

City of Toronto

## **Downsview Area Secondary Plan Infrastructure Master Plan Report**

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**Project Number:**

60117939

**Date:**

January, 2010

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February 12, 2010

Sharon Hill  
Project Manager  
City of Toronto  
5100 Yonge Street  
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Dear Ms. Hill:

**Project No: 60117939**

**Regarding: Downsview Area Secondary Plan Review – Infrastructure Master Plan Report**

Please find attached the final copy of the Infrastructure Master Plan Report for this project.

Sincerely,  
**AECOM Canada Ltd.**

Ian Roger, P. Eng.  
Senior Project Manager

IR:ir  
Encl.  
cc:

# Distribution List

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# Revision Log

Revision #	Revised By	Date	Issue / Revision Description
1	IR	Feb 2010	Client comments

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# 1. Introduction & Study Background

## 1.1 Purpose of the Study

The Federal government announced the closure of the former Canadian Forces Base Downsview in 1994 and their intention that the lands be held in perpetuity and trust as a unique urban recreational space. The Federal Government directed that the new National Urban park should be established and managed on a self-financing basis. The federal government therefore created Parc Downsview Park Inc. (PDPI), an agency with the mandate to manage the majority of the Downsview Area Secondary Plan lands. PDPI reports to the Parliament of Canada through the Minister of Transport, Infrastructure and Communities.

The Department of National Defence (DND) continues to retain some lands to accommodate ongoing military needs and to maintain an important presence in Toronto. In addition, Bombardier Aerospace owns and maintains jurisdiction of their manufacturing plant and associated airport runway and are considered a major employer in the City of Toronto. Other major land-owning stakeholders are the City of Toronto (Build Toronto) who own lands around the Downsview subway station between Allen Road and Wilson Heights Boulevard. The Toronto Transit Commission (TTC) who own and operate the Downsview and Wilson subway and bus stations and the Wilson Railway Yards. The Canadian National Railway (CN) who own and operate the regional freight and passenger rail line in conjunction with GO Transit; Canada Lands who own the former Denison Armoury and Smart Centres Inc. who own and lease land to various big-box retailers, located in the southeast portion of the Secondary Plan area near Dufferin Street and Highway 401.

The current Downsview Area Secondary Plan was approved by City Council in 1999 (OPA 464) as an amendment to the former City of North York Official Plan. In 2001, the Plan was amended (OPA 504) to include the approval of a mix of uses for the lands at the southwest and southeast corners of Allen Road and Sheppard Avenue West.

The new City of Toronto Official Plan was approved by the Ontario Municipal Board in July 2006 and contains the Downsview Area Secondary Plan, Part 7 of Chapter 6 of the Official Plan, mostly in its original form. In addition to the new Official Plan's planning policies, goals and objectives, a new intermodal transit station between TTC and GO Transit is being planned in the Secondary Plan area where the CN rail intersects Sheppard Avenue West, as part of the proposed Spadina Subway Extension to York Region.

In June of 2008, Parc Downsview Park developed a land use concept plan for the redevelopment of their lands within the context of many of the updated federal, provincial and municipal land use planning objectives. In light of these events and a renewed vision by Parc Downsview Park to develop their lands, the City of Toronto is undertaking a review of its current

