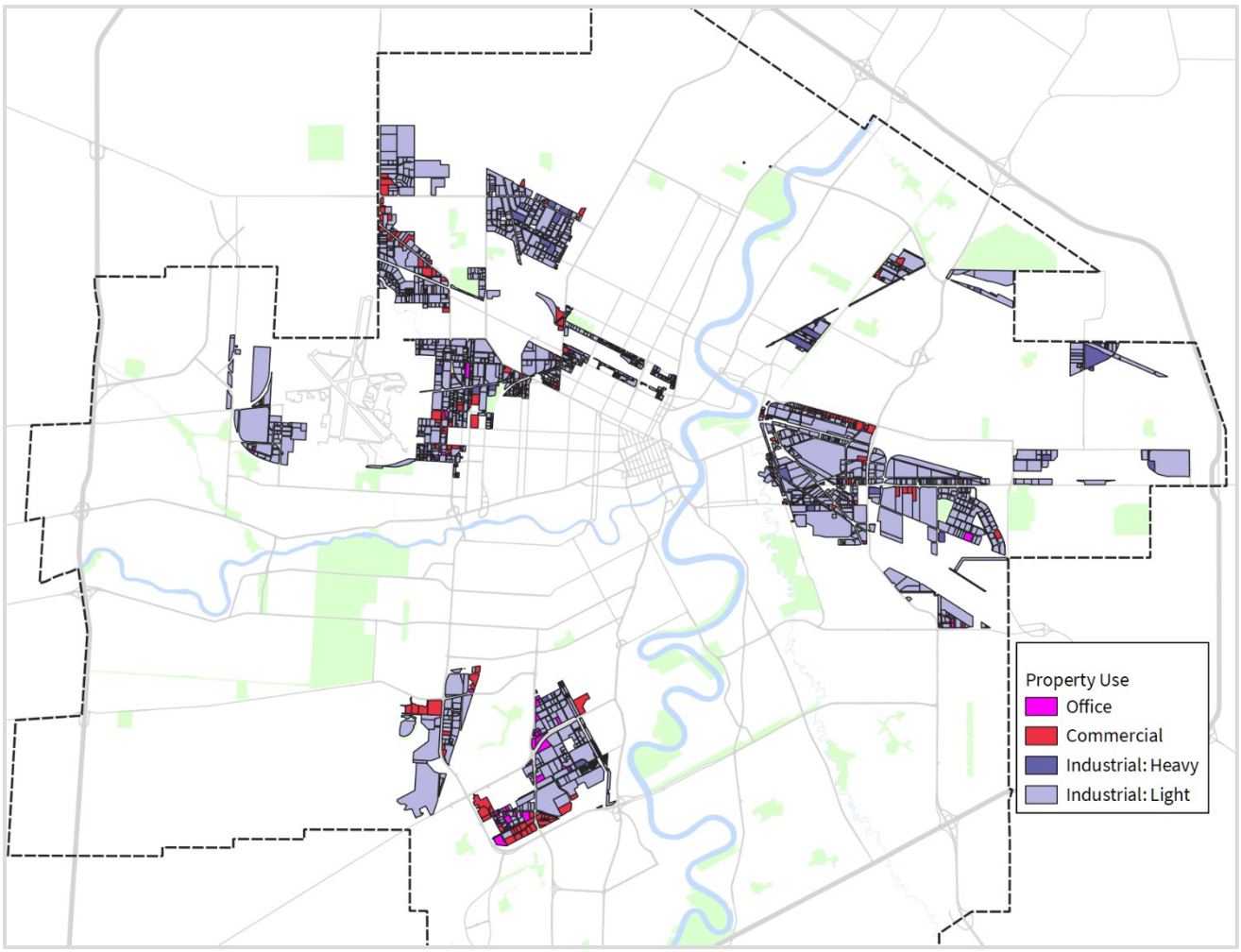
[35] City of Winnipeg author's calculations using Statistics Canada 2016 Census, Catalogue no. 98-400-X2016304 for City of Winnipeg; adjusted to 2020 wage rates using Statistics Canada Table 14-10-0340-01, Employee wages by Occupation, Annual (for 2015 to 2020 adjustment)

Appendix F: Airport Area West Shadow Plan



Map Source: KGS Group *Airport Area West Regional Water and Wastewater Servicing Preliminary Engineering Design Report*

Appendix G: Comparable Office, Commercial, and Industrial Parcels



Source: Author's calculations, City of Winnipeg



510 Main Street | Winnipeg | Manitoba | Canada | R3B 1B9 | winnipeg.ca