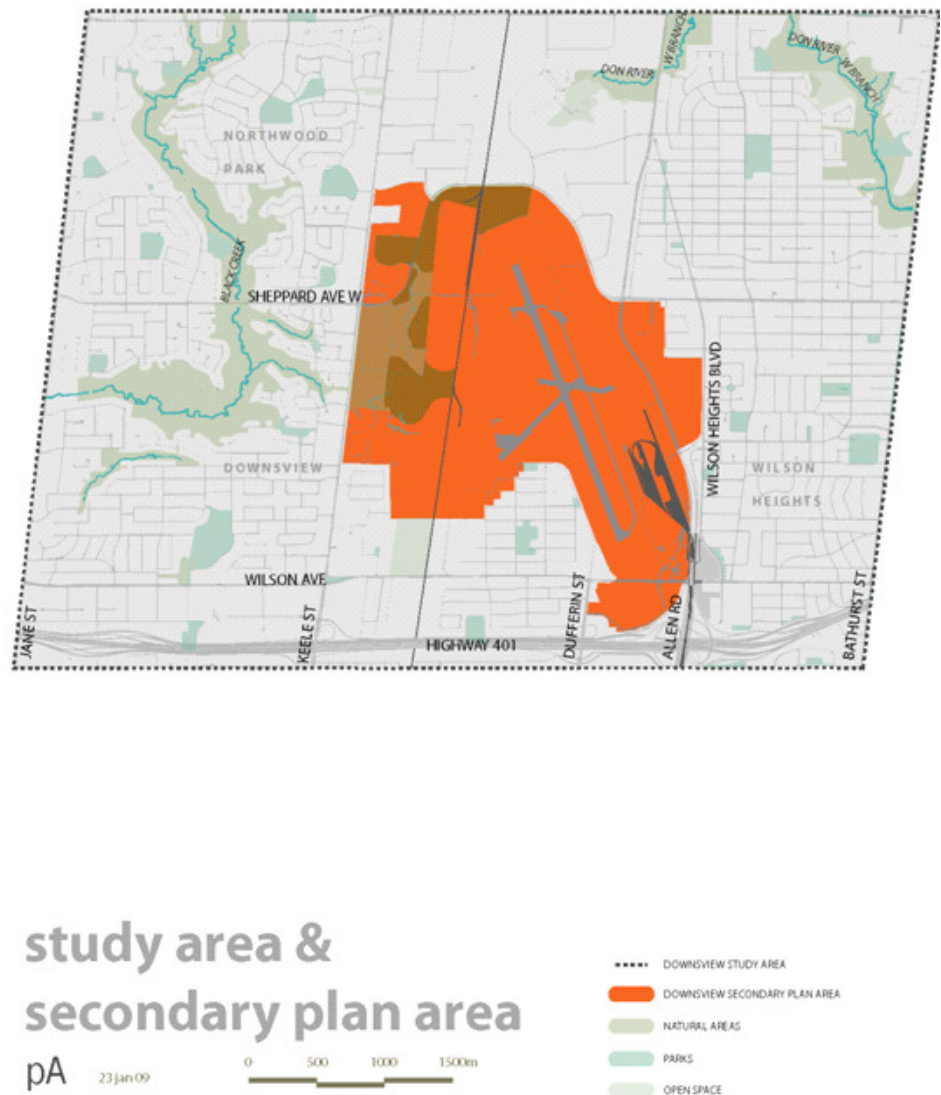
Downsview Area Secondary Plan policies and objectives, to consider the intensification of transit-supportive land-uses as a result of the major local and regional transit investment in the area.

The Servicing Needs Report has been undertaken to assess and identify, at a strategic level, the servicing infrastructure requirements (water, wastewater, and stormwater) that are necessary to support the growth and development within the Downsview Area Secondary Plan.

## 1.2

**Study Area**

The Downsview Area Secondary Plan is located in the north central part of Toronto and is bounded by Highway 401 to the south, Keele Street to the west, W.R. Allen Road and Wilson Height Boulevard to the east, and Sheppard Avenue West to the north. The lands within the Plan area total 537 hectares (1,320 acres). The larger Study Area, which contains the Secondary Plan lands, is bounded by Highway 401 to the south, Jane Street to the west, Bathurst Street to the east, and Finch Avenue West to the north. The boundaries of the Study Area and the Secondary Plan area are shown in **Figure 1**.



**Figure 1. Downsview Area Secondary Plan Review Study Area**



### 1.3

## Policy Context

There are number of provincial and local policies that direct completion of the Downsview Area Secondary Plan.

**The Ontario Provincial Policy Statement (PPS)** provides policy direction on matters of provincial interest related to land use planning and development. The PPS provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural environment. The policies of the Provincial Policy Statement may be complemented by provincial plans or by locally-generated policies regarding matters of municipal interest. All planning decisions must be consistent with the PPS.

The PPS speaks to building strong, liveable and healthy communities through efficient land use and development patterns and promotes intensification and redevelopment within designated growth areas, to accommodate an appropriate range and mix of employment opportunities, housing and other land uses to meet current and a projected needs for a time horizon of up to 20 years.

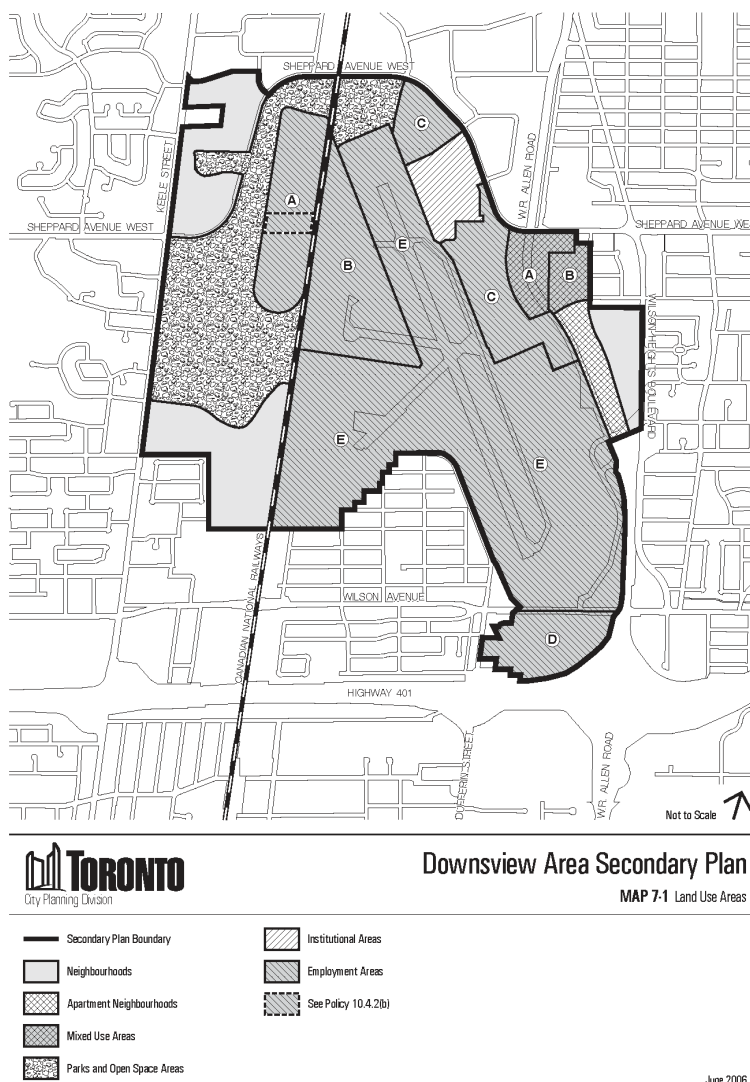
**The Growth Plan for the Greater Golden Horseshoe** (Growth Plan) came into effect on June 16, 2006. It provides a framework for implementing the Government of Ontario's vision for building stronger prosperous communities by better managing growth in the region to 2031. The Growth Plan provides directions on issues such as transportation, infrastructure planning, land-use planning, urban form, housing, natural heritage, and resource protection.

**The City of Toronto Official Plan (OP)** was adopted by Council in 2001 and approved by the Ontario Municipal Board (OMB) in July 2006. The OP envisions that most of the new growth in the City of Toronto over the next 30 years will occur in land use designations covering 25% of the City's geographic area. The new growth is expected to occur in the Downtown, Avenues, Centres, and Employment District areas.

The OP provides a blueprint for how the City should grow in the next 20 to 30 years. It identifies where significant new jobs and housing will be encouraged and it encourages a more sustainable environment by promoting growth that is less reliant on the private automobile, directing development to areas with good transit service, improving transit in major growth areas, and emphasizing environmentally sustainable developments.

The OP also protects the physical character of Toronto's low-rise neighbourhoods, including design policies to guide the physical form of development and public realm improvements, other policies to protect heritage buildings and resources, and preserve natural areas and ravines. The OP emphasizes the importance of protecting the City's important employment districts and ensuring that the social and environmental infrastructure is in place to serve Toronto's present and future residents.

The Official Plan should be referred to for more detailed information on each policy.



**Figure 2. Downsview Area Secondary Plan – Land Use Areas**

Source: Official Plan, Chapter 6, Section 7: Downsview Area Secondary Plan – Map 7-1 Land Use Areas

### Current Downsview Area Secondary Plan

The current Downsview Area Secondary Plan is included in Part 7 of Chapter 6 of the Official Plan. The Plan sets out a development framework for the Plan area. Figure 2 shows the different development areas and land use within the Plan area. The following are the major goals of the current Secondary Plan:

- create a major public park along Keele Street;
- develop a unique, high quality, built environment in a park-like setting;
- provide for a balanced mix of urban land uses at an overall level of development consistent with the capacity of the regional transportation network;
- establish appropriate built form and land use relationships between development within the Secondary Plan Area and adjacent lands;
- celebrate and commemorate the significant military and aviation history associated with these lands; and;
- foster economic growth, revitalize the Downsview community, generate opportunities for jobs, assessment and business development and provide spin-off opportunities for adjacent industrial and commercial areas.

Section 10 of the Plan covers the development policies for the different land uses shown in Figure 2. The land use areas include:

- **Parks and Open Spaces**
- **Neighbourhoods**
- **Apartment Neighbourhoods**
- **Employment Area 'A'**
- **Employment Area 'B'**
- **Employment Area 'C'**
- **Institutional Areas**
- **Employment Area 'D'**
- **Employment Area 'E', and**
- **Mixed Use Area 'A' and 'B'**

A full description of the currently approved land uses permitted in the existing Secondary Plan is covered in the Land Use report.

## 1.4

### Municipal Class EA Process

The Servicing Needs Report is being conducted in accordance with Phases 1 and 2 of the Municipal Engineers Association's (MEA) Municipal Class Environmental Assessment (Class EA) document, dated October 2000, as amended in 2007. The EA process is shown in which is an approved process under the provincially legislated Environmental Assessment Act.

Phase 1 of the Class EA:

- Identifies and describes the problem or opportunity of the Downsview Area Secondary Plan; and
- Commences the public consultation process.
- 

Phase 2 of the Class EA will include the following steps:

- Identify the alternative solutions to the problem; all reasonable and feasible alternatives will be identified and described;
- Prepare a physical description of the Plan area and a general description of the natural, social and economic environments;
- Evaluate all reasonable alternative solutions identified previously;
- Consult with the review agencies and the public to solicit comment and input; and
- Select a preferred solution.

Phases 3, 4, and 5, as shown in Figure 3, will need to be completed as part of separate project initiatives prior to implementing specific infrastructure elements recommended in the Secondary Plan.

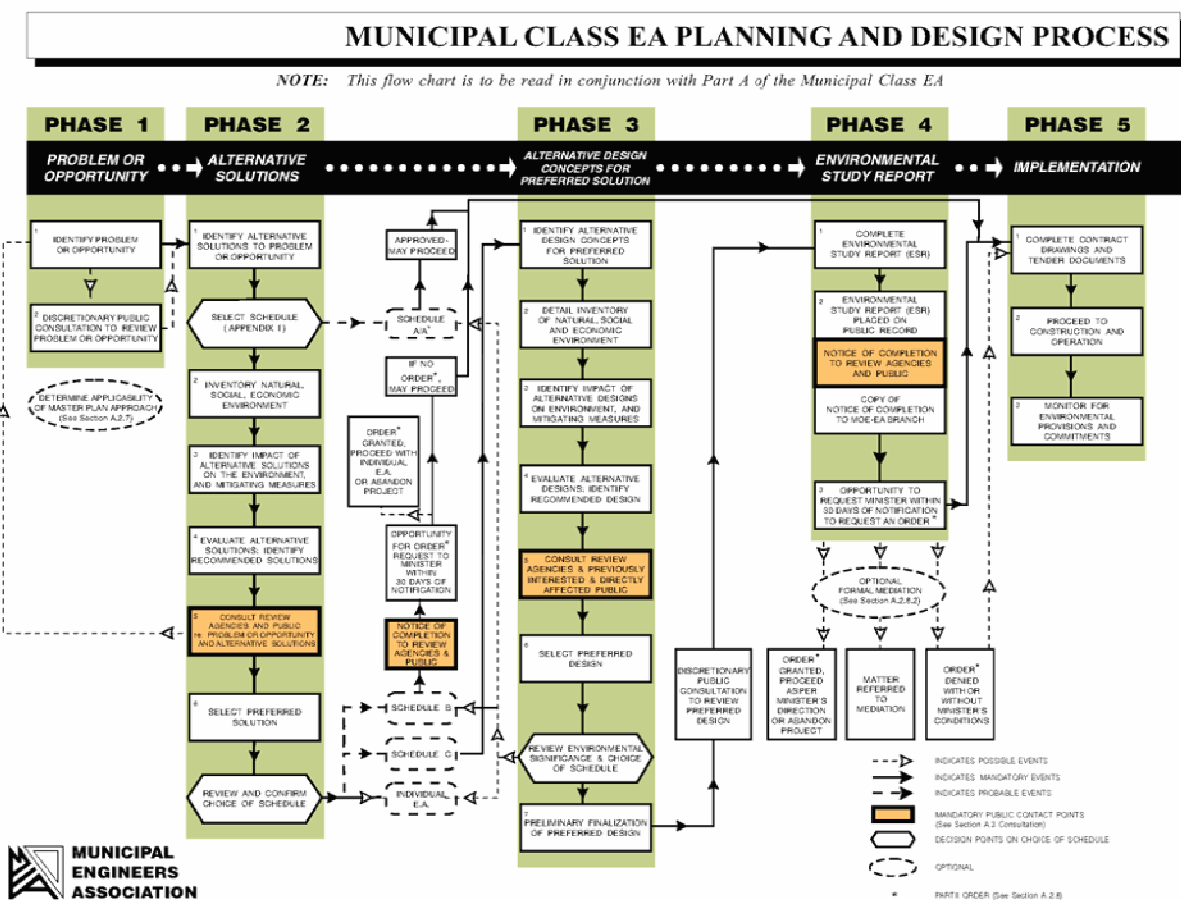


Figure 3. Municipal Class EA Process

## 1.5 **Summary of Phase 1 Report – Background Review and Existing Conditions**

In addition to the detail overview of the background policy context, summarized above, the Phase 1 Report provides an overview of existing servicing in the study area for the Downsview Area Secondary Plan. The summary includes an overview of the water, wastewater, and stormwater networks in the area.

Overall, there is little existing servicing infrastructure in the Secondary Plan Area. The majority of the existing servicing that is there is privately owned and operated. These services tie into the services of the City of Toronto on the perimeter of the DASP. The internal private servicing is generally not of suitable capacity and location to support future developments of the type and extent that is foreseen for the DASP. Part of the re-development of the DASP will therefore require that sections of the internal networks be replaced by public networks in new municipal right-of-ways. Other sections thereof may be connected into by the new the public system in the DASP and further augmented if they meet the City's requirements for servicing infrastructure.

As is presently the case, the future internal servicing networks will rely on connection to the City's servicing infrastructure on the perimeter of the DASP. This external servicing infrastructure is nearby and well distributed around the area, but it has not been sized to support significant growth in the DASP. The external water supply, wastewater collection, and storm water management systems will require improvements in order to support future development within the DASP.

The development strategy is to have any servicing for the secondary plan implemented by separate and combined actions of both the public and private interest in the DASP. Prior to allowing any development that will negatively impact these external systems, the City will have to be satisfied by the Developer(s) that levels of servicing are available to serve present users and further development.

The reader is encouraged to review the entire Phase 1 Report for more detailed information on the existing conditions in the Study Area.

## 1.6 **Summary of Phase 2 Report – Identification & Evaluation of Servicing Review**

The purpose of this Phase 2 Report was to further investigate existing water, wastewater, and storm sewer infrastructure that would serve the Secondary Plan and establish the issues that will need to be addressed resultant from the assessment of the land use options being considered.

The Phase 2 Report established that the development of the Downsview Area Secondary Plan up to full build out will require re-development and/or replacement of the internal water and wastewater servicing and improvements to the external water supply and wastewater and stormwater collection systems.

The majority of the existing water and sewer networks in the DASP are privately owned. Re-development of the DASP means that sections of these “private” networks will be replaced by public networks in municipal right-of-ways.

The main challenge related to servicing identified for the DASP is the lack of capacity in the existing external water and wastewater systems that would service this secondary plan. All of the options, including the existing approved secondary plan, cannot be built out in accordance with the proposed uses and densities without upgrades to the existing networks to improve capacity.

The reader is encouraged to review the entire Phase 2 Report for more detailed information on the servicing options assessed for the development options considered for the Study Area.

## 1.7

### **Summary of Phase 3 Report – Identification of a Draft Recommended Option**

Phase 3 Identification of a Draft Recommended Option Report built upon the findings summarized in the Phase 2 Identification and Evaluation of Servicing Review Report. It focused on the development of the Draft Recommended servicing network necessary to support the recommended land uses and identify the associated costs for the draft recommended servicing networks.

The analysis and testing of the Emerging Preferred Network in Phase 3 involved taking a closer look at the location of land use types, revisiting development densities and density assumptions, and testing built form options. This analysis was done in consultation with the land use and transportation analysis. Because the development of a Recommended Plan is an iterative process, the residential and employment populations generated from the Emerging Preferred Plan were used to test and refine potential transportation, servicing and stormwater network configurations for the area.

The results of the transportation, servicing and stormwater analysis were then fed back into the land use analysis. This cycle of testing continued throughout Phase 3 until an ideal balance was achieved, based on the goals and objectives of the study.

Overall, the draft Recommended Land Use proposes a total population and employment of approximately 41,600 people, which is 8% higher than for the

Existing Secondary Plan Land Use. This is broken down into approximately 9,840 residential units, which is 18% higher than permitted in the Existing Secondary Plan, and provides for 1.4 million square meters of gross employment floor area, approximately 5% less than provided in the Existing Secondary Plan. The split between total population and employment is 47% and 53%, respectively, which is slightly different from the Existing Secondary Plan (45%, 55%).

The land use adjustments reflected in the draft Recommended Land Use Plan allows for the higher growth with similar operational performance as the approved Secondary Land Use Plan. A detailed summary of the draft Recommended Land Use Plan can be found in Appendix A of the Phase 3 Report.

A full description of the Phase 3 work, including the scenarios tested and recommendations can be found in the Phase 3 – Identification of a Draft Recommended Option.

## **2. Recommended Servicing Plans**

### **2.1 Water Servicing Plan**

The City of Toronto has determined that there is adequate capacity (volumetric supply) in the system currently and in the future to meet the needs of the proposed development of the DASP.

The main challenge for providing water service for the recommended development plan is the lack of adequate of system pressure within parts of Pressure District 5 (PD-5). The DASP is currently entirely within the boundaries of Pressure District 5.

The North York Water Distribution Study was completed in February 2009, and one of the recommendations from this study was further review of the adjustment of the boundary between PD-5 and PD-6. The City is currently assessing options for further review of this recommendation either internally or through the use of a consultant. Prior to allowing any development that will negatively impact PD-5, the City will have to be satisfied that adequate water supply and pressure are available to serve present users and future development. Toronto Water staff has indicated that the likely method of integrating the DASP into Pressure District 6 would be through the use of isolation valves and pressure boosting/reducing infrastructure rather than constructing additional mains as proposed in Alternative 3a of the Phase 3 report.

Based on this information, the recommended water servicing network is shown in Appendix A.

The City of Toronto does not have a firm date for the completion of the final assessment of the options for addressing the pressure deficiencies in PD-5. Prior to allowing any new development in the DASP, the City will have to be satisfied through a detailed engineering analysis that

- a) adequate water supply and pressure are available to serve present users and any proposed development, and
- b) the proposed water supply system will be easily integrated in the future into the City's planned adjustment of the PD-5 and PD-6 boundaries.

## 2.2

### Wastewater Servicing Plan

The proposed re-development of the DASP will bring about removal of much of the existing internal wastewater collection system and will require higher capacity systems than currently exist. The new sanitary sewers will be required to service the complete re-development of the DASP, incorporating the City of Toronto principles of sustainability and separation of storm and sanitary flows.

Opportunities for the sanitary servicing in the DASP include connections to local and trunk sanitary sewer systems on the adjacent lands. The Don sanitary trunk system to the east and the Black Creek/Humber sanitary trunk system to the west of the DASP are reported to be able to accommodate a growth in equivalent population as follows:

- The part of the West Don sanitary system that serves the DASP has capacity for an approximate population of 25,000.
- The part of the Black Creek/Humber sanitary system that serves the DASP has additional capacity for an approximate population of 45,000.

Constraints to be considered are the following:

- The trunk sewers have capacity problems under certain wet weather conditions in both the West Don and Black Creek sewer sheds; and,
- Local sewer capacity: A number of local sewers have been sized for current use and are not adequately sized for the contemplated future developments. Basement flooding occurs in some parts of the Black Creek and West Don sewersheds.

An infrastructure solution to address the capacity problems in the Black Creek trunk sanitary sewer system has been proposed and described in an Environmental Study Report that was completed in 1990 for the Metropolitan Toronto Works Department by RV Anderson Associates Ltd. The planned solution is for the construction of the Keele Street Trunk Relief Sewer which includes a connection between the existing Black Creek trunk sewer and the proposed Keele Street Trunk sewer in the easement area south of Maryport



Avenue. The connection sewer, herein referred to as the Maryport Trunk Relief Sewer, was constructed in 1993 and is currently used as a detention facility (2,800 m<sup>3</sup>). This will allow new development, up to 45,000 population, to proceed without worsening the surcharge condition of the Black Creek Trunk sewer under wet weather conditions. The surcharging will only be reduced when the Keele Street Trunk Sewer is constructed which will allow the Maryport Trunk sewer to act as a diversion to relieve the flow from the Black Creek Trunk to the Keele Street Trunk sewer.

The recommended wastewater collection system will collect wastewater and send it by gravity to the appropriate sub-trunk/trunk sewer system. This eliminates the capital and operating costs for pumping systems as well as not sending wastewater to other sewersheds that may require capacity for other future developments.

Based on this information, the recommended Wastewater collection system is shown in Appendix B.

The recommended option will require additional engineering investigation and improvements to the wastewater network outside the DASP to address capacity in specific pipes sections and surcharging during wet weather flow conditions. These additional investigation will be required prior to, or in conjunction with, the consideration of any development applications within the DASP.

## **2.3 Stormwater Servicing Plan**

As noted in the earlier reports, only one stormwater servicing option has been considered for all possible development options. The DASP is at the height of land between watersheds. The recommended servicing option creates a system of stormwater management ponds and collection pipes that is sized to meet the existing criteria and objectives of the City of Toronto and the Ministry of the Environment. The Phase 2 and Phase 3 reports provide additional/expanded information on the noted criteria and objectives used to establish the recommended stormwater servicing network.

Based on this information, the recommended stormwater servicing network is shown in Appendix C.

# **3. Policies to Support the Plan**

## **3.1 Wet Weather Flow Management Policy**

Any proposed stormwater flows will need to adhere to the requirements of the Wet Weather Flow Master Plan. The guiding principles for management of Wet Weather Flows are:

1. As a priority, rainwater (including snowmelt) should be managed where it falls on the lots and streets of our City, particularly before it enters a sewer.
2. Wet weather flow will be managed on a watershed basis with a natural systems approach being applied to stormwater management as a priority.
3. A hierarchy of wet weather flow solutions will be implemented – starting with “at source”, then “conveyance”, and finally “end of pipe”.
4. Toronto’s communities need to be made aware of wet weather flow issues and involved in the solutions.

In general three key WWF Management targets (Interim) are:

1. Water Balance (or annual runoff volume) – for erosion control, groundwater recharge and downstream habitat protection;
2. Water Quality – for protection of downstream water resources;
3. Water Quantity - peak flow control for flood management; and both peak flow and runoff controls to mitigate erosion impacts.

All future development within the Downsview lands will need to meet the targets set out within the WWMF guidelines for water balance, water quality and water quantity.

A more detailed explanation of the objectives of the Wet Weather Flow Management objectives and criteria and provided in the Phase 3 Report.

## **4. Implementation of the Plan**

### **4.1 Implementation Phasing and Priorities**

The recommended networks for water, wastewater, and stormwater have all been established based on the City of Toronto’s requirements to have public services constructed within the public right-of-ways. Any infrastructure upgrades outside the DASP need to be in place prior to major development within the DASP.

Given the contemplated number of connection points of the DASP to the existing water supply network, individual engineering analyses will be required for development applications to assess and address the City’s requirements for adequate supply (volume and pressure) for domestic and fire protection and ensuring adequate looping/flow is provided for maintenance, fire protection, and ensuring proper chlorine residual is maintained.

The recommended wastewater and stormwater systems networks are both gravity systems. Development must also proceed from the downstream portions of the systems OR infrastructure must be constructed in undeveloped areas to serve developments that are proposed at the head of wastewater or stormwater systems.

#### 1. Allen District

The servicing review has determined that there is very little remaining capacity in the existing local/sub-trunk sewers that the Allen District will connect to. Some limited development may occur in this area, but detailed engineering analyses will be required to confirm the available capacities.

In order for full build-out of the Allen District to occur, it will require the reconstruction and oversizing of the sewer on Almore Avenue and possibly the downstream continuation of this sewer on Timberlane Drive.

#### 2. Chesswood and Sheppard Districts

These districts are proposed to develop in conjunction with the development of the proposed TTC/GO station. In order for these districts to proceed, the new public wastewater servicing from Keele Street/Maryport will be required.

#### 3. William Baker District

Development in the northern end of this district will require the construction of the downstream public wastewater servicing like the Chesswood and Sheppard Districts.

#### 4. Stanley Green District

Development in the Stanley Green District requires the construction of the new public water and wastewater servicing from Keele Street.

## 4.2

### Infrastructure Cost Estimates

The following table summarizes the cost estimates for the infrastructure for the recommended plan. These cost estimates are explained in greater detail in the Phase 3 report.

ITEM	COST
Water System	\$5,110,000
Wastewater System	\$10,630,000
Stormwater Trunk Sewer	\$5,160,000
TOTAL	\$20,900,000

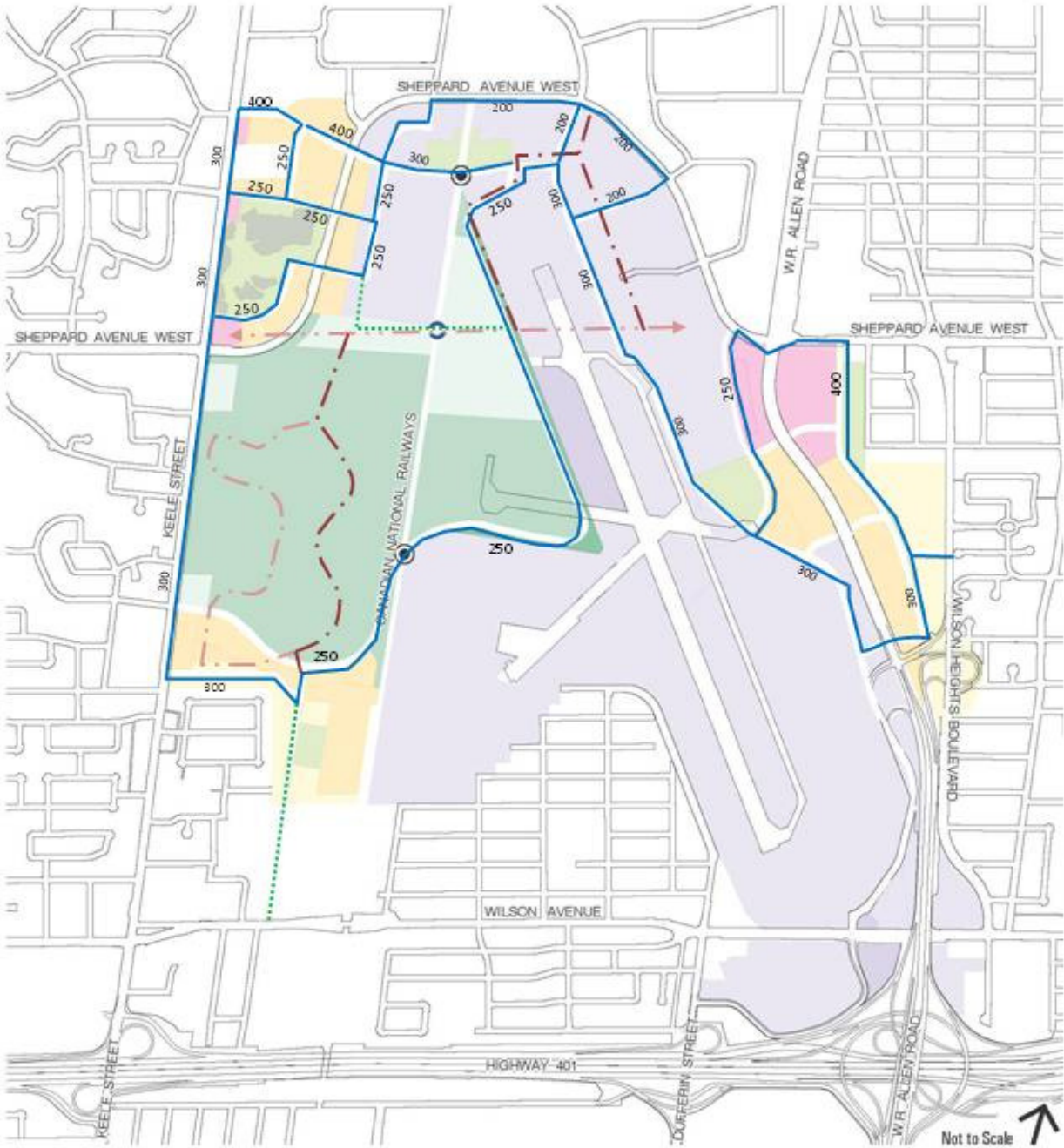
**Table 1. Infrastructure Cost Estimates**

The cost estimates have been prepared based on the information available at the time of the servicing review. As noted in earlier reports, there are items that will require further review and costing as the City of Toronto completes various technical studies (review of boundary between Pressure Districts 5 and 6 and available capacity in the Almore/Timberlane sanitary pipes).

All cost estimates have been prepared based on 2009 costs.

## **APPENDICES**

APPENDIX A- Recommended Water Distribution Network

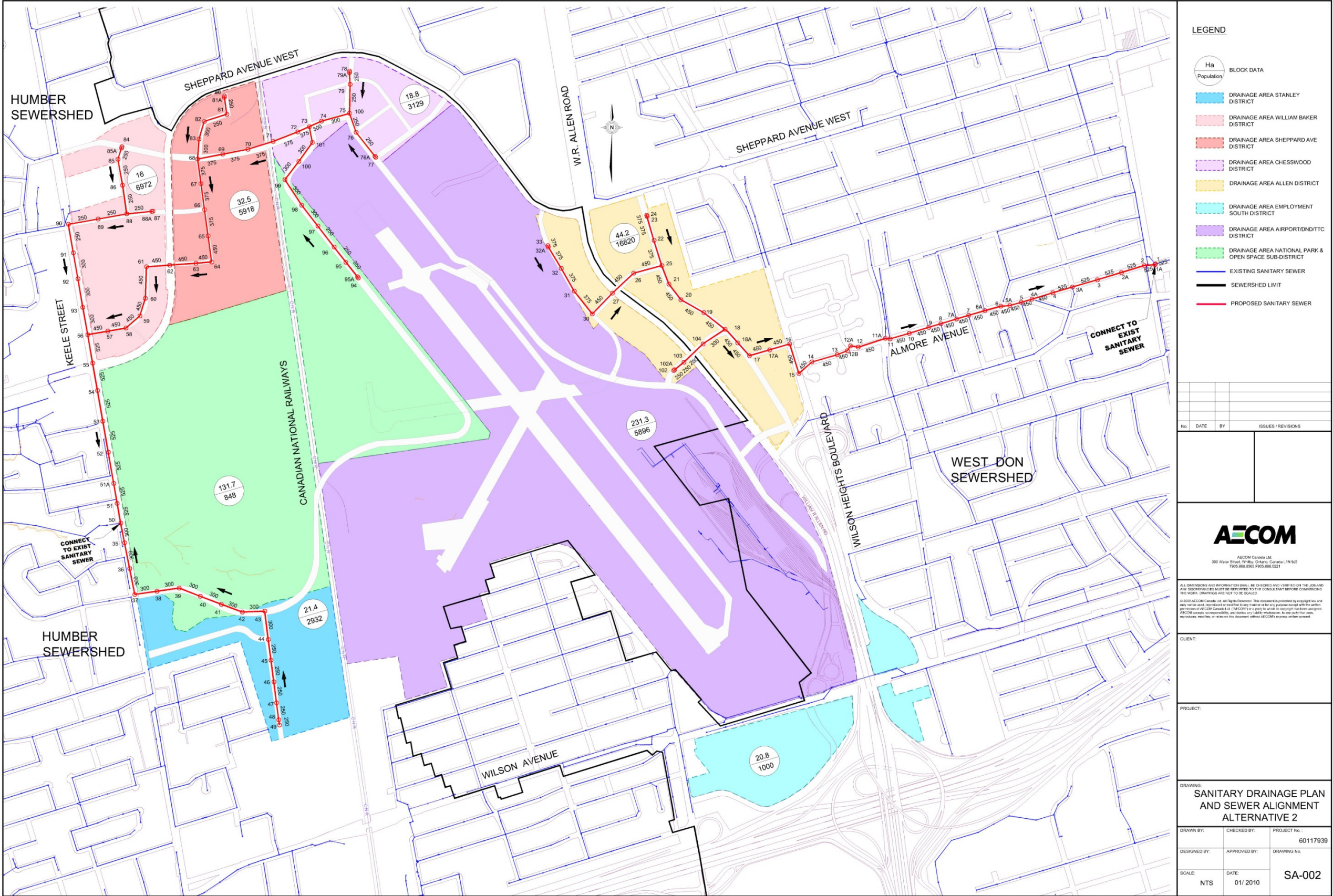


LEGEND

- |  |                                      |  |  |
|--|--------------------------------------|--|--|
|  | Existing Private Watermain           |  | Potential Additional Public Watermains |
|  | New Private Watermains (in progress) |  |  |
|  | New Public Watermains                |  |  |



APPENDIX B- Recommended Wastewater Collection System





APPENDIX C Recommended Stormwater Collection System